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THE ENCYCLOPÆDIA BRITANNICA

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Dubner to Dyeing

Articles in This Slice

DÜBNER, JOHANN FRIEDRICH (1802-1867), German classical scholar (naturalized a Frenchman), was born in Hör selgau, near Gotha, on the 20th of December 1802. After studying at the university of Göttingen he returned to Gotha, where from 1827-1832 he held a post (*inspector coenobii*) in connexion with the gymnasium. During this period he made his name known by editions of Justin and Persius (after Casaubon). In 1832 he was invited by the brothers Didot to Paris, to co-operate in a new edition of H. Etienne's Greek *Thesaurus*. He also contributed largely to the *Bibliotheca Graeca* published by the same firm, a series of Greek classics with Latin translation, critical notes and valuable indexes. One of Dübner's most important works was an edition of Caesar undertaken by command of Napoleon III., which obtained him the cross of the Legion of Honour. His editions are considered to be models of literary and philological criticism, and did much to raise the standard of classical scholarship in France. He violently attacked Burnouf's method of teaching Greek, but without result. Dübner may have gone too far in his zeal for reform, and his opinions may have been too harshly expressed, but time has shown him to be right. The old text-books have been discarded, and a great improvement in classical teaching has taken place in recent years. Dübner died at Montreuil-sous-Bois, near Paris, on the 13th of December 1867.

See F. Godefroy, *Notice sur J.F. Dübner* (1867); Sainte-Beuve, *Discours à la mémoire de Dübner* (1868); article in *Allgemeine deutsche Biographic*.

DUBOIS, FRANÇOIS CLÉMENT THÉODORE (1837-), French musical composer, was born at Rosney (Marne) on the 24th of August 1837. He studied at the Conservatoire under Ambroise Thomas, and won the Grand Prix de Rome in 1861 with his cantata *Atala*. After the customary sojourn in Rome, Dubois returned to Paris and devoted himself to teaching. He was appointed “maitre de Chapelle” at the church of Ste Clotilde, where César Franck was organist, in 1863, and remained at this post for five years, during which time he composed a quantity of sacred music, notably *Les Sept Paroles du Christ* (1867), a work which has become well known in France. In 1868 he became “maitre de Chapelle” at the church of the Madeleine, and nine years later succeeded Camille Saint-Saëns there as organist. He became professor of harmony at the Conservatoire in 1871, and was appointed professor of composition in succession to Léo Delibes in 1891. At the death of Ambroise Thomas in 1896 he became director of the Conservatoire. Dubois is an extremely prolific composer and has written in a variety of forms. His sacred works include four masses, a requiem, *Les Sept Paroles du Christ*, a large number of motets and pieces for organ. For the theatre he has composed *La Guzla de l’Émir*, an opéra comique in one act, played at the Théâtre Lyrique de l’Athénée in 1873; *Le Pain bis*, an opéra comique in one act, given at the Opéra Comique in 1879; *La Farandole*, a ballet in three acts, produced at the Grand Opéra in 1883; *Aben-Hamet*, a four-act opera, heard at the Théâtre Italien in 1884; *Xavière*, a dramatic idyll in three acts, played at the Opéra Comique in 1895. His orchestral works include two concert overtures, the overture to *Frithioff* (1880), several suites, *Marche héroïque de Jeanne d’Arc* (1888), &c. He is also the author of *Le Paradis perdu*, an oratorio which gained for him the prize offered by the city of Paris in 1878; *L’Enlèvement de Proserpine* (1879), a *scène lyrique*; *Délivrance* (1887), a cantata; *Hylas* (1890), a *scène lyrique* for soli, chorus and orchestra; *Notre Dame de la mer*, a symphonic poem (1897); and a musical setting of a Latin ode on the baptism of Clovis (1899). In addition, he composed much for the piano and voice.

DUBOIS, GUILLAUME (1656-1723), French cardinal and statesman, was born at Brive, in Limousin, on the 6th of September 1656. He was, according to his enemies, the son of an apothecary, his father being in fact a doctor of medicine of respectable family, who kept a small drug store as part of the necessary outfit of a country practitioner. He was educated at the school of the Brothers of the Christian Doctrine at Brive, where he received the tonsure at the age of thirteen. In 1672, having finished his philosophy course, he was given a scholarship at the college of St Michel at Paris by Jean, marquis de Pompadour, lieutenant-general of the Limousin. The head of the college, the abbé Antoine Faure, who was from the same part of the country as himself, befriended the lad, and continued to do so for many years after he had finished his course, finding him pupils and ultimately obtaining for him the post of tutor to the young duke of Chartres, afterwards the regent duke of Orleans. Astute, ambitious and unrestrained by conscience, Dubois ingratiated himself with his pupil, and, while he gave him formal school lessons, at the same time pandered to his evil passions and encouraged him in their indulgence. He gained the favour of Louis XIV. by bringing about the marriage of his pupil with Mademoiselle de Blois, a natural but legitimated daughter of the king; and for this service he was rewarded with the gift of the abbey of St Just in Picardy. He was present with his pupil at the battle of Steinkirk, and “faced fire,” says Marshal Luxembourg, “like a grenadier.” Sent to join the French embassy in London, he made himself so active that he was recalled by the request of the ambassador, who feared his intrigues. This, however, tended to raise his credit with the king. When the duke of Orleans became regent (1715) Dubois, who had for some years acted as his secretary, was made councillor of state, and the chief power passed gradually into his hands.

His policy was steadily directed towards maintaining the peace of Utrecht, and this made him the main opponent of the schemes of Cardinal Alberoni for the aggrandizement of Spain. To counteract Alberoni’s intrigues, he suggested an alliance with England, and in the face of great difficulties succeeded in negotiating the Triple Alliance (1717). In 1719 he sent an army into Spain, and forced Philip V. to dismiss Alberoni. Otherwise his policy remained that of peace. Dubois’s success strengthened him against the bitter opposition of a large section of the court. Political honours did not satisfy him, however. The church offered the richest field for exploitation, and in spite of his dissolute life he impudently prayed the regent to give him the archbishopric of Cambray, the richest in France. His demand was supported by George I., and the regent yielded. In one day all the usual orders were

conferred on him, and even the great preacher Massillon consented to take part in the ceremonies. His next aim was the cardinalate, and, after long and most profitable negotiations on the part of Pope Clement XI., the red hat was given to him by Innocent XIII. (1721), whose election was largely due to the bribes of Dubois. It is estimated that this cardinalate cost France about eight million francs. In the following year he was named first minister of France (August). He was soon after received at the French Academy; and, to the disgrace of the French clergy, he was named president of their assembly.

When Louis XV. attained his majority in 1723 Dubois remained chief minister. He had accumulated an immense private fortune, possessing in addition to his see the revenues of seven abbeys. He was, however, a prey to the most terrible pains of body and agony of mind. His health was ruined by his debaucheries, and a surgical operation became necessary. This was almost immediately followed by his death, at Versailles, on the 10th of August 1723. His portrait was thus drawn by the duc de St Simon:—"He was a little, pitiful, wizened, herring-gutted man, in a flaxen wig, with a weasel's face, brightened by some intellect. All the vices —perfidy, avarice, debauchery, ambition, flattery—fought within him for the mastery. He was so consummate a liar that, when taken in the fact, he could brazenly deny it. Even his wit and knowledge of the world were spoiled, and his affected gaiety was touched with sadness, by the odour of falsehood which escaped through every pore of his body." This famous picture is certainly biassed. Dubois was unscrupulous, but so were his contemporaries, and whatever vices he had, he gave France peace after the disastrous wars of Louis XIV.

In 1789 appeared *Vie privée du Cardinal Dubois*, attributed to one of his secretaries, Mongez; and in 1815 his *Mémoires secrets et correspondance inédite*, edited by L. de Sevelinges. See also A. Cheruel, *Saint-Simon et l'abbé Dubois*; L. Wiesener, *Le Régent, l'abbé Dubois et les Anglais* (1891); and memoirs of the time.

DUBOIS, JEAN ANTOINE (1765-1848), French Catholic missionary in India, was ordained in the diocese of Viviers in 1792, and sailed for India in the same year under the direction of the Missions Étrangères. He was at first attached to the Pondicherry mission, and worked in the southern districts of the present Madras Presidency. On the fall of Seringapatam in 1799 he went to Mysore to reorganize the Christian community that had been shattered by Tipu Sultan. Among the benefits which he conferred upon his impoverished flock were the founding of agricultural colonies and the introduction of vaccination as a preventive of smallpox. But his great work was his record of *Hindu Manners, Customs and Ceremonies*. Immediately on his arrival in India he saw that the work of a Christian missionary should be based on a thorough acquaintance with the innermost life and character of the native population. Accordingly he abjured European society, adopted the native style of clothing, and made himself in habit and costume as much like a Hindu as he could. He gained an extraordinary welcome amongst people of all castes and conditions, and is still spoken of in many parts of South India with affection and esteem as "the prince's son, the noblest of Europeans." Although Dubois modestly disclaimed the rank of an author, his collections were not so much drawn from the Hindu sacred books as from his own careful and vivid observations, and it is this, united to a remarkable prescience, that makes his work so valuable. It is divided into three parts: (1) a general view of society in India, and especially of the caste system; (2) the four states of Brahminical life; (3) religion—feasts, temples, objects of worship. Not only does the abbé give a shrewd, clear-sighted, candid account of the manners and customs of the Hindus, but he provides a very sound estimate of the British position in India, and makes some eminently just observations on the difficulties of administering the Empire according to Western notions of civilization and progress with the limited resources that are available. Dubois's French MS. was purchased for eight thousand rupees by Lord William Bentinck for the East India Company in 1807; in 1816 an English translation was published, and of this edition about 1864 a curtailed reprint was issued. The abbé, however, largely recast his work, and of this revised text (now in the India Office) an edition with notes was published in 1897 by H.K. Beauchamp. Dubois left India in January 1823, with a special pension conferred on him by the East India Company, and on reaching Paris was appointed director of the Missions Étrangères, of which he afterwards became superior (1836-1839). He translated into French the famous book of Hindu fables called *Panchatantra*, and also a work called *The Exploits of the Guru*

Paramarta. Of more interest were his *Letters on the State of Christianity in India*, in which he asserted his opinion that under existing circumstances there was no human possibility of so overcoming the invincible barrier of Brahminical prejudice as to convert the Hindus as a nation to any sect of Christianity. He acknowledged that low castes and outcastes might be converted in large numbers, but of the higher castes he wrote: “Should the intercourse between individuals of both nations, by becoming more intimate and more friendly, produce a change in the religion and usages of the country, it will not be to turn Christians that they will forsake their own religion, but rather ... to become mere atheists.” He died in 1848.

DUBOIS, PAUL (1829-1905), French sculptor and painter, was born at Nogent-sur-Seine on the 18th of July 1829. He studied law to please his family, and art to please himself, and finally adopted the latter, and placed himself under Toussaint. After studying at the École des Beaux-Arts, Dubois went to Rome. His first contributions to the Paris Salon (1860) were busts of “The Countess de B.” and “A Child.” For his first statues, “St John the Baptist” and “Narcissus at the Bath” (1863), he was awarded a medal of the second class. The statue of “The Infant St John,” which had been modelled in Florence in 1860, was exhibited in Paris in bronze, and was acquired by the Luxemburg. “A Florentine Singer of the Fifteenth Century,” one of the most popular statuettes in Europe, was shown in 1865; “The Virgin and Child” appeared in the Paris Universal Exhibition in 1867; “The Birth of Eve” was produced in 1873, and was followed by striking busts of Henner, Dr Parrot, Paul Baudry, Pasteur, Gounod and Bonnat, remarkable alike for life, vivacity, likeness, refinement and subtle handling. The chief work of Paul Dubois was “The Tomb of General Lamoricière” in the cathedral of Nantes, a brilliant masterpiece conceived in the Renaissance spirit, with allegorical figures and groups representing Warlike Courage, Charity, Faith and Meditation, as well as bas-reliefs and enrichments; the two first-named works were separately exhibited in the Salon of 1877. The medallions represent Wisdom, Hope, Justice, Force, Rhetoric, Prudence and Religion. The statue of the “Constable Anne de Montmorency” was executed for Chantilly, and that of “Joan of Arc” (1889) for the town of Reims. The Italian influence which characterized the earlier work of Dubois disappeared as his own individuality became clearly asserted. As a painter he restricted himself mainly to portraiture. “My Children” (1876) being probably his most noteworthy achievement. His drawings and copies after the Old Masters are of peculiar excellence: they include “The Dead Christ” (after Sebastian del Piombo) and “Adam and Eve” (after Raphael). In 1873 Dubois was appointed keeper of the Luxemburg Museum. He succeeded Guillaume as director of the École des Beaux-Arts, 1878, and Perraud as member of the Académie des Beaux-Arts. Twice at the Salon he obtained the medal of honour (1865 and 1876), and once at the Universal Exhibition (1878). He also won numerous other distinctions, and was appointed grand cross of the Legion of Honour. He was made a member of several European orders, and in 1895 was elected an honorary foreign academician of the Royal Academy of London. He died at Paris in 1905.

DUBOIS, PIERRE (*c.* 1250-*c.* 1312), French publicist in the reign of Philip the Fair, was the author of a series of political pamphlets embodying original and daring views. He was known to Jean du Tillet in the 16th, and to Pierre Dupuy in the 17th century, but remained practically forgotten until the middle of the 19th century, when his history was reconstructed from his works. He was a Norman by birth, probably a native of Coutances, where he exercised the functions of royal advocate of the bailliage and procurator of the university. He was educated at the university of Paris, where he heard St Thomas Aquinas and Siger of Brabant. He was, nevertheless, no adherent of the scholastic philosophy, and appears to have been conversant with the works of Roger Bacon. Although he never held any important political office, he must have been in the confidence of the court when, in 1300, he wrote his anonymous *Summaria, brevis et compendiosa doctrina felicis expedicionis et abbreviationis guerrarum et litium regni Francorum*, which is extant in a unique MS., but is analysed by N. de Wailly in the *Bibliothèque de l’École des Chartes* (2nd series, vol. iii.). In the contest between Philip the Fair and Boniface VIII. Dubois identified

himself completely with the secularizing policy of Philip, and poured forth a series of anti-clerical pamphlets, which did not cease even with the death of Boniface. His *Supplication du pueble de France au roy contre le pape Boniface le VIII*e, printed in 1614 in *Acta inter Bonifacium VIII. et Philippum Pulchrum*, dates from 1304, and is a heated indictment of the temporal power. He represented Coutances in the states-general of 1302, but in 1306 he was serving Edward I. as an advocate in Guienne, without apparently abandoning his Norman practice by which he had become a rich man. The most important of his works, his treatise *De recuperatione terrae sanctae*,[1] was written in 1306, and dedicated in its extant form to Edward I., though it is certainly addressed to Philip. Dubois outlines the conditions necessary to a successful crusade—the establishment and enforcement of a state of peace among the Christian nations of the West by a council of the church; the reform of the monastic, and especially of the military, orders; the reduction of their revenues; the instruction of a number of young men and women in oriental languages and the natural sciences with a view to the government of Eastern peoples; and the establishment of Philip of Valois as emperor of the East. The king of France was in fact, when once the pope was deprived of the temporal power, to become the suzerain of the Western nations, and in a later and separate memoir Dubois proposed that he should cause himself to be made emperor by Clement V. His zeal for the crusade was probably subordinate to the desire to secure the wealth of the monastic orders for the royal treasury, and to transfer the ecclesiastical jurisdiction to the crown. His ideas on education, on the celibacy of the clergy, and his schemes for the codification of French law, were far in advance of his time. He was an early and violent “Gallican,” and the first of the great French lawyers who occupied themselves with high politics. In 1308 he attended the states-general at Tours. He is generally credited with *Quaedam proposita papae a rege super facto Templariorum*, a draft epistle supposed to be addressed to Clement by Philip. This was followed by other pamphlets in the same tone, in one of which he proposed that a kingdom founded on the property of the Templars in the East should be established on behalf of Philip the Tall.

See an article by E. Renan in *Hist. litt. de la France*, vol. xxvi. pp. 471-536; P. Dupuy *Hist. de la condamnation ... des Templiers* (Brussels, 1713), and *Hist. du différend entre le pape Boniface VIII et Philippe le Bel* (Paris 1655); and *Notices et extraits de manuscrits*, vol. xx.

1 Printed in *Collections à servir à l’étude de l’histoire* (1891).

DUBOIS, a borough of Clearfield county, Pennsylvania, U.S.A., 129 m. by rail N.E. of Pittsburg. Pop. (1890) 6149, (1900) 9375, of whom 1655 were foreign-born; (1910 census) 12,623. It is served by the Pennsylvania, the Buffalo, Rochester & Pittsburg, and the Buffalo & Susquehanna railways. The borough is built on a small plateau surrounded by hills, on the west slope of the Alleghany Mountains, nearly 1400 ft. above sea-level. Its chief importance is as a coal and lumber centre; among its manufacturing establishments are blast furnaces, iron works, machine shops, railway repair shops, tanneries, planing mills, flour mills, locomotive works and a glass factory. Dubois was first settled in 1872, was named in honour of its founder, John Dubois, and was incorporated in 1881.

DUBOIS-CRANCÉ, EDMOND LOUIS ALEXIS (1747-1814), French Revolutionist, born at Charleville, was at first a musketeer, then a lieutenant of the *maréchaux*, or guardsmen of the old régime. He embraced liberal ideas, and in 1789 was elected deputy to the states-general by the third estate of Vitry-le-François. At the Constituent Assembly, of which he was named secretary in November 1789, he busied himself mainly with military reforms. He wished to see the old military system, with its caste distinctions and its mercenaries, replaced by an organization of national guards in which all citizens should be admitted. In his report, on the 12th of December 1789, he gave utterance for the first time to the idea of *conscription*, which he opposed to the recruiting system of the old régime. His report was not, however, adopted. He succeeded in securing the Assembly’s vote that any slave who

touched French soil should become free. After the Constituent, Dubois-Crancé was named *maréchal de camp*, but he refused to be placed under the orders of Lafayette and preferred to serve as a simple grenadier. Elected to the Convention by the department of the Ardennes, he sat among the *Montagnards*, but without following any one leader, either Danton or Robespierre. In the trial of Louis XVI. he voted for death without delay or appeal. On the 21st of February 1793 he was named president of the Convention. Although he was a member of the two committees of general defence which preceded that of public safety, he did not belong to the latter at its creation. But he composed a remarkable report on the army, recommending two measures which contributed largely to its success, the rapid advancement of the lower officers, which opened the way for the most famous generals of the Revolution, and the fusion of the volunteers with the veteran troops. In August 1793 Dubois-Crancé was designated "representative on mission" to the army of the Alps, to direct the siege of Lyons, which had revolted against the republic. Accused of lack of energy, he was replaced by G. Couthon. On his return he easily justified himself, but was excluded from the Jacobin club at the instance of Robespierre, before whom he refused to bend. Consequently he was naturally drawn to participate in the revolution of the 9th of Thermidor of the year II., directed against Robespierre. But he would not join the Royalist reaction which followed, and was one of the committee of five which had to oppose the Royalist insurrection of Vendémiaire (see French Revolution). It was also during this period that Dubois-Crancé was named a member of the committee of public safety, then much reduced in importance. After the Convention, under the Directory, Dubois-Crancé was a member of the Council of the Five Hundred, and was appointed inspector-general of infantry; then, in 1799, minister of war. Opposed to the *coup d'état* of the 18th of Brumaire, he lived in retirement during the Consulate and the Empire. He died at Rethel on the 29th of June 1814. His portrait stands in the foreground in J.L. David's celebrated sketch of the "Oath of the Tennis Court."

Among the numerous writings of Dubois-Crancé may be noticed his *Observations sur la constitution militaire, ou bases du travail proposé au comité militaire*. See H.F.T. Jung, *Dubois de Crancé. L'armée et la Révolution, 1789-1794* (2 vols., Paris, 1884).

DU BOIS-REYMOND, EMIL (1818-1896), German physiologist, was born in Berlin on the 7th of November 1818. The Prussian capital was the place both of his birth and of his life's work, and he will always be counted among Germany's great scientific men; yet he was not of German blood. His father belonged to Neuchâtel, his mother was of Huguenot descent, and he spoke of himself as "being of pure Celtic blood." Educated first at the French college in Berlin, then at Neuchâtel, whither his father had returned, he entered in 1836 the university of Berlin. He seems to have been uncertain at first as to the bent of his studies, for he sat at the feet of the great ecclesiastical historian August Neander, and dallied with geology; but eventually he threw himself into the study of medicine, with such zeal and success as to attract the notice of the great teacher of anatomy and physiology, who was then making Berlin famous as a school for the sciences ancillary to medicine. Johannes Müller may be regarded as the central figure in the history of modern physiology. the physiology of the 19th century. Müller's earlier studies had been distinctly physiological; but his inclination, no less than his position as professor of anatomy as well as of physiology in the university of Berlin, led him later on into wide studies of comparative anatomy, and these, aided by the natural bent of his mind towards problems of general philosophy, gave his views of physiology a breadth and a depth which profoundly influenced the progress of that science in his day. He had, about the time when the young Du Bois-Reymond came to his lectures, published his great *Elements of Physiology*, the dominant note of which may be said to be this:—"Though there appears to be something in the phenomena of living beings which cannot be explained by ordinary mechanical, physical or chemical laws, much may be so explained, and we may without fear push these explanations as far as we can, so long as we keep to the solid ground of observation and experiment." Müller recognized in the Neuchâtel lad a mind fitted to carry on physical researches into the phenomena of living things in a legitimate way. He made him in 1840 his assistant in physiology, and as a starting-point for an inquiry put into his hands the essay which the Italian, Carlo Matteucci, had just published on the electric phenomena of animals. This determined the work of Du Bois-Reymond's life. He chose as the subject of his graduation thesis "Electric Fishes," and so commenced a long series of investigations on animal electricity, by which he enriched

science and made for himself a name. The results of these inquiries were made known partly in papers communicated to scientific journals, but also and chiefly in his work *Researches on Animal Electricity*, the first part of which appeared in 1848, the last in 1884.

This great work may be regarded under two aspects. On the one hand, it is a record of the exact determination and approximative analysis of the electric phenomena presented by living beings. Viewed from this standpoint, it represents a remarkable advance of our knowledge. Du Bois-Reymond, beginning with the imperfect observations of Matteucci, built up, it may be said, this branch of science. He did so by inventing or improving methods, by devising new instruments of observation or by adapting old ones. The debt which science owes to him on this score is a large one indeed. On the other hand, the volumes in question contain an exposition of a theory. In them Du Bois-Reymond put forward a general conception by the help of which he strove to explain the phenomena which he had observed. He developed the view that a living tissue, such as muscle, might be regarded as composed of a number of electric molecules, of molecules having certain electric properties, and that the electric behaviour of the muscle as a whole in varying circumstances was the outcome of the behaviour of these native electric molecules. It may perhaps be said that this theory has not stood the test of time so well as have Du Bois-Reymond's other more simple deductions from observed facts. It was early attacked by Ludimar Hermann, who maintained that a living untouched tissue, such as a muscle, is not the subject of electric currents so long as it is at rest, is isoelectric in substance, and therefore need not be supposed to be made up of electric molecules, all the electric phenomena which it manifests being due to internal molecular changes associated with activity or injury. Although most subsequent observers have ranged themselves on Hermann's side, it must nevertheless be admitted that Du Bois-Reymond's theory was of great value if only as a working hypothesis, and that as such it greatly helped in the advance of science.

Du Bois-Reymond's work lay chiefly in the direction of animal electricity, yet he carried his inquiries—such as could be studied by physical methods—into other parts of physiology, more especially into the phenomena of diffusion, though he published little or nothing concerning the results at which he arrived. For many years, too, he exerted a great influence as a teacher. In 1858, upon the death of Johannes Müller, the chair of anatomy and physiology, which that great man had held, was divided into a chair of human and comparative anatomy, which was given to K.B. Reichert (1811-1883), and a chair of physiology, which naturally fell to Du Bois-Reymond. This he held to his death, carrying out his researches for many years under unfavourable conditions of inadequate accommodation. In 1877, through his influence, the government provided the university with a proper physiological laboratory. In 1851 he was admitted into the Academy of Sciences of Berlin, and in 1867 became its perpetual secretary. For many years he and his friend H. von Helmholtz, who like him had been a pupil of Johannes Müller, were prominent men in the German capital. Acceptable at court, they both used their position and their influence for the advancement of science. Both, from time to time as opportunity offered, stepped out of the narrow limits of the professorial chair and gave the world their thoughts concerning things on which they could not well dwell in the lecture room. Du Bois-Reymond, as has been said, had in his earlier years wandered into fields other than those of physiology and medicine, and in his later years he went back to some of these. His occasional discourses, dealing with general topics and various problems of philosophy, show that to the end he possessed the historic spirit which had led him as a lad to listen to Neander; they are marked not only by a charm of style, but by a breadth of view such as might be expected from Johannes Müller's pupil and friend. He died in the city of his birth and adoption on the 26th of November 1896.

(M. F.)

DUBOS, JEAN-BAPTISTE (1670-1742), French author, was born at Beauvais in December 1670. After studying for the church, he renounced theology for the study of public law and politics. He was employed by M. de Torcy, minister of foreign affairs, and by the regent and Cardinal Dubois in several secret missions, in which he acquitted himself with great success. He was rewarded with a pension and several benefices. Having obtained these, he retired from political life, and devoted himself to history and literature. He gained such distinction as an author that in 1720 he was elected a member of the French Academy, of which, in 1723, he was appointed perpetual secretary in the room of M. Dacier. He died at

Paris on the 23rd of March 1742, repeating as he expired the well-known remark of an ancient, “Death is a law, not a punishment.” His first work was *L’Histoire des quatre Gordiens prouvée et illustrée par des médailles* (Paris, 1695, 12mo), which, in spite of its ingenuity, did not succeed in altering the common opinion, which only admits three emperors of this name. About the commencement of the war of 1701, being charged with different negotiations both in Holland and in England, with the design to engage these powers if possible to adopt a pacific line of policy, he, in order to promote the objects of his mission, published a work entitled *Les Intérêts de l’Angleterre mal entendus dans la guerre présente* (Amsterdam, 1703, 12mo). But as this work contained indiscreet disclosures, of which the enemy took advantage, and predictions which were not fulfilled, a wag took occasion to remark that the title ought to be read thus: *Les Intérêts de l’Angleterre mal entendus par l’abbé Dubos*. It is remarkable as containing a distinct prophecy of the revolt of the American colonies from Great Britain. His next work was *L’Histoire de la Ligue de Cambray* (Paris, 1709, 1728 and 1785, 2 vols. 12mo), a full, clear and interesting history, which obtained the commendation of Voltaire. In 1734 he published his *Histoire critique de l’établissement de la monarchie française dans les Gaules* (3 vols. 4to)—a work the object of which was to prove that the Franks had entered Gaul, not as conquerors, but at the request of the nation, which, according to him, had called them in to govern it. But this system, though unfolded with a degree of skill and ability which at first procured it many zealous partisans, was victoriously refuted by Montesquieu at the end of the thirtieth book of the *Esprit des lois*. His *Réflexions critiques sur la poésie et sur la peinture*, published for the first time in 1719 (2 vols. 12mo), but often reprinted in three volumes, constitute one of the works in which the theory of the arts is explained with the utmost sagacity and discrimination. Like his history of the League of Cambray, it was highly praised by Voltaire. The work was rendered more remarkable by the fact that its author had no practical acquaintance with any one of the arts whose principles he discussed. Besides the works above enumerated, a manifesto of Maximilian, elector of Bavaria, against the emperor Leopold, relative to the succession in Spain, has been attributed to Dubos, chiefly, it appears, from the excellence of the style.

DUBUQUE, a city and the county-seat of Dubuque county, Iowa, U.S.A., on the Mississippi river, opposite the boundary line between Wisconsin and Illinois. Pop. (1890) 30,311; (1900) 36,297; (1905, state census) 41,941 (including 6835 foreign-born, the majority of whom were German and Irish); (1910 U.S. census) 38,494. Dubuque is served by the Illinois Central, the Chicago, Milwaukee & Saint Paul (which has repair shops here), the Chicago, Burlington & Quincy, and the Chicago Great Western railways; it also has a considerable river traffic. The river is spanned here by a railway bridge and two wagon bridges. The business portion of the city lies on the low lands bordering the river; many of the residences are built on the slopes and summits of bluffs commanding extensive and picturesque views. Among the principal buildings are the Carnegie-Stout free public library (which in 1908 had 23,600 volumes, exclusive of the valuable Senator Allison collection of public documents), the public high school, and the house of the Dubuque Club. Dubuque is a Roman Catholic archiepiscopal see, and is the seat of St Joseph’s College (1873), a small Roman Catholic institution; of Wartburg Seminary (1854), a small Evangelical Lutheran theological school; of the German Presbyterian Theological School of the North-west (1852); of St Joseph’s Ladies’ Academy; and of Bayless Business College. Fifteen miles from Dubuque is a monastery of Trappist monks. Among the city’s charitable institutions are the Finley and the Mercy hospitals, a home for the friendless, a rescue home, a House of the Good Shepherd, and an insane asylum. In 1900 Dubuque ranked fourth and in 1905 fifth among the cities of the state as a manufacturing centre, the chief products being those of the planing mills and machine shops, and furniture, sashes and doors, liquors, carriages, wagons, coffins, clothing, boots and shoes, river steam boats, barges, torpedo boats, &c., and the value of the factory product being $9,279,414 in 1905 and $9,651,247 in 1900. The city lies in a region of lead and zinc mines, quantities of zinc ore in the form of black-jack being taken from the latter. Dubuque is important as a distributing centre for lumber, hardware, groceries and dry-goods.

As early as 1788 Julien Dubuque (1765-1810), attracted by the lead deposits in the vicinity, which were then being crudely worked by the Sauk and Fox Indians, settled here and carried on the mining industry until his death. In June 1829 miners from Galena, Illinois,

attempted to make a settlement here in direct violation of Indian treaties, but were driven away by United States troops under orders from Colonel Zachary Taylor. Immediately after the Black Hawk War, white settlers began coming to the mines. Dubuque was laid out under an act of Congress approved on the 2nd of July 1836, and was incorporated in 1841.

DU CAMP, MAXIME (1822-1894), French writer, the son of a successful surgeon, was born in Paris on the 8th of February 1822. He had a strong taste for travel, which his father's means enabled him to indulge as soon as his college days were over. Between 1844 and 1845, and again, in company with Gustave Flaubert, between 1849 and 1851, he travelled in Europe and the East, and made excellent use of his experiences in books published after his return. In 1851 he was one of the founders of the *Revue de Paris* (suppressed in 1858), and was a frequent contributor to the *Revue des deux mondes*. In 1853 he was made an officer of the Legion of Honour. He served as a volunteer with Garibaldi in 1860, and gave an account of his experiences in his *Expédition des deux Siciles* (1861). In 1870 he was nominated for the senate, but his election was frustrated by the downfall of the Empire. He was elected a member of the French Academy in 1880, mainly, it is said, on account of his history of the Commune, published under the title of *Les Convulsions de Paris* (1878-1880). His writings include among others the *Chants modernes* (1855), *Convictions* (1858); numerous works on travel, *Souvenirs et paysages d'orient* (1848), *Égypte, Nubie, Palestine, Syrie* (1852); works of art criticism, *Les Salons de 1857, 1859, 1861*; novels, *L'Homme au bracelet d'or* (1862), *Une Histoire d'amour* (1889); literary studies, *Théophile Gautier* (1890). Du Camp was the author of a valuable book on the daily life of Paris, *Paris, ses organes, ses fonctions, sa vie dans la seconde moitié du XIX^{e} siècle* (1869-1875). He published several works on social questions, one of which, the *Mœurs de mon temps*, was to be kept sealed in the Bibliothèque Nationale until 1910. His *Souvenirs littéraires* (2 vols., 1882-1883) contain much information about contemporary writers, especially Gustave Flaubert, of whom Du Camp was an early and intimate friend. He died on the 9th of February 1894. Du Camp was one of the earliest amateur photographers, and his books of travel were among the first to be illustrated by means of what was then a new art.

DU CANGE, CHARLES DU FRESNE, Sieur (1610-1688), one of the lay members of the great 17th century group of French critics and scholars who laid the foundations of modern historical criticism, was born at Amiens on the 18th of December 1610. At an early age his father sent him to the Jesuits' college at Amiens, where he greatly distinguished himself. Having completed the usual course at this seminary, he applied himself to the study of law at Orleans, and afterwards went to Paris, where in 1631 he was received as an advocate before the parliament. Meeting with very slight success in his profession, he returned to his native city, and in July 1638 married Catherine Dubois, daughter of a royal official, the treasurer in Amiens; and in 1647 he purchased the office of treasurer from his father-in-law, but its duties did not interfere with the literary and historical work to which he had devoted himself since returning to Amiens. Forced to leave his native city in 1668 in consequence of a plague, he settled in Paris, where he resided until his death on the 23rd of October 1688. In the archives of Paris Du Cange was able to consult charters, diplomas, manuscripts and a multitude of printed documents, which were not to be met with elsewhere. His industry was exemplary and unremitting, and the number of his literary works would be incredible, if the originals, all in his own handwriting, were not still extant. He was distinguished above nearly all the writers of his time by his linguistic acquirements, his accurate and varied knowledge, and his critical sagacity. Of his numerous works the most important are the *Glossarium ad scriptores mediae et infimae latinitatis* (Paris, 1678), and the *Glossarium ad scriptores mediae et infimae graecitatis* (Lyons, 1688), which are indispensable aids to the student of the history and literature of the middle ages. To the three original volumes of the Latin *Glossarium*, three supplementary volumes were added by the Benedictines of St Maur (Paris, 1733-1736), and a further addition of four volumes (Paris, 1766), by a Benedictine, Pierre Carpentier (1697-1767). There were other editions, and an abridgment with some

corrections was brought out by J.C. Adelung (Halle, 1772-1784). The edition in seven volumes edited by G.A.L. Henschel (Paris, 1840-1850) includes these supplements and also further additions by the editor, and this has been improved and published in ten volumes by Léopold Favre (Niort, 1883-1887). An edition of the Greek *Glossarium* was published at Breslau in 1889.

Du Cange took considerable interest in the history of the later empire, and wrote *Historia Byzantina duplici commentario illustrato* (Paris, 1680), and an introduction to his edition and translation into modern French of Geoffrey de Villehardouin's *Histoire de l'empire de Constantinople sous les empereurs français* (Paris, 1657). He also brought out editions of the Byzantine historians, John Cinnamus and John Zonaras, as *Joannis Cinnami historiarum de rebus gestis a Joanne et Manuele Comnenis* (Paris, 1670) and *Joannis Zonarae Annales ab exordio mundi ad mortem Alexii Comneni* (Paris, 1686). He edited Jean de Joinville's *Histoire de St Louis, roi de France* (Paris, 1668), and his other works which may be mentioned are *Traité historique du chef de St Jean Baptiste* (Paris, 1666); *Lettre du Sieur N., conseiller du roi* (Paris, 1682); *Cyrilli, Philoxeni, aliorumque veterum glossaria*, and *Mémoire sur le projet d'un nouveau recueil des historiens de France, avec le plan général de ce recueil*, which has been inserted by Jacques Lelong in his *Bibliothèque historique de la France* (Paris, 1768-1778). His last work, *Chronicon Paschale a mundo condito ad Heraclii imperatoris annum vigesimum* (Paris, 1689), was passing through the press when Du Cange died, and consequently it was edited by Étienne Baluze, and published with an *éloge* of the author prefixed.

His autograph manuscripts and his large and valuable library passed to his eldest son, Philippe du Fresne, who died unmarried in 1692. They then came to his second son, François du Fresne, who sold the collection, the greater part of the manuscripts being purchased by the abbé du Champs. The abbé handed them over to a bookseller named Mariette, who resold part of them to Baron Hohendorf. The remaining part was acquired by a member of the family of Hozier, the French genealogists. The French government, however, aware of the importance of all the writings of Du Cange, succeeded, after much trouble, in collecting the greater portion of the manuscripts, which were preserved in the imperial library at Paris. Some of these were subsequently published, and the manuscripts are now found in various libraries. The works of Du Cange published after his death are: an edition of the Byzantine historian, Nicephorus Gregoras (Paris, 1702); *De imperatorum Constantinopolitanorum seu inferioris aevi vel imperii uti vocant numismatibus dissertatio* (Rome, 1755); *Histoire de l'état de la ville d'Amiens et de ses comtes* (Amiens, 1840); and a valuable work *Des principautés d'outre-mer*, published by E.G. Rey as *Les Familles d'outre-mer* (Paris, 1869).

See H. Hardouin, *Essai sur la vie et sur les ouvrages de Ducange* (Amiens, 1849); and L.J. Feugère, in the *Journal de l'instruction publique* (Paris, 1852).

DUCANGE, VICTOR HENRI JOSEPH BRAHAIN (1783-1833), French novelist and dramatist, was born on the 24th of November 1783 at the Hague, where his father was secretary to the French embassy. Dismissed from the civil service at the Restoration, Victor Ducange became one of the favourite authors of the liberal party, and owed some part of his popularity to the fact that he was fined and imprisoned more than once for his outspokenness. He was six months in prison for an article in his journal *Le Diable rose, ou le petit courrier de Lucifer* (1822); for *Valentine* (1821), in which the royalist excesses in the south of France were pilloried, he was again imprisoned; and after the publication of *Hélène ou l'amour et la guerre* (1823), he took refuge for some time in Belgium. Ducange wrote numerous plays and melodramas, among which the most successful were *Marco Loricot, ou le petit Chouan de 1830* (1836), and *Trente ans, ou la vie d'un joueur* (1827), in which Fréderick Lemaître found one of his best parts. Many of his books were prohibited, ostensibly for their coarseness, but perhaps rather for their political tendencies. He died in Paris on the 15th of October 1833.

DUCAS, Dukas or Doukas, the name of a Byzantine family which supplied several rulers to the Eastern Empire. The family first came into prominence during the 9th century, but was ruined when Constantine Ducas, a son of the general Andronicus Ducas, lost his life in his effort to obtain the imperial crown in 913. Towards the end of the 10th century there appeared another family of Ducas, which was perhaps connected with the earlier family through the female line and was destined to attain to greater fortune. A member of this family became emperor as Constantine X. in 1059, and Constantine's son Michael VII. ruled, nominally in conjunction with his younger brothers, Andronicus and Constantine, from 1071 to 1078. Michael left a son, Constantine, and, says Gibbon, "a daughter of the house of Ducas illustrated the blood, and confirmed the succession, of the Comnenian dynasty." The family was also allied by marriage with other great Byzantine houses, and after losing the imperial dignity its members continued to take an active part in public affairs. In 1204 Alexius Ducas, called Mourzoufle, deposed the emperor Isaac Angelus and his son Alexius, and vainly tried to defend Constantinople against the attacks of the Latin crusaders. Nearly a century and a half later one Michael Ducas took a leading part in the civil war between the emperors John V. Palaeologus and John VI. Cantacuzenus, and Michael's grandson was the historian Ducas (see below). Many of the petty sovereigns who arose after the destruction of the Eastern Empire sought to gain prestige by adding the famous name of Ducas to their own.

DUCAS (15th cent.), Byzantine historian, flourished under Constantine XIII. (XI.) Dragases, the last emperor of the East, about 1450. The dates of his birth and death are unknown. He was the grandson of Michael Ducas (see above). After the fall of Constantinople, he was employed in various diplomatic missions by Dorino and Domenico Gateluzzi, princes of Lesbos, where he had taken refuge. He was successful in securing a semi-independence for Lesbos until 1462, when it was taken and annexed to Turkey by Sultan Mahommed II. It is known that Ducas survived this event, but there is no record of his subsequent life. He was the author of a history of the period 1341-1462; his work thus continues that of Gregoras and Cantacuzene, and supplements Phrantzes and Chalcondyles. There is a preliminary chapter of chronology from Adam to John Palaeologus I. Although barbarous in style, the history of Ducas is both judicious and trustworthy, and it is the most valuable source for the closing years of the Greek empire. The account of the capture of Constantinople is of special importance. Ducas was a strong supporter of the union of the Greek and Latin churches, and is very bitter against those who rejected even the idea of appealing to the West for assistance against the Turks.

The history, preserved (without a title) in a single Paris MS., was first edited by I. Bullialdus (Bulliaud) (Paris, 1649); later editions are in the Bonn *Corpus scriptorum Hist. Byz.*, by I. Bekker (1834) and Migne, *Patrologia Graeca*, clvii. The Bonn edition contains a 15th century Italian translation by an unknown author, found by Leopold Ranke in one of the libraries of Venice, and sent by him to Bekker.

DUCASSE, PIERRE EMMANUEL ALBERT, Baron (1813-1893), French historian, was born at Bourges on the 16th of November 1813. In 1849 he became aide-de-camp to Prince Jerome Bonaparte, ex-king of Westphalia, then governor of the Invalides, on whose commission he wrote *Mémoires pour servir à l'histoire de la campagne de 1812 en Russie* (1852). Subsequently he published *Mémoires du roi Joseph* (1853-1855), and, as a sequel, *Histoire des négociations diplomatiques relatives aux traités de Morfontaine, de Lunéville et d'Amiens*, together with the unpublished correspondence of the emperor Napoleon I. with Cardinal Fesch (1855-1856). From papers in the possession of the imperial family he compiled *Mémoires du prince Eugène* (1858-1860) and *Réfutation des mémoires du duc de Raguse* (1857), part of which was inserted by authority at the end of volume ix. of the *Mémoires*. He was attaché to Jerome's son, Prince Napoleon, during the Crimean War, and wrote a *Précis historique des opérations militaires en Orient, de mars 1854 à octobre 1855* (1857), which was completed many years later by a volume entitled *La Crimée et Sébastopol*

de 1853 à 1856, documents intimes et inédits, followed by the complete list of the French officers killed or wounded in that war (1892). He was also employed by Prince Napoleon on the *Correspondance* of Napoleon I., and afterwards published certain letters, purposely omitted there, in the *Revue historique*. These documents, subsequently collected in *Les Rois frères de Napoléon* (1883), as well as the *Journal de la reine Catherine de Westphalie* (1893), were edited with little care and are not entirely trustworthy, but their publication threw much light on Napoleon I. and his entourage. His *Souvenirs d'un officier du 2e Zouaves*, and *Les Dessous du coup d'état* (1891), contain many piquant anecdotes, but at times degenerate into mere tittle-tattle. Ducasse was the author of some slight novels, and from the practice of this form of literature he acquired that levity which appears even in his most serious historical publications.

DUCAT, the name of a coin, generally of gold, and of varying value, formerly in use in many European countries. It was first struck by Roger II. of Sicily as duke of Apulia, and bore an inscription "*Sit tibi, Christe, datus, quem tu regis, iste ducatus*" (Lord, thou rulest this duchy, to thee be it dedicated); hence, it is said, the name. Between 1280 and 1284 Venice also struck a gold coin, known first as the ducat, afterwards as the zecchino or sequin, the ducat becoming merely a money of account. The ducat was also current in Holland, Austria, the Netherlands, Spain and Denmark (see NUMISMATICS). A gold coin termed a ducat was current in Hanover during the reigns of George I. and George III. A pattern gold coin was also struck by the English mint in 1887 for a proposed decimal coinage. On the reverse was the inscription "one ducat" within an oak wreath; above "one hundred pence," and below the date between two small roses. There is a gold coin termed a ducat in the Austria-Hungary currency, of the value of nine shillings and fourpence.

DU CHAILLU, PAUL BELLONI (1835-1903), traveller and anthropologist, was born either at Paris or at New Orleans (accounts conflict) on the 31st of July 1835. In his youth he accompanied his father, an African trader in the employment of a Parisian firm, to the west coast of Africa. Here, at a station on the Gabun, the boy received some education from missionaries, and acquired an interest in and knowledge of the country, its natural history, and its natives, which guided him to his subsequent career. In 1852 he exhibited this knowledge in the New York press, and was sent in 1855 by the Academy of Natural Sciences at Philadelphia on an African expedition. From 1855 to 1859 he regularly explored the regions of West Africa in the neighbourhood of the equator, gaining considerable knowledge of the delta of the Ogowé river and the estuary of the Gabun. During his travels he saw numbers of the great anthropoid apes called the gorilla (possibly the great ape described by Carthaginian navigators), then known to scientists only by a few skeletons. A subsequent expedition, from 1863 to 1865, enabled him to confirm the accounts given by the ancients of a pygmy people inhabiting the African forests. Narratives of both expeditions were published, in 1861 and 1867 respectively, under the titles *Explorations and Adventures in Equatorial Africa, with Accounts of the Manners and Customs of the People, and of the Chace of the Gorilla, Crocodile, and other Animals*; and *A Journey to Ashango-land, and further penetration into Equatorial Africa*. The first work excited much controversy on the score of its veracity, but subsequent investigation proved the correctness of du Chaillu's statements as to the facts of natural history; though possibly some of the adventures he described as happening to himself were reproductions of the hunting stories of natives (see *Proc. Zool. Soc.* vol. i., 1905, p. 66). The map accompanying *Ashango-land* was of unique value, but the explorer's photographs and collections were lost when he was forced to flee from the hostility of the natives. After some years' residence in America, during which he wrote several books for the young founded upon his African adventures, du Chaillu turned his attention to northern Europe, and published in 1881 *The Land of the Midnight Sun*, in 1889 *The Viking Age*, and in 1900 *The Land of the Long Night*. He died at St Petersburg on the 29th of April 1903.

DUCHENNE, GUILLAUME BENJAMIN AMAND (1806-1875), French physician, was born on the 17th of September 1806 at Boulogne, the son of a sea-captain. He was educated at Douai, and then studied medicine in Paris until the year 1831, when he returned to his native town to practise his profession. Two years later he first tried the effect of electro-puncture of the muscles on a patient under his care, and from this time on devoted himself more and more to the medical applications of electricity, thereby laying the foundation of the modern science of electro-therapeutics. In 1842 he removed to Paris for the sake of its wider clinical opportunities, and there he worked until his death over thirty years later. His greatest work, *L'Électrisation localisée* (1855), passed through three editions during his lifetime, though by many his *Physiologie des mouvements* (1867) is considered his masterpiece. He published over fifty volumes containing his researches on muscular and nervous diseases, and on the applications of electricity both for diagnostic purposes and for treatment. His name is especially connected with the first description of locomotor ataxy, progressive muscular atrophy, pseudo-hypertrophic paralysis, glosso-labio laryngeal paralysis and other nervous troubles. He died in Paris on the 17th of September 1875.

For a detailed life see *Archives générales de médicine* (December 1875), and for a complete list of his works the 3rd edition of *L'Électrisation localisée* (1872).

DU CHESNE [Latinized DUCHENIUS, QUERNEUS, or QUERCETANUS], **ANDRÉ** (1584-1640), French geographer and historian, generally styled the father of French history, was born at Ile-Bouchard, in the province of Touraine, in May 1584. He was educated at Loudun and afterwards at Paris. From his earliest years he devoted himself to historical and geographical research, and his first work, *Egregiarum seu selectarum lectionum et antiquitatum liber*, published in his eighteenth year, displayed great erudition. He enjoyed the patronage of Cardinal Richelieu, a native of the same district with himself, through whose influence he was appointed historiographer and geographer to the king. He died in 1640, in consequence of having been run over by a carriage when on his way from Paris to his country house at Verrière. Du Chesne's works were very numerous and varied, and in addition to what he published, he left behind him more than 100 folio volumes of manuscript extracts now preserved in the Bibliothèque Nationale (L. Delisle, *Le Cabinet des manuscrits de la bibliothèque impériale*, t. L, 333-334). Several of his larger works were continued by his only son François du Chesne (1616-1693), who succeeded him in the office of historiographer to the king. The principal works of André du Chesne are—*Les Antiquités et recherches de la grandeur et majesté des rois de France* (Paris, 1609), *Les Antiquités et recherches des villes, châteaux, &c., de toute la France* (Paris, 1609), *Histoire d'Angleterre, d'Écosse, et d'Irelande* (Paris, 1614), *Histoire des Papes jusqu'à Paul V* (Paris, 1619), *Histoire des rois, ducs, et comtes de Bourgogne* (1619-1628, 2 vols. fol.), *Historiae Normanorum scriptores antiqui* (1619, fol., now the only source for some of the texts), and his *Historiae Francorum scriptores* (5 vols. fol., 1636-1649). This last was intended to comprise 24 volumes, and to contain all the narrative sources for French history in the middle ages; only two volumes were published by the author, his son François published three more, and the work remained unfinished. Besides these du Chesne published a great number of genealogical histories of illustrious families, of which the best is that of the house of Montmorency. His *Histoire des cardinaux français* (2 vols. fol. 1660-1666) and *Histoire des chanceliers et gardes des sceaux de France* (1630) were published by his son François. André also published a translation of the *Satires* of Juvenal, and editions of the works of Alcuin, Abelard, Alain Chartier and Étienne Pasquier.

DUCHESNE, LOUIS MARIE OLIVIER (1843-), French scholar and ecclesiastic, was

born at Saint Servan in Brittany on the 13th of September 1843. Two scientific missions—to Mount Athos in 1874 and to Asia Minor in 1876—appeared at first to incline him towards the study of the ancient history of the Christian churches of the East. Afterwards, however, it was the Western church which absorbed almost his whole attention. In 1877 he received the degree of *docteur ès lettres* with two remarkable theses, a dissertation *De Macario magnete*, and an *Étude sur le Liber pontificalis*, in which he explained with unerring critical acumen the origin of that celebrated chronicle, determined the different editions and their interrelation, and stated precisely the value of his evidence. Immediately afterwards he was appointed professor at the Catholic Institute in Paris, and for eight years presented the example and model, then rare in France, of a priest teaching church history according to the rules of scientific criticism. His course, bold even to the point of rashness in the eyes of the traditionalist exegetists, was at length suspended. In November 1885 he was appointed lecturer at the École Pratique des Hautes Études. In 1886 he published volume i. of his learned edition of the *Liber pontificalis* (completed in 1892 by volume ii.), in which he resumed and completed the results he had attained in his French thesis. In 1888 he was elected member of the Académie des Inscriptions et Belles-Lettres, and was afterwards appointed director of the French school of archaeology at Rome. Much light is thrown upon the Christian origins, especially those of France, by his *Origines du culte chrétien, étude sur la liturgie latine avant Charlemagne* (1889; Eng. trans. by M.L. McClure, *Christian Worship: its Origin and Evolution*, London, 1902, 2nd ed. 1904); *Mémoire sur l'origine des diocèses épiscopaux dans l'ancienne Gaule* (1890), the preliminary sketch of a more detailed work, *Fastes épiscopaux dans l'ancienne Gaule* (vol. i. *Les provinces du sud-est*, 1894, and vol. ii. *L'Aquitaine et les Lyonnaises*, 1899); and *Catalogues épiscopaux de la province de Tours* (1898). When a proposal was set on foot to bring about a reconciliation between the Roman Church and the Christian Churches of the East, the Abbé Duchesne endeavoured to show that the union of those churches was possible under the Roman supremacy, because unity did not necessarily entail uniformity. His *Autonomies ecclésiastiques; églises séparées* (1897), in which he speaks of the origin of the Anglican Church, but treats especially of the origin of the Greek Churches of the East, was received with scant favour in certain narrow circles of the pontifical court. In 1906 he began to publish, under the title of *Histoire ancienne de l'église*, a course of lectures which he had already delivered upon the early ages of the Church, and of which a few manuscript copies were circulated. The second volume appeared in 1908. In these lectures Duchesne touches cleverly upon the most delicate problems, and, without any elaborate display of erudition, presents conclusions of which account must be taken. His incisive style, his fearless and often ruthless criticism, and his wide and penetrating erudition, make him a redoubtable adversary in the field of polemic. The *Bulletin critique*, founded by him, for which he wrote numerous articles, has contributed powerfully to spread the principles of the historical method among the French clergy.

DUCIS, JEAN FRANÇOIS (1733-1816), French dramatist and adapter of Shakespeare, was born at Versailles on the 22nd of August 1733. His father, originally from Savoy, was a linen-draper at Versailles; and all through life he retained the simple tastes and straightforward independence fostered by his bourgeois education. In 1768 he produced his first tragedy, *Amélise*. The failure of this first attempt was fully compensated by the success of his *Hamlet* (1769), and *Roméo et Juliette* (1772). *Œdipe chez Admète*, imitated partly from Euripides and partly from Sophocles, appeared in 1778, and secured him in the following year the chair in the Academy left vacant by the death of Voltaire. Equally successful was *Le Roi Lear* in 1783. *Macbeth* in 1783 did not take so well, and *Jean sans peur* in 1791 was almost a failure; but *Othello* in 1792, supported by the acting of Talma, obtained immense applause. Its vivid picturing of desert life secured for *Abufas, ou la famille arabe* (1795), an original drama, a flattering reception. On the failure of a similar piece, *Phédor et Vladimir ou la famille de Sibérie* (1801), Ducis ceased to write for the stage; and the rest of his life was spent in quiet retirement at Versailles. He had been named a member of the Council of the Ancients in 1798, but he never discharged the functions of the office; and when Napoleon offered him a post of honour under the empire, he refused. Amiable, religious and bucolic, he had little sympathy with the fierce, sceptical and tragic times in which his lot was cast. "Alas!" he said in the midst of the Revolution, "tragedy is abroad in the streets; if I step outside of my door, I have blood to my very ankles. I have too often seen Atreus in clogs, to venture to bring an Atreus on the stage." Though actuated by honest

admiration of the great English dramatist, Ducis is not Shakespearian. His ignorance of the English language left him at the mercy of the translations of Pierre Letourneur (1736-1788) and of Pierre de la Place (1707-1793); and even this modified Shakespeare had still to undergo a process of purification and correction before he could be presented to the fastidious criticism of French taste. That such was the case was not, however, the fault of Ducis; and he did good service in modifying the judgment of his fellow countrymen. He did not pretend to reproduce, but to excerpt and refashion; and consequently the French play sometimes differs from its English namesake in everything almost but the name. The plot is different, the characters are different, the *motif* different, and the scenic arrangement different. To *Othello*, for instance, he wrote two endings. In one of them Othello was enlightened in time and Desdemona escaped her tragic fate. *Le Banquet de l'amitié*, a poem in four cantos (1771), *Au roi de Sardaigne* (1775), *Discours de réception à l'académie française* (1779), *Épître à l'amitié* (1786), and a *Recueil de poésies* (1809), complete the list of Ducis's publications.

An edition of his works in three volumes appeared in 1813; *Œuvres posthumes* were edited by Campenon in 1826; and *Hamlet*, *Œdipe chez Admète*, *Macbeth* and *Abufar* are reprinted in vol. ii. of Didot's *Chefs-d'œuvre tragiques*. See Onésime Leroy, *Étude sur la personne et les écrits de Ducis* (1832), based on Ducis's own memoirs preserved in the library at Versailles; Sainte-Beuve, *Causeries du lundi*, t. vi., and *Nouveaux lundis*, t. iv.; Villemain, *Tableau de la litt. au XVIII^e siècle*.

DUCK. (1) (From the verb "to duck," to dive, put the head under water, in reference to the bird's action, cf. Dutch *duiker*, Ger. *Taucher*, diving-bird, *duiken*, *tauchen*, to dip, dive, Dan. *dukand*, duck, and Ger. *Ente*, duck; various familiar and slang usages are based on analogy with the bird's action), the general English name for a large number of birds forming the greater part of the family *Anatidae* of modern ornithologists. Technically the term duck is restricted to the female, the male being called drake (cognate with the termination of Ger. *Enterich*), and in one species mallard (Fr. *Malart*).

The *Anatidae* may be at once divided into six more or less well marked subfamilies—(1) the *Cygninae* or swans, (2) the *Anserinae* or geese—which are each very distinct, (3) the *Anatinae* or freshwater-ducks, (4) those commonly called *Fuligulinae* or sea-ducks, (5) the *Erismaturinae* or spiny-tailed ducks, and (6) the *Merginae* or mergansers.

The *Anatinae* are the typical group, and it is these only that are considered here. We start with the *Anas boschas* of Linnaeus, the common wild duck, which from every point of view is by far the most important species, as it is the most plentiful, the most widely distributed, and the best known—being indeed the origin of all the British domestic breeds. It inhabits the greater part of the northern hemisphere, reaching in winter so far as the Isthmus of Panama in the New World, and in the Old being abundant at the same season in Egypt and north-western India, while in summer it ranges throughout the Fur-Countries, Greenland, Iceland, Lapland and Siberia. Most of those which fill British markets are no doubt bred in more northern climes, but a considerable proportion of them are yet produced in the British Islands, though not in anything like the numbers that used to be supplied before the draining of the great fen-country and other marshy places. The wild duck pairs very early in the year—the period being somewhat delayed by hard weather, and the ceremonies of courtship, which require some little time. Soon after these are performed, the respective couples separate in search of suitable nesting-places, which are generally found, by those that remain with us, about the middle of March. The spot chosen is sometimes near a river or pond, but often very far removed from water, and it may be under a furze-bush, on a dry heath, at the bottom of a thick hedge-row, or even in any convenient hole in a tree. A little dry grass is generally collected, and on it the eggs, from 9 to 11 in number, are laid. So soon as incubation commences the mother begins to divest herself of the down which grows thickly beneath her breast-feathers, and adds it to the nest-furniture, so that the eggs are deeply imbedded in this heat-retaining substance—a portion of which she is always careful to pull, as a coverlet, over her treasures when she quits them for food. She is seldom absent from the nest, however, but once, or at most twice, a day, and then she dares not leave it until her mate, after several circling flights of observation, has assured her she may do so unobserved. Joining him the pair betake themselves to some quiet spot where she may bathe and otherwise refresh herself. Then they return to the nest, and after cautiously

reconnoitring the neighbourhood, she loses no time in reseating herself on her eggs, while he, when she is settled, repairs again to the waters, and passes his day listlessly in the company of his brethren, who have the same duties, hopes and cares. Short and infrequent as are the absences of the duck when incubation begins, they become shorter and more infrequent towards its close, and for the last day or two of the 28 necessary to develop the young it is probable that she will not stir from the nest at all. When all the fertile eggs are hatched her next care is to get the brood safely to the water. This, when the distance is great, necessarily demands great caution, and so cunningly is it done that but few persons have encountered the mother and offspring as they make the dangerous journey.[1] If disturbed the young instantly hide as they best can, while the mother quacks loudly, feigns lameness, and flutters off to divert the attention of the intruder from her brood, who lie motionless at her warning notes. Once arrived at the water they are comparatively free from harm, though other perils present themselves from its inmates in the form of pike and other voracious fishes, which seize the ducklings as they disport in quest of insects on the surface or dive beneath it. Throughout the summer the duck continues her care unremittingly, until the young are full grown and feathered; but it is no part of the mallard's duty to look after his offspring, and indeed he speedily becomes incapable of helping them, for towards the end of May he begins to undergo his extraordinary additional moult, loses the power of flight, and does not regain his full plumage till autumn. About harvest-time the young are well able to shift for themselves, and then resort to the corn-fields at evening, where they fatten on the scattered grain. Towards the end of September or beginning of October both old and young unite in large flocks and betake themselves to the larger waters. If long-continued frost prevail, most of the ducks resort to the estuaries and tidal rivers, or even leave these islands almost entirely. Soon after Christmas the return-flight commences, and then begins anew the course of life already described.

For the farmyard varieties, descending from *Anas boschas*, see Poultry. The domestication of the duck is very ancient. Several distinct breeds have been established, of which the most esteemed from an economical point of view are those known as the Rouen and Aylesbury; but perhaps the most remarkable deviation from the normal form is the so-called penguin-duck, in which the bird assumes an upright attitude and its wings are much diminished in size. A remarkable breed also is that often named (though quite fancifully) the "Buenos-Ayres" duck, wherein the whole plumage is of a deep black, beautifully glossed or bronzed. But this saturation, so to speak, of colour only lasts in the individual for a few years, and as the birds grow older they become mottled with white, though as long as their reproductive power lasts they "breed true." The amount of variation in domestic ducks, however, is not comparable to that found among pigeons, no doubt from the absence of the competition which pigeon-fanciers have so long exercised. One of the most curious effects of domestication in the duck, however, is, that whereas the wild mallard is not only strictly monogamous, but, as Waterton believed, a most faithful husband, remaining paired for life, the civilized drake is notoriously polygamous.

Very nearly allied to the common wild duck are a considerable number of species found in various parts of the world in which there is little difference of plumage between the sexes—both being of a dusky hue—such as *Anas obscura*, the commonest river-duck of America, *A. superciliosa* of Australia, *A. poecilorhyncha* of India, *A. melleri* of Madagascar, *A. xanthorhyncha* of South Africa, and some others.

Among the other genera of *Anatinae*, we must content ourselves by saying that both in Europe and in North America there are the groups represented by the shoveller, garganey, gadwall, teal, pintail and widgeon—each of which, according to some systematists, is the type of a distinct genus. Then there is the group *Aix*, with its beautiful representatives the wood-duck (*A. sponsa*) in America and the mandarin-duck (*A. galericulata*) in Eastern Asia. Besides there are the sheldrakes (*Tadorna*), confined to the Old World and remarkably developed in the Australian Region; the musk-duck (*Cairina*) of South America, which is often domesticated and in that condition will produce hybrids with the common duck; and finally the tree-ducks (*Dendrocygna*), which are almost limited to the tropics. (For duck-shooting, see Shooting.)

(A. N.)

2 (Probably derived from the Dutch *doeck*, a coarse linen material, cf. Ger. *Tuch*, cloth), a plain fabric made originally from tow yarns. The cloth is lighter than canvas or sailcloth, and differs from these in that it is almost invariably single in both warp and weft. The term is also used to indicate the colour obtained at a certain stage in the bleaching of flax yarns; it is a colour between half-white and cream, and this fact may have something to do with the name. Most of the flax ducks (tow yarns) appear in this colour, although quantities are

bleached or dyed. Some of the ducks are made from long flax, dyed black, and used for kit-bags, while the dyed tow ducks may be used for inferior purposes. The fabric, in its various qualities and colours, is used for an enormous variety of purposes, including tents, wagon and motor hoods, light sails, clothing, workmen's overalls, bicycle tubes, mail and other bags and pocketings. *Russian duck* is a fine white linen canvas.

1 When ducks breed in trees, the precise way in which the young get to the ground is still a matter of uncertainty. The mother is supposed to convey them in her bill, and most likely does so, but they are often simply allowed to fall.

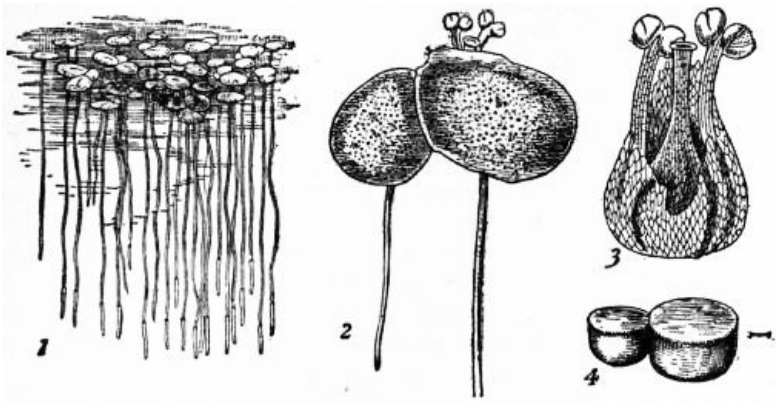
DUCKING and **CUCKING STOOLS,** chairs used for the punishment of scolds, witches and prostitutes in bygone days. The two have been generally confused, but are quite distinct. The earlier, the Cucking-stool[1] or Stool of Repentance, is of very ancient date, and was used by the Saxons, who called it the *Scealding* or *Scolding Stool*. It is mentioned in Domesday Book as in use at Chester, being called *cathedra stercoris*, a name which seems to confirm the first of the derivations suggested in the footnote below. Seated on this stool the woman, her head and feet bare, was publicly exposed at her door or paraded through the streets amidst the jeers of the crowd. The Cucking-stool was used for both sexes, and was specially the punishment for dishonest brewers and bakers. Its use in the case of scolding women declined on the introduction in the middle of the 16th century of the Scold's Bridle (see BRANKS), and it disappears on the introduction a little later of the Ducking-stool. The earliest record of the use of this latter is towards the beginning of the 17th century. It was a strongly made wooden armchair (the surviving specimens are of oak) in which the culprit was seated, an iron band being placed around her so that she should not fall out during her immersion. Usually the chair was fastened to a long wooden beam fixed as a seesaw on the edge of a pond or river. Sometimes, however, the Ducking-stool was not a fixture but was mounted on a pair of wooden wheels so that it could be wheeled through the streets, and at the river-edge was hung by a chain from the end of a beam. In sentencing a woman the magistrates ordered the number of duckings she should have. Yet another type of Ducking-stool was called a tumbrel. It was a chair on two wheels with two long shafts fixed to the axles. This was pushed into the pond and then the shafts released, thus tipping the chair up backwards. Sometimes the punishment proved fatal, the unfortunate woman dying of shock. Ducking-stools were used in England as late as the beginning of the 19th century. The last recorded cases are those of a Mrs Ganble at Plymouth (1808); of Jenny Pipes, "a notorious scold" (1809), and Sarah Leeke (1817), both of Leominster. In the last case the water in the pond was so low that the victim was merely wheeled round the town in the chair.

See W. Andrews, *Old Time Punishments* (Hull, 1890); A.M. Earle, *Curious Punishments of Bygone Days* (Chicago, 1896); W.C. Hazlitt, *Faiths and Folklore* (London, 1905); Llewellynn Jewitt in *The Reliquary*, vols. i. and ii. (1860-1862); *Gentleman's Magazine* for 1732.

1 Probably from "cuck," to void excrement; but variously connected with Fr. *coquin*, rascal.

DUCKWEED, the common botanical name for species of *Lemna* which form a green coating on fresh-water ponds and ditches. The plants are of extremely simple structure and are the smallest and least differentiated of flowering plants. They consist of a so-called "frond"—a flattened green more or less oval structure which emits branches similar to itself from lateral pockets at or near the base. From the under surface a root with a well-developed sheath grows downwards into the water. The flowers, which are rarely found in Britain, are developed in one of the lateral pockets. The inflorescence is a very simple one, consisting of one or two male flowers each comprising a single stamen, and a female flower comprising a flask-shaped pistil. The order Lemnaceae to which they belong is regarded as representing a very reduced type nearly allied to the Aroids. It is represented in Britain by four species of *Lemna*, and a still smaller and simpler plant, *Wolffia*, in which the fronds are

only one-twentieth of an inch long and have no roots.



1, *Lemna minor* (Lesser Duckweed) nat. size.
2, Plant in flower.
3, Inflorescence containing two male flowers each of one stamen, and a female flower, the whole enclosed in a sheath.
4, *Wolffia arrhiza*.

(2, 3, 4 enlarged.)

DUCKWORTH, SIR JOHN THOMAS (1748-1817), British admiral, was born at Leatherhead, in Surrey, on the 28th of February 1748. He entered the navy in 1759, and obtained his commission as lieutenant in June 1770, when he was appointed to the “Princess Royal,” the flagship of Admiral Byron, in which he sailed to the West Indies. While serving on board this vessel he took part in the engagement with the French fleet under Count D’Estaing. In July 1779 he became commander, and was appointed to the “Rover” sloop; in June of the following year he attained the rank of post-captain. Soon afterwards he returned to England in charge of a convoy. The outbreak of the war with France gave him his first opportunity of obtaining marked distinction. Appointed first to the “Orion” and then to the “Queen” in the Channel Fleet, under the command of Lord Howe, he took part in the three days’ naval engagement with the Brest fleet, which terminated in a glorious victory on the 1st of June 1794. For his conduct on this occasion he received a gold medal and the thanks of parliament. He next proceeded to the West Indies, where he was stationed for some time at St Domingo. In 1798 he commanded the “Leviathan” in the Mediterranean, and had charge of the naval detachment which, in conjunction with a military force, captured Minorca. Early in 1799 he was raised to the rank of rear-admiral, and sent to the West Indies to succeed Lord Hugh Seymour. During the voyage out he captured a valuable Spanish convoy of eleven merchantmen. In March 1801 he was the naval commander of the combined force which reduced the islands of St Bartholomew and St Martin, a service for which he was rewarded with the order of the Bath and a pension of £1000 a year. Promoted to be vice-admiral of the blue, he was appointed in 1804 to the Jamaica station. Two years later, while cruising off Cadiz with Lord Collingwood, he was detached with his squadron to pursue a French fleet that had been sent to the relief of St Domingo. He came up with the enemy on the 6th February 1806, and, after two hours’ fighting, inflicted a signal defeat upon them, capturing three of their five vessels and stranding the other two. For this, the most distinguished service of his life, he received the thanks of the Jamaica assembly, with a sword of the value of a thousand guineas, the thanks of the English parliament, and the freedom of the city of London. In 1807 he was again sent to the Mediterranean to watch the movements of the Turks. In command of the “Royal George” he forced the passage of the Dardanelles, but sustained considerable loss in effecting his return, the Turks having strengthened their position while he was being kept in play by their diplomatists and Napoleon’s ambassador General Sebastiani. He held the command of the Newfoundland fleet for four years from 1810, and at the close of that period he was made a baronet. In 1815 he was appointed to the chief command at Plymouth, which he held until his death on the 14th of April 1817. Sir John Duckworth sat in parliament for some time as member for New Romney.

See *Naval Chronicle*, xviii.; Ralfe’s *Naval Biography*, ii.

DUCLAUX, AGNES MARY F. (1856-), English poet and critic, who first became known in England under her maiden name of Mary F. Robinson, was born at Leamington on the 27th of February 1856. She was educated at University College, London, devoting herself chiefly to the study of Greek literature. Her first volume of poetry, *A Handful of Honeysuckle*, was published in 1879. Her next work was a translation from Euripides, *The Crowned Hippolytus* (1881). Monographs on Emily Brontë (1883) and on Marguerite of Angoulême (1886) followed; and *The New Arcadia and other Poems* (1884) and *An Italian Garden* (1886) contain some of her best verses. Her poems attracted the attention of the orientalist, James Darmesteter (*q.v.*), then in Peshawur, and he made an admirable translation of them in French. The acquaintance led to their marriage in 1888, and from that time a large part of her work was done in French. Madame Darmesteter translated her husband's *Études anglaises* into English (1896). Her most considerable prose work is the *Life of Ernest Renan* (1897). She also wrote the *End of the Middle Ages* (1888); the volume on *Froissart* (1894) in the *Grands écrivains français*; essays on the Brontës, the Brownings and others, entitled *Grands écrivains d'Outre-Manche* (1901). After Darmesteter's death, she married in 1901 Émile Duclaux, the associate of Pasteur, and director of the Pasteur institute. He died in 1904. She published *Retrospect and other Poems* in 1893, and in 1904 appeared The *Return to Nature, Songs and Symbols*. The qualities of Mary Robinson's work, its conciseness and purity of expression, were only gradually recognized. Her *Collected Poems, Lyrical and Narrative* were published in 1902.

DUCLOS, CHARLES PINOT (1704-1772), French author, was born at Dinan, in Brittany, in 1704. At an early age he was sent to study at Paris. After some time spent in dissipation he began to cultivate the society of the wits of the time, and became a member of the club or association of young men who published their joint efforts in light literature under the titles of *Recueil de ces messieurs*, *Étrennes de la St-Jean*, *Œufs de Pâques*, &c. His romance of *Acajou and Zirphile*, composed to suit a series of plates which had been engraved for another work, was one of the fruits of this association, and was produced in consequence of a sort of wager amongst its members. Duclos had previously written two other romances, which were more favourably received—*The Baroness de Luz* (1741), and the *Confessions of the Count de**** (1747). His first serious publication was the *History of Louis XI.*, which is dry and epigrammatical in style, but displays considerable powers of research and impartiality. The reputation of Duclos as an author was confirmed by the publication of his *Considérations sur les mœurs de ce siècle* (1751), a work justly praised by Laharpe, as containing a great deal of sound and ingenious reflection. It was translated into English and German. The *Mémoires pour servir à l'histoire du dix-huitième siècle*, intended by the author as a sort of sequel to the preceding work, are much inferior in style and matter, and are, in reality, little better than a kind of romance. In consequence of his *History of Louis XI.*, he was appointed historiographer of France, when that place became vacant on Voltaire's retirement to Prussia. His *Secret Memoirs of the Reigns of Louis XIV. and Louis XV.* (for which he was able to utilize the *Mémoires* of Saint Simon, suppressed in 1755), were not published until after the Revolution.

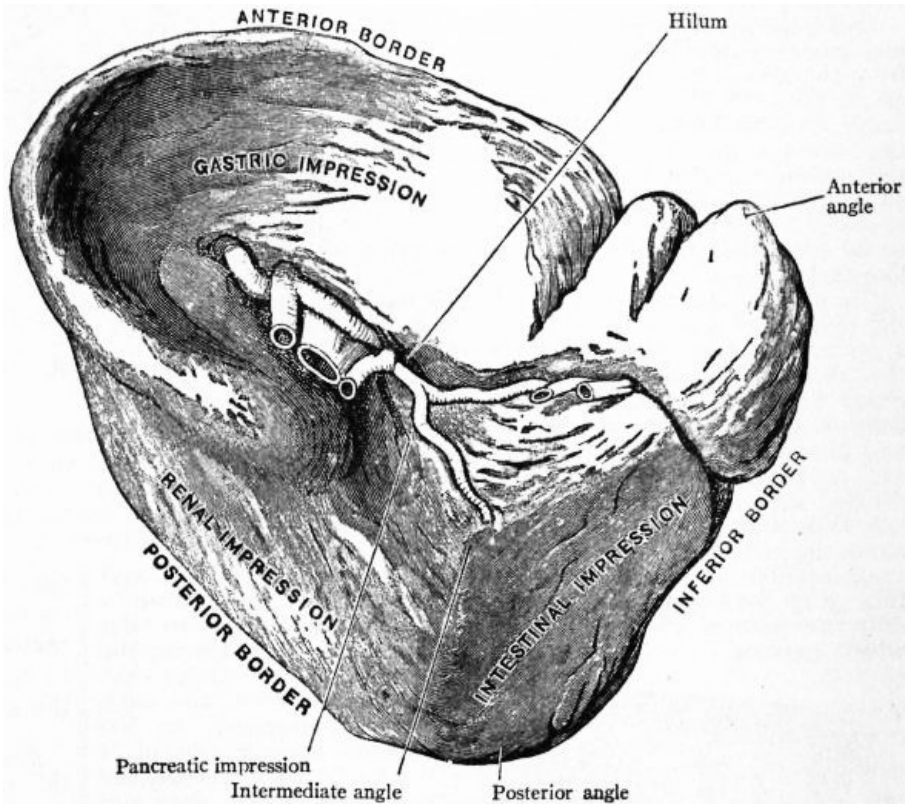
Duclos became a member of the Academy of Inscriptions in 1739, and of the French Academy in 1747, being appointed perpetual secretary in 1747. Both academies were indebted to him not only for many valuable contributions, but also for several useful regulations and improvements. As a member of the Academy of Inscriptions, he composed several memoirs on trial by combat, on the origin and revolutions of the Celtic and French languages, and on scenic representations and the ancient drama. As a member of the French Academy, he assisted in compiling the new edition of the *Dictionary*, which was published in 1762; and he made some just and philosophical remarks on the *Port Royal Grammar*. On several occasions he distinguished himself by vindicating the honour and prerogatives of the societies to which he belonged, and the dignity of the literary character in general. He used to say of himself, "I shall leave behind me a name dear to literary men." The citizens of Dinan, whose interests he always supported with zeal, appointed him mayor of their town in

1744, though he was resident at Paris, and in this capacity he took part in the assembly of the estates of Brittany. Upon the requisition of this body the king granted him letters of nobility. In 1763 he was advised to retire from France for some time, having rendered himself obnoxious to the government by the opinions he had expressed on the dispute between the duc d'Aiguillon and M. de la Chalotais, the friend and countryman of Duclos. Accordingly he set out first for England (1763), then for Italy (1766); and on his return he wrote his *Considerations on Italy*. He died at Paris on the 26th of March 1772. The character of Duclos was singular in its union of impulsiveness and prudence. Rousseau described him very laconically as a man *droit et adroit*. In his manners he displayed a sort of bluntness in society, which frequently rendered him disagreeable; and his caustic wit on many occasions created enemies. To those who knew him, however, he was a pleasant companion. A considerable number of his *bons mots* have been preserved by his biographers.

A complete edition of the works of Duclos, including an unfinished autobiography, was published by Auger (1821). See also Saint-Beuve, *Causeries du lundi*, t. ix.; René Kerviler, *La Bretagne et l'Académie française du XVIII^e siècle* (1889); L. Mandon, *De la valeur historique des mèmoires secrets de Duclos* (1872).

DUCOS, PIERRE ROGER (1754-1816), French politician and director, was born at Dax. He was an advocate when elected deputy to the Convention by the department of the Landes. He sat in the "Plain," *i.e.* in the party which had no opinion of its own, which always leaned to the stronger side. He voted for the death of Louis XVI., without appeal or delay, but played no noticeable part in the Convention. He was a member of the Council of the Five Hundred, over which he presided on the 18th of Fructidor in the year V. (see FRENCH REVOLUTION). At the end of his term he became a judge of the peace, but after the parliamentary *coup d'état* of the 30th of Prairial of the year VIII. he was named a member of the executive Directory, thanks to the influence of Barras, who counted on using him as a passive instrument. Ducos accepted the *coup d'état* of Bonaparte on the 18th of Brumaire, and was one of the three provisional consuls. He became vice-president of the senate. The Empire heaped favours upon him, but in 1814 he abandoned Napoleon, and voted for his deposition. He sought to gain the favour of the government of the Restoration, but in 1816 was exiled in virtue of the law against the regicides. He died in March 1816 at Ulm, from a carriage accident. In spite of his absolute lack of talent, he attained the highest of positions —an exceptional fact in the history of the French Revolution.

DUCTLESS GLANDS, in anatomy. A certain number of glands in the body, often of great physiological importance, have no *ducts* (Lat. *ductus*, from *ducere*, to lead, *i.e.* vessels, tubes or canals for conveying away fluid or other substance); and their products, known as internal secretions, are at once carried away by the veins or lymphatics which drain them. Among these structures are the *spleen*, the *adrenals*, the *thyroid gland*, the *parathyroids*, the *thymus* and the *carotid* and *coccygeal* bodies. In addition to these the lymphatic glands are described in the article on the lymphatic system (*q.v.*), and the pineal and pituitary bodies in the article on the brain (*q.v.*).



From D.J. Cunningham, Cunningham's *Text-book of Anatomy*.

Fig. 1.—The Spleen—Visceral Aspect.

The Spleen

The human *spleen* (Gr. σπλήν) is an oval, flattened gland, of a dull purple colour, and about 5 in. long by 3 broad, situated in the upper and back part of the left side of the abdominal cavity. If the right hand is passed round the left side of its owner's body, as far as it will reach, it approximately covers the spleen. The long axis of the organ is obliquely placed so that the upper pole is much nearer the vertebral column than the lower pole. For practical purposes the long axis of the left tenth rib corresponds with that of the spleen. There is an external or parietal surface and an internal or visceral, the latter of which is again subdivided; these surfaces are limited by ventral and dorsal borders. The external, parietal, or phrenic surface is convex to adapt it to the concavity of the diaphragm, against the posterior part of which it lies; external to the diaphragm is the pleural cavity, and more externally still, the ninth, tenth and eleventh ribs. The internal or visceral surface is divided by a prominent ridge into a gastric or anterior and a renal or posterior surface. Sometimes a triangular impression called the basal surface is formed at the lower part of the visceral surface by the left end of the transverse colon, though at other times no such impression is seen. It is probable that the exact shape of the spleen depends a good deal on the amount of distension of the surrounding hollow viscera at the time of death. (For details of the basal surface see D.J. Cunningham, *Journ. Anat. and Phys.* vol. xxix. p. 501.) The gastric surface is concave and adapts itself to the fundus of the stomach, while just in front of the ridge separating the gastric and renal surfaces is the hilum, where the vessels enter and leave the organ; in front of this the tail of the pancreas usually touches the spleen. The renal surface is as a rule smaller than the gastric and, like it, is concave; it is moulded on to the upper part of the outer border of the left kidney and just reaches the left adrenal body. The anterior or ventral border of the spleen has usually two or more notches in it, though these are often also seen on the dorsal border. The whole spleen is surrounded by peritoneum, which is reflected off on to the stomach as the gastro-splenic omentum, and on to the kidney as the lieno-renal ligament; occasionally the lesser sac reaches it near its connexion with the pancreas. Small accessory spleens are fairly often found in the neighbourhood of the spleen, though it is possible that some of these may be haemo-lymph glands (see Lymphatic System).

Microscopically the spleen has a fibro-elastic coat in which involuntary muscle is found (fig. 2). This coat sends multitudes of fine trabeculae into the interior of the organ, which subdivide it into numbers of minute compartments, in which the red, highly vascular, spleen pulp is contained. This pulp contains small spherical masses of adenoid tissue, forming the Malpighian corpuscles, situated on the terminal branches of the splenic blood-vessels, together with numerous cells, some of which are red blood corpuscles, others lymph

corpuscles, others contain pigment granules or fat, while others have in their interior numerous blood corpuscles. The arteries of the spleen in part end in capillaries from which the veins arise, but more frequently they open into lacunae or blood spaces, which give origin to the veins.

Embryology.—The spleen is developed in the dorsal mesogastrium (see Coelom and Serous Membranes) from the mesenchyme, or that portion of the mesoderm, the cells of which lie scattered in a matrix. Large lymphoid cells are early seen among those of the mesenchyme, but whether these migrate from the coelomic epithelium, or are originally mesenchymal is doubtful, though the former seems more probable. The network of the spleen seems certainly to be derived from cells of the mesenchyme which lose their nuclei.

Comparative Anatomy.—The spleen is regarded as the remains of a mass of lymphoid tissue which, in a generalized type of vertebrate, stretched all along the alimentary canal. It is absent as a distinct gland in the Acrania and Cyclostomata. In the fishes it is closely applied to the U-shaped stomach, and in some of the Elasmobranchs, *e.g.* the basking and porbeagle sharks (Selache and Lamna), it is divided into small lobules. In Protopterus among the Dipnoi it is enclosed within the walls of the stomach. In the Anura (frogs and toads) among the Amphibia it is a spherical mass close to the rectum, and this may be explained by regarding it as derived from a different part of the original mass, already mentioned, to that which persists in other vertebrates. In the Iguana among the reptiles the organ has many notches, and each one corresponds to the point of entrance of a vessel. In Mammals the notches, when they are present, so frequently correspond to the points of entrance of arteries at the hilum that the present writer believes that the former are determined by the latter in many cases (see F.G. Parsons on the Notches of the Spleen, *J. Anat. and Phys.* vol. 35, p. 416; also Charnock Bradley, *Proceedings of R. Soc. Edin.*, vol. 24, pt. 6, p. 521). The Monotremata and Marsupialia have curious Y-shaped spleens. As a rule flesh-eating animals have larger and more notched spleens than vegetable feeders, though among the Cetacea the spleen is relatively very small.

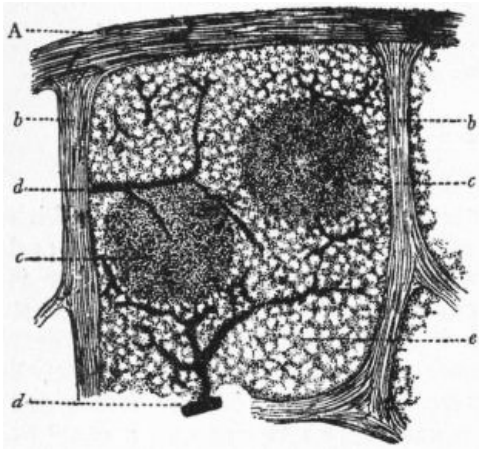
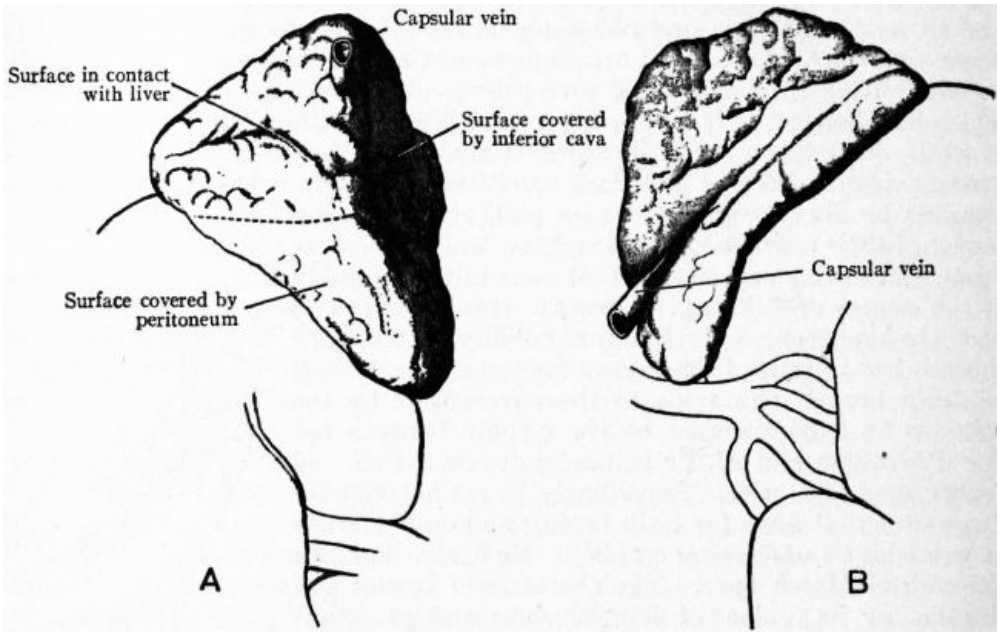


Fig. 2.—Section of the Spleen seen under a low power.

A, Fibrous capsule.
b, Trabeculae.
c, Malpighian corpuscles.
d, Blood-vessels.
e, Spleen pulp.

Adrenal Glands

The adrenal glands or suprarenal capsules are two conical bodies, flattened from before backward, resting on the upper poles of the kidneys close to the sides of the vertebral column; each has an anterior and posterior surface and a concave base which is in contact with the kidney. When viewed from in front the right gland is triangular and the left crescentic. On the anterior surface there is a transverse sulcus or hilum from which a large vein emerges. The arteries are less constant in their points of entry, and are derived from three sources, the phrenic, the abdominal aorta and the renal arteries. The glands are entirely retro-peritoneal, though the right one, even on its anterior surface, is very little covered by peritoneum. In a vertical transverse section each gland is seen to consist of two parts, cortical and medullary. The cortical substance is composed of bundles of cells, separated by a stroma, which have a different appearance in different parts. Most superficially is the zona glomerulosa, then the zona fascicularis, and most deeply the zona reticularis. These names convey a fair idea of the appearance of the bundles. To the naked eye the cortical part is yellow while the medullary is red. The medullary part consists of small islets of cells, which resemble columnar epithelium lying among venous sinuses; these cells are said to be in close connexion with the sympathetic nerve filaments from the great solar plexus.



From D.J. Cunningham, Cunningham's *Text-book of Anatomy*.

FIG. 3.—A, Anterior surface of right suprarenal capsule. B, Anterior surface of left suprarenal capsule. The upper and inner parts of each kidney are indicated in outline. On the right capsule the dotted line indicates the upper limit of the peritoneal covering.

Embryology.—The generally accepted opinion at present is that the cortical substance is derived from the coelomic epithelium covering the mesoderm of the upper (cephalic) portion of the Wolffian body, and corresponds to the nephrostomes of mesonephridial tubules (see URINARY SYSTEM), while the medullary part grows out from the sympathetic ganglia and so is probably ectodermal in origin. J. Janosik, however (*Archiv. f. mikrosk. Anat.* bd. xxii. 1883 and *Sitzungsber. d. Wiener Akad.*, 1885), thinks that the cortical part is derived from the germ epithelium covering the upper part of the genital ridge. C.S. Minot (*Human Embryology*, 1897) believes that the original cells which grow in from the sympathetic disappear later, and that the adult medullary cells are derived from the cortical.

In the early human embryo the adrenals are larger than the kidneys, and at birth they are proportionately much larger than in the adult. (For literature see. *Development of the Human Body*, J.P. McMurrich, London, 1906; and *Handbuch der Entwickelungslehre*, by O. Hertwig, Jena.)

Comparative Anatomy.—Adrenals are unknown in Amphioxus and the Dipnoi (mud fish). In the Cyclostomata (hags and lampreys) they are said by some to arise in connexion with the cephalic part of the pronephros, though other writers deny their presence at all (see W.E. Collinge and Swale Vincent, *Anat. Anz.* bd. xii., 1896). In the Elasmobranchs and Holocephali the medullary and cortical parts are apparently distinct, the former being represented by a series of organs situated close to the intercostal arteries, while the latter may be either median or paired, and, as they are placed between the kidneys, are often spoken of as interrenals. In the Amphibia the glands are sunk into the surface of the kidney. In reptiles and birds they are long lobulated bodies lying close to the testis or ovary and receiving an adrenal portal vein. In the lower mammals they are not as closely connected with the kidneys as they are in man, and their shape is usually oval or spherical.

THE THYROID GLAND

The thyroid body or gland is a deep red glandular mass consisting of two lobes which lie one on each side of the upper part of the trachea and lower part of the larynx; these are joined across the middle line by the isthmus which lies in front of the second and third rings of the trachea. Occasionally, from the top of the isthmus, a nearly but not quite median pyramidal lobe runs up toward the hyoid bone, while in other cases the isthmus may be absent. The gland is relatively larger in women and children than in the adult male. It is enclosed in a capsule of cervical fascia and is supplied by the superior and inferior thyroid arteries on each side, though occasionally a median thyroidea ima artery is present. On microscopical examination the gland shows a large number of closed tubular alveoli, lined by columnar epithelial cells, unsupported by a basement membrane, and filled with colloid or jelly-like material. These are supported by fibrous septa growing in from the true capsule, which is distinct from the capsule of cervical fascia. The lymphatic vessels are large and

numerous, and have been shown by E.C. Baber (*Phil. Trans.*, 1881) to contain the same colloid material as the alveoli. Accessory thyroids, close to the main gland, are often found.

Embryology.—The median part of the gland is developed from a tube which grows down in the middle line from the junction of the buccal and pharyngeal parts of the tongue (*q.v.*), between the first and second branchial arches. This tube is called the thyro-glossal duct and is entodermal in origin. The development of the hyoid bone obliterates the middle part of the duct, leaving its upper part as the foramen caecum of the tongue, while its lower part bifurcates, and so the asymmetrical arrangement of the pyramidal lobe is accounted for. A. Kanthack (*J. Anat. and Phys.* vol. xxv., 1891) has denied the existence of this duct, but on slender grounds. The lateral parts of the gland are developed from the entoderm of the fourth visceral clefts, and, joining the median part, lose their pharyngeal connexion. Nearly, but not quite, the whole of the lateral lobes probably belong to this part. (For literature and further details see Quain's *Anatomy*, London, 1892, and J.P. McMurrich's *Development of the Human Body*, London, 1906.)

Comparative Anatomy.—The endostyle or hypobranchial groove of Tunicata (sea squirts) and Acrania (Amphioxus) is regarded as the first appearance of the median thyroid; this is a median entodermal groove in the floor of the pharynx, secreting a glairy fluid in which food particles become entangled and so pass into the intestine. In the larval lamprey (Ammocoetes) among the Cyclostomata the connexion with the pharynx is present, but in the adult lamprey (Petromyzon), as in all adult vertebrates, this connexion is lost. In the Elasmobranchs the single median thyroid lies close to the mandibular symphysis, but in the bony fish (Teleostei) it is paired. In the mud fish (Dipnoi) there is also an indication of a division into two lobes. In the Amphibia the thyroid forms numerous vesicles close to the anterior end of the pericardium. In Reptilia it lies close to the trachea, and in the Chelonia and Crocodilia is paired. In birds it is also paired and lies near the origin of the carotid arteries. In Mammalia the lateral lobes make their first appearance. In the lower orders of this class the isthmus is often absent. (For further details and literature see R. Wiedersheim's *Vergleichende Anatomie der Wirbeltiere*, Jena, 1902, and also for literature, Quain's *Anatomy*, London, 1896.)

Parathyroid Glands

These little oval bodies, of considerable physiological importance, are two in number on each side. From their position they are spoken of as postero-superior and antero-inferior; the postero-superior are embedded in the thyroid at the level of the lower border of the cricoid cartilage, while the antero-inferior may be embedded in the lower edge of the lateral lobes of the thyroid or may be found a little distance below in relation to the inferior thyroid veins. They are often very difficult to find, but it is easiest to do so in a perfectly fresh, full-term foetus or young child. Microscopically they consist of solid masses of epithelioid cells with numerous blood-vessels between, while, embedded in their periphery, are often found masses of thymic tissue including the concentric corpuscles of Hassall. They have been regarded as undeveloped portions of thyroid tissue in an embryonic state, but the experiments of Gley (*Comptes rendus de la Soc. de Biol.* No. 11, 1895) and of W. Edmunds (*Proc. Physiol. Soc.—Journ. Phys.* vol. xviii., 1895) do not confirm this. They are developed from the entoderm of the third and fourth branchial grooves.

Parathyroids have been found in the orders of Primates, Cheiroptera, Carnivora, Ungulata and Rodentia among the Mammalia, and also in Birds. In the other classes of vertebrates little is known of them. The fullest and most recent account of these bodies is that of D.A. Welsh in Journ. *Anat. and Phys.* vol. 32, 1898, pp. 292 and 380.

The Thymus Gland

The thymus gland (Gr. θύμος, from a fancied resemblance to the corymbs of the Thyme) is a light pink gland, consisting of two unequal lobes, which lies in the superior and anterior mediastina of the thorax in front of the pericardium and great vessels; it also extends up into the root of the neck to within a short distance of the thyroid gland. It continues to grow until the second year of life, after which it remains stationary until puberty, when it usually degenerates rapidly. The writer has seen it perfectly well developed in a man between 40 and 50, though such cases are rare; probably, however, some patches of its tissue remain all through life. Each lobe is divided into a large number of lobules divided by areolar tissue, and each of these, under the microscope, is seen to consist of a cortical and medullary part. The cortex is composed of lymphoid tissue and resembles the structure of a lymphatic gland (see Lymphatic System); it is imperfectly divided into a number of follicles. In the medulla the

lymphoid cells are fewer, and nests of epithelial cells are found, called the concentric corpuscles of Hassall. The vascular supply is derived from all the vessels in the neighbourhood, the lymphatics are very large and numerous, but the nerves, which come from the sympathetic and vagus, are few and small. H. Watney (*Phil. Trans.*, 1882) has discovered haemoglobin, and apparently developing red blood corpuscles, in the thymus. (For further details see Gray's or Quain's *Anatomy*.)

Embryology.—The thymus is formed from a diverticulum, on each side, from the entoderm lining the third branchial groove, but the connexion with the pharynx is soon lost. The lymphoid cells and concentric corpuscles are probably the derivatives of the original cells lining the diverticulum.

Comparative Anatomy.—The thymus is always a paired gland. In most fishes it rises from the dorsal part of all five branchial clefts; in Lepidosiren (Dipnoi), from all except the first; in Urodela from 3rd, 4th and 5th, and in Anura from the 2nd only (see T.H. Bryce, "Development of Thymus in Lepidosiren," *Journ. Anat. and Phys.* vol. 40, p. 91). In all fishes, including the Dipnoi (mud fish) it is placed dorsally to the gill arches on each side. In the Amphibia it is found close to the articulation of the mandible. In the Reptilia it is situated by the side of the carotid artery; but in young crocodiles it is lobulated and extends all along the neck, as it does in birds, lying close to the side of the oesophagus. In Mammals the Marsupials are remarkable for having a well-developed cervical as well as thoracic thymus (J. Symington, *J. Anat. and Phys.* vol. 32, p. 278). In some of the lower mammals the gland does not disappear as early as it does in man. The thymus of the calf is popularly known as "the chest sweetbread."

Carotid Bodies

These are two small bodies situated, one on each side, between the origins of the external and internal carotid arteries. Microscopically they are divided into nodules or cell balls by connective tissue, and these closely resemble the structure of the parathyroids, but are without any thymic tissue. The blood-vessels in their interior are extremely large and numerous. The modern view of their development is that they are part of the sympathetic system, and the reaction of their cells to chromium salts bears this out. (See Kohn, *Archiv f. mikr. Anat.* lxx., 1907.)

In the Anura there is a rete or network into which the carotid artery breaks up in the position of the carotid body, and this has an important effect on the course of the circulation. It is probable, however, that this structure has nothing to do with the carotid body of Mammalia.

Coccygeal Body

This is a small median body, about the size of a pea, situated in front of the apex of the coccyx and between the insertions of the levatores ani muscles. It resembles the carotid body in its microscopical structure, but is not so vascular. Concentric corpuscles, like those of the thymus, have been recorded in it. It derives its arteries from the middle sacral and its nerves from the sympathetic. Of its embryology and comparative anatomy little is known, though J.W. Thomson Walker has recently shown that numerous, outlying, minute masses of the same structure lie along the course of the middle sacral artery (*Archiv f. mikroscop. Anat.* Bd. lxiv.). The probability is that, like the carotid body, it is sympathetic in origin. (Quain's *Anatomy* gives excellent illustrations of the histology of this as well as of all the other ductless glands.)

For the literature on and further details concerning the foregoing structures the following works should be consulted: Quain's *Anatomy*, vol. 1 (1908, London, Longman & Co.); McMurrich's *Development of the Human Body* (London, Rebman, 1906); Wiedersheim's *Vergleich. Anat. der Wirbeltiere* (Jena, 1898).

(F. G. P.)

DUDERSTADT, a town of Germany, in the Prussian province of Hanover, situated in a beautiful and fertile valley (formerly called *Goldene Mark*) watered by the Hahle, and on the

railway Wulften-Leinefelde. Pop. (1905) 5327. It is an interesting medieval town with many ancient buildings. Notable are the two Roman Catholic churches, beautiful Gothic edifices of the 14th century, the Protestant church, and the handsome town-hall. Its chief industries are woollen and cotton manufactures, sugar-refining and cigar-making; it has also a trade in singing-birds. Duderstadt was founded by Henry I. (the Fowler) in 929, passed later to the monastery of Quedlinburg, and then to Brunswick. It was a member of the Hanseatic League, and during the Thirty Years' War became a stronghold of the Imperialists. It was taken by Duke William of Weimar in 1632; in 1761 its walls were dismantled, and, after being alternately Prussian and Hanoverian, it passed finally in 1866 with Hanover to Prussia.

DUDLEY, BARONS AND EARLS OF. The holders of these English titles are descended from John de Sutton (*c.* 1310-1359) of Dudley castle, Staffordshire, who was summoned to parliament as a baron in 1342. Sutton was the son of another John de Sutton, who had inherited Dudley Castle through his marriage with Margaret, sister and heiress of John de Somery (d. 1321); he was called Lord Dudley, or Lord Sutton of Dudley, the latter being doubtless the correct form. However, his descendants, the Suttons, were often called by the name of Dudley; and from John Dudley of Atherington, Sussex, a younger son of John Sutton, the 5th baron, the earls of Warwick and the earl of Leicester of the Dudley family are descended.

John Sutton or Dudley (*c.* 1400-1487), the 5th baron, was first summoned to parliament in 1440, having been viceroy of Ireland from 1428 to 1430. He served Henry VI. as a diplomatist and also as a soldier, being taken prisoner at the first battle of St Albans in 1455, but this did not prevent him from enjoying the favour of Edward IV. He died on the 30th of September 1487. He was succeeded as 6th baron by his grandson Edward (*c.* 1459-1532), and one of his sons, William Dudley, was bishop of Durham from 1476 until his death in 1483. His descendant Edward Sutton or Dudley, the 9th baron (1567-1643), had several illegitimate sons. Among them was Dud Dudley (1599-1684), who in 1665 published *Metallum Martis*, describing a process of making iron with "pit-coale, sea-coale, &c." which was put in operation at his father's ironworks at Pensnet, Worcestershire, of which he was manager. His success aroused much opposition on the part of other ironmasters, and his commercial ventures at Himley, at Askew Bridge and at Bristol ended in loss and disaster. During the Civil War he was a colonel in the army of Charles I.

Dying without lawful male issue in June 1643, the 9th baron was succeeded in the barony by his grand-daughter, Frances (1611-1697); she married Humble Ward (*c.* 1614-1670), the son of a London goldsmith, who was created Baron Ward of Birmingham in 1644. Their son Edward (1631-1701) succeeded both to the barony of Dudley and to that of Ward, but these were separated when his grandson William died unmarried in May 1740. The barony of Dudley passed to a nephew, Ferdinando Dudley Lea, falling into abeyance on his death in October 1757; that of Ward passed to the heir male, John Ward (d. 1774), a descendant of Humble Ward. In 1763 Ward was created Viscount Dudley, and in April 1823 his grandson, John William Ward (1781-1833), became the 4th viscount.

Educated at Oxford, John William Ward entered parliament in 1802, and except for a few months he remained in the House of Commons until he succeeded his father in the peerage. In 1827 he was minister for foreign affairs under Canning and then under Goderich and under Wellington, resigning office in May 1828. As foreign minister he was only a cipher, but he was a man of considerable learning and had some reputation as a writer and a talker. Dudley took an interest in the foundation of the university of London, and his *Letters* to the bishop of Llandaff were published by the bishop (Edward Copleston) in 1840 (new ed. 1841). He was created Viscount Ednam and earl of Dudley in 1827, and when he died unmarried on the 6th of March 1833 these titles became extinct. His barony of Ward, however, passed to a kinsman, William Humble Ward (1781-1835), whose son, William (1817-1885), inheriting much of the dead earl's great wealth, was created Viscount Ednam and earl of Dudley in 1860. The 2nd earl of Dudley in this creation was the latter's son William Humble (b. 1866), who was lord-lieutenant of Ireland from 1902 to 1906, and in 1908 was appointed governor-general of Australia.

See H.S. Grazebrook in the *Herald and Genealogist*, vols. ii., v. and vi.; in *Notes and*

Queries, 2nd series, vol. xi.; and in vol. ix. of the publications of the William Salt Society (1888).

DUDLEY, EDMUND (*c.* 1462-1510), minister of Henry VII. of England, was a son of John Dudley of Atherington, Sussex, and a member of the great baronial family of Sutton or Dudley. After studying at Oxford and at Gray's Inn, Dudley came under the notice of Henry VII., and is said to have been made a privy councillor at the early age of twenty-three. In 1492 he helped to negotiate the treaty of Etaples with France and soon became prominent in assisting the king to check the lawlessness of the barons, and at the same time to replenish his own exchequer. He and his colleague Sir Richard Empson (*q.v.*) are called *fiscales judices* by Polydore Vergil, and owing to their extortions they became very unpopular. Dudley, who was speaker of the House of Commons in 1504, in addition to aiding Henry, amassed a great amount of wealth for himself, and possessed large estates in Sussex, Dorset and Lincolnshire. When Henry VII. died in April 1509, he was thrown into prison by order of Henry VIII. and charged with the crime of constructive treason, being found guilty and attainted. After having made a futile attempt to escape from prison, he was executed on the 17th or 18th of August 1510. Dudley's nominal crime was that during the last illness of Henry VII. he had ordered his friends to assemble in arms in case the king died, but the real reason for his death was doubtless the unpopularity caused by his avarice. During his imprisonment he sought to gain the favour of Henry VIII. by writing a treatise in support of absolute monarchy called *The Tree of Commonwealth*. This never reached the king's hands, and was not published until 1859, when it was printed privately in Manchester. Dudley's first wife was Anne, widow of Roger Corbet of Morton, Shropshire, by whom he had a daughter, Elizabeth, who married William, 6th Lord Stourton. By his second wife, Elizabeth, daughter of Edward Grey, Viscount Lisle, he had three sons: John, afterwards duke of Northumberland (*q.v.*); Andrew (d. 1559), who was made a knight and held various important posts during the reign of Edward VI.; and Jasper.

See Francis Bacon, *History of Henry VII.*, edited by J.R. Lumby (Cambridge, 1881); and J.S. Brewer, *The Reign of Henry VIII.*, edited by J. Gairdner (London, 1884).

DUDLEY, SIR ROBERT (1573-1649), titular duke of Northumberland and earl of Warwick, English explorer, engineer and author, was the son of Robert Dudley, earl of Leicester (*q.v.*), the favourite of Queen Elizabeth. His mother was Lady Douglas Sheffield, daughter of Thomas, first Baron Howard of Effingham. Leicester, who deserted Lady Douglas Sheffield for Lettice Knollys, widow of the first earl of Essex, denied that they were married. She asserted that they were, at Esher in Surrey, but her marriage with Sir Edward Stafford of Grafton, after her desertion by Leicester, would seem to be a tacit confession that her claim had no foundation. Her son Robert was born in May 1573, was recognized by Leicester, and sent to Christ Church, Oxford, in 1587. He inherited all Leicester's property under the earl's will at his death in 1588, and in the following year the property of Ambrose Dudley, earl of Warwick. In 1594 he made a voyage to the West Indies, and in 1596 he took part in the expedition to Cadiz and was knighted. In 1592 he had married a sister of Thomas Cavendish the circumnavigator. On her death he married Alicia Leigh in 1596, by whom he had four daughters. After the death of Elizabeth he endeavoured to secure recognition of his legitimacy, and of his right to inherit the titles of his father and uncle. The proceedings were quashed by the Star Chamber. In 1605 he obtained leave to travel abroad, and went to Italy accompanied by the beautiful Miss Elizabeth Southwell, daughter of Sir Robert Southwell of Woodrising, in the dress of a page. When ordered to return home and to provide for his deserted wife and family, he refused, was outlawed, and his property was confiscated. On the continent he avowed himself a Roman Catholic, married Elizabeth Southwell at Lyons, and entered the service of Cosimo II., grand-duke of Tuscany. In the service of the grand-duke he is said to have done some fighting against the Barbary pirates, and he was undoubtedly employed in draining the marshes behind Leghorn, and in the construction of the port. In 1620 the emperor Ferdinand II. gave him a patent recognizing his claim not only

to the earldom of Warwick but to the duchy of Northumberland, which had been held by his grandfather, who was executed by Queen Mary Tudor. In Italy Dudley was known as Duca di Nortombria and Conte di Warwick. He died near Florence on the 6th of September 1649, leaving a large family of sons and daughters. His deserted wife, Alicia, was created duchess of Dudley by Charles I. in 1644, and died in 1670, when the title became extinct. Through a daughter who married the Marquis Paleotti, Dudley was the ancestor of the wife of the first duke of Shrewsbury (of the revolution of 1688), and of her brother who was executed at Tyburn for murder on the 17th of March 1718. Dudley was the author of a pamphlet addressed to King James I., showing how the "impertinences of parliament" could be bridled by military force. But his chief claim to memory is the magnificent *Arcano dell mare*, published in Italian at Florence in 1645-1646 in three volumes folio. It is a collection of all the naval knowledge of the age, and is particularly remarkable for a scheme for the construction of a navy in five rates which Dudley designed and described. It was reprinted in Florence in two volumes folio in 1661 without the charts of the first edition.

AUTHORITIES.—G.L. Craik, *Romance of the Peerage* (London, 1848-1850), vol. iii.; Sir N.H. Nicolas, *Report of Proceedings on the Claim to the Barony of L'Isle* (London, 1829); and *The Italian Biography of Sir R. Dudley*, published anonymously, privately and without date or name of place, but known to have been written by Doctor Vaughan Thomas, vicar of Stoneleigh, who died in 1858.

(D. H.)

DUDLEY, THOMAS (1576-1653), British colonial governor of Massachusetts, was born in Northampton, England, in 1576, a member of the elder branch of the family to the younger branch of which Robert Dudley, earl of Leicester, belonged. He was the son of a country gentleman of some means and high standing, was captain of an English company in the French expedition of 1597, serving under Henry of Navarre, and eventually became the steward of the earl of Lincoln's estates, which he managed with great success for many years. Having been converted to Puritanism, he became a strict advocate of its strictest tenets. About 1627 he associated himself with other Lincolnshire gentlemen who in 1629 entered into an agreement to settle in New England provided they were allowed to take the charter with them. This proposal the general court of the Plymouth Company agreed to, and in April 1630 Dudley sailed to America in the same ship with John Winthrop, the newly appointed governor, Dudley himself at the last moment being chosen deputy-governor in place of John Humphrey (or Humfrey), the earl of Lincoln's son-in-law, whose departure was delayed. Dudley was for many years the most influential man in the Massachusetts Bay colony, save Winthrop, with whose policy he was more often opposed than in agreement. He was deputy-governor in 1629-1634, in 1637-1640, in 1646-1650 and in 1651-1653, and was governor four times, in 1634, 1640, 1645 and 1650. Soon after his arrival in the colony he settled at Newton (Cambridge), of which he was one of the founders; he was also one of the earliest promoters of the plan for the establishment of Harvard College. Winthrop's decision to make Boston the capital instead of Newton precipitated the first of the many quarrels between the two, Dudley's sterner and harsher Puritanism, being in strong contrast to Winthrop's more tolerant and liberal views. He was an earnest and persistent heresy-hunter —not only the Antinomians, but even such a good Puritan as John Cotton, against whom he brought charges, feeling the weight of his stern and remorseless hand. His position he himself best expressed in the following brief verse found among his papers:

"Let men of God in courts and churches watch
O'er such as do a Toleration hatch,
Lest that ill egg bring forth a Cockatrice
To poison all with heresy and vice."

He died at Roxbury, Massachusetts, on the 31st of July 1653.

See Augustine Jones, *Life and Work of Thomas Dudley, the Second Governor of Massachusetts* (Boston, 1899); and the *Life of Mr Thomas Dudley, several times Governor of the Colony of Massachusetts, written as is supposed by Cotton Mather*, edited by Charles Deane (Cambridge, 1870). Dudley's interesting and valuable "Letter to the Countess of Lincoln," is reprinted in Alexander Young's *Chronicles of the Planters of the Colony of Massachusetts Bay* (Boston, 1846), and in the New Hampshire Historical Society *Collections*,

vol. iv. (1834).

His son Joseph Dudley (1647-1720), colonial governor of Massachusetts, was born in Roxbury, Massachusetts, on the 23rd of September 1647. He graduated at Harvard College in 1665, became a member of the general court, and in 1682 was sent by Massachusetts to London to prevent the threatened revocation of her charter by Charles II. There, with an eye to his personal advancement, he secretly advised the king to annul the charter; this was done, and Dudley, by royal appointment, became president of the provisional council. With the advent of the new governor, Sir Edmund Andros, Dudley became a judge of the superior court and censor of the press. Upon the deposition of Andros, Dudley was imprisoned and sent with him to England, but was soon set free. In 1691-1692 he was chief-justice of New York, presiding over the court that condemned Leisler and Milburn. Returning to England in 1693, he was lieutenant-governor of the Isle of Wight and a member of parliament, and in 1702, after a long intrigue, secured from Queen Anne a commission as governor of Massachusetts, serving until 1715. His administration was marked, particularly in the earlier years, by ceaseless conflict with the general court, from which he demanded a regular fixed salary instead of an annual grant. He was active in raising volunteers for the so-called Queen Anne's War, and in 1707 sent a fruitless expedition against Port Royal. He was accused by the Boston merchants, who petitioned for his removal, of being in league with smugglers and illicit traders, and in 1708 a bitter attack on his administration was published in London, entitled *The Deplorable State of New England by reason of a Covetous and Treacherous Governor and Pusillanimous Counsellors*. His character may be best summed up in the words of one of his successors, Thomas Hutchinson, that "he had as many virtues as can consist with so great a thirst for honour and power." He died at Roxbury on the 2nd of April 1720.

Joseph Dudley's son, Paul Dudley (1675-1751), graduated at Harvard in 1690, studied law at the Temple in London, and became attorney-general of Massachusetts (1702 to 1718). He was associate justice of the superior court of that province from 1718 to 1745, and chief justice from 1745 until his death. He was a member of the Royal Society (London), to whose *Transactions* he contributed several valuable papers on the natural history of New England, and was the founder of the Dudleian lectures on religion at Harvard.

The best extended account of Joseph Dudley's administration is in J.G. Palfrey's *History of New England*, vol. iv. (Boston, 1875).

DUDLEY, a municipal, county and parliamentary borough and market-town of Worcestershire, England, in a portion of that county enclaved in Staffordshire, 8 m. W.N.W. of Birmingham, and 121 N.W. of London by the London & North Western railway. The Great Western railway also serves the town. Pop. (1891) 45,724; (1901) 48,733. Dudley lies on an elevated ridge, in the midst of the district of the midlands known as the Black Country, which is given up to ironworks and coal mines. The "ten-yard" coal, in the neighbourhood, is the thickest seam worked in England. Limestone is extensively quarried, fire-clay is abundant; and iron-founding, brass-founding, engineering works, glass works and brick works are comprised in the industries. Among the principal buildings are the churches of the five parishes into which the town is divided, the town hall, county court, free libraries, and school of art, grammar school with university and foundation scholarships, technical school, mechanics' institute, Guest hospital (founded by Joseph Guest, a citizen, in 1868), and a dispensary. In the market-place stands a large domed fountain, erected by the earl of Dudley (1867). There is a geological society with a museum, for the neighbourhood of Dudley is full of geological interest, the Silurian limestone abounding in fossils. To the north of the town are extensive remains of an ancient castle, surrounded by beautiful grounds. The hill on which it stands is of limestone, which by quarrying has been hollowed out in extensive chambers and galleries. The view from the castle is remarkable. The whole district is seen to be set with chimneys, pit-buildings and factories; and at night the glare of furnaces reveals the tireless activity of the Black Country. Dudley and its environs are connected by a tramway system, and water communication is afforded by the Dudley canal with Birmingham and with the river Severn.

Included in the parliamentary borough, but in Staffordshire, and 2½ m. by rail S.W. of Dudley, is Brierley Hill, a market-town on the river Stour and the Stourbridge and

Birmingham Canals. Its chief buildings are the modern church of St Michael, standing on a hill, the Roman Catholic church of St Mary, by A.W. Pugin, the town hall and free library. Between this and Dudley lie the great ironworks of Roundoak, and the extensive suburb of Netherton in the enclaved portion of Worcestershire. The industries are similar to those of Dudley. Three miles W. of Dudley is Kingswinford, a mining township, with large brick works, giving name to a parliamentary division of Staffordshire. The parliamentary borough of Dudley returns one member. The town itself is governed by a mayor, 10 aldermen and 30 councillors. Area 3546 acres.

In medieval times the importance of Dudley (*Dudelei*) depended on the castle, which is mentioned in the Domesday Survey. Before the Conquest Earl Eadwine held the manor, which in 1086 belonged to William FitzAnsculf, from whom it passed, probably by marriage, to Fulk Paynel, afterwards to the Somerys, Suttons and Wards, whose descendants (earls of Dudley) now hold it. The first mention of Dudley as a borough occurs in an inquisition taken after the death of Roger de Somery in 1272. This does not give a clear account of the privileges held by the burgesses, but shows that they had probably been freed from some or all of the services required from them as manorial tenants, in return for a fixed rent. In 1865 Dudley was incorporated. Before that time it was governed by a high and low bailiff appointed every year at the court leet of the manor. Roger de Somery evidently held a market by prescription in Dudley before 1261, in which year he came to terms with the dean of Wolverhampton, who had set up a market in Wolverhampton to the disadvantage of Roger's market at Dudley. According to the terms of the agreement the dean might continue his market on condition that Roger and his tenants should be free from toll there. Two fairs, on the 21st of September and the 21st of April, were granted in 1684 to Edward Lord Ward, lord of the manor. Dudley was represented in the parliament of 1295, but not again until the privilege was revived by the Reform Act of 1832. Mines of sea-coal in Dudley are mentioned as early as the reign of Edward I., and by the beginning of the 17th century mining had become an important industry.

DUDO, or DUDON (fl. *c.* 1000), Norman historian was dean of St Quentin, where he was born about 965. Sent in 986 by Albert I. count of Vermandois, on an errand to Richard I., duke of Normandy, he succeeded in his mission, and, having made a very favourable impression at the Norman court, spent some years in that country. During a second stay in Normandy Dudo wrote his history of the Normans, a task which Duke Richard I. had urged him to undertake. Very little else is known about his life, except that he died before 1043. Written between 1015 and 1030, his *Historia Normannorum*, or *Libri III. de moribus et actis primorum Normanniae ducum*, was dedicated to Adalberon, bishop of Laon. Dudo does not appear to have consulted any existing documents for his history, but to have obtained his information from oral tradition, much of it being supplied by Raoul, count of Ivry, a half-brother of Duke Richard I. Consequently the *Historia* partakes of the nature of a romance, and on this ground has been regarded as untrustworthy by such competent critics as E. Dummler and G. Waitz. Other authorities, however, *e.g.* J. Lair and J. Steenstrup, while admitting the existence of a legendary element, regard the book as of considerable value for the history of the Normans. Although Dudo was acquainted with Virgil and other Latin writers, his Latin is affected and obscure. The *Historia*, which is written alternately in prose and in verse of several metres, is divided into four parts, and deals with the history of the Normans from 852 to the death of Duke Richard I. in 996. It glorifies the Normans, and was largely used by William of Jumièges, Wace, Robert of Torigni, William of Poitiers and Hugh of Fleury in compiling their chronicles, and was first published by A. Duchesne in his *Historiae Normannorum scriptores antiqui*, at Paris in 1619. Another edition is in the *Patrologia Latina*, tome cxli. of J.P. Migne (Paris, 1844), but the best is perhaps the one edited by J. Lair (Caen, 1865).

See E. Dümmler, "Zur Kritik Dudos von St Quentin" in the *Forschungen zur deutschen Geschichte*, Bande vi. and ix. (Göttingen, 1866); G. Waitz, "Über die Quellen zur Geschichte der Begrundung der normannischen Herrschaft in Frankreich," in the *Gottinger gel. Anzeigen* (Göttingen, 1866); J.C.H.R. Steenstrup, *Normannerne*, Band i. (Copenhagen, 1876); J. Lair, *Étude critique et historique sur Dudon* (Caen, 1865); G. Kortung, *Über die Quellen des Roman de Rou* (Leipzig, 1867); W. Wattenbach, *Deutschlands Geschichtsquellen*, Band i. (Berlin, 1904); and A. Molinier, *Les Sources de l'histoire de France*, tome ii. (Paris, 1902).

DUDWEILER, a town of Germany, in the Prussian Rhine province, on the Sulzbach, 4 m. by rail N.E. from Saarbrücken. It has extensive coal mines and ironworks and produces fire-proof bricks. Pop. (1905) 16,320.

DUEL (Ital. *duello*, Lat. *duellum*—old form of *bellum*—from *duo*, two), a prearranged encounter between two persons, with deadly weapons, in accordance with conventional rules, with the object of voiding a personal quarrel or of deciding a point of honour. The first recorded instance of the word occurs in Coryate's *Crudities* (1611), but Shakespeare has *duello* in this sense, and uses "duellist" of Tybalt in *Romeo and Juliet*. In its earlier meaning of a judicial combat we find the word latinized in the Statute of Wales (Edw. I., Act 12), "*Placita de terris in partibus istis non habent terminari per duellum*."

Duels in the modern sense were unknown to the ancient world, and their origin must be sought in the feudal age of Europe. The single combats recorded in Greek and Roman history and legend, of Hector and Achilles, Aeneas and Turnus, the Horatii and Curiatii, were incidents in national wars and have nothing in common with the modern duel. It is, however, noteworthy that in Tacitus (*Germania*, cap. x.) we find the rudiments of the judicial duel (see WAGER, for the wager of battle). Domestic differences, he tells us, were settled by a legalized form of combat between the disputants, and when a war was impending a captive from the hostile tribe was armed and pitted against a national champion, and the issue of the duel was accepted as an omen. The judicial combat was a Teutonic institution, and it was in fact an appeal from human justice to the God of battles, partly a sanction of the current creed that might is right, that the brave not only will win but deserve to win. It was on these grounds that Gundobald justified, against the complaints of a bishop, the famous edict passed at Lyons (A.D. 501) which established the wager of battle as a recognized form of trial. It is God, he argued, who directs the issue of national wars, and in private quarrels we may trust His providence to favour the juster cause. Thus, as Gibbon comments, the absurd and cruel practice of judicial duels, which had been peculiar to some tribes of Germany, was propagated and established in all the monarchies of Europe from Sicily to the Baltic. Yet in its defence it may be urged that it abolished a worse evil, the compurgation by oath which put a premium on perjury, and the ordeal, or judgment of God, when the cause was decided by blind chance, or more often by priestcraft.

The judicial combat.

Those who are curious to observe the formalities and legal rules of a judicial combat will find them described at length in the 28th book of Montesquieu's *Esprit des lois*. On these regulations he well remarks that, as there are an infinity of wise things conducted in a very foolish manner, so there are some foolish things conducted in a very wise manner. For our present purpose it is sufficient to observe the development of the idea of personal honour from which the modern duel directly sprang. In the ancient laws of the Swedes we find that if any man shall say to another, "You are not a man equal to other men," or "You have not the heart of a man," and the other shall reply, "I am a man as good as you," they shall meet on the highway, and then follow the regulations for the combat. What is this but the modern challenge? By the law of the Lombards if one man call another arga, the insulted party might defy the other to mortal combat. What is *arga* but the *dummer Junger* of the German student? Beaumanoir thus describes a legal process under Louis le Débonnaire:—The appellant begins by a declaration before the judge that the appellee is guilty of a certain crime; if the appellee answers that his accuser lies, the judge then ordains the duel. Is not this the modern point of honour, by which to be given the lie is an insult which can only be wiped out by blood?

From Germany the judicial combat rapidly spread to France, where it flourished greatly from the 10th to the 12th century, the period of customary law. By French kings it was welcomed as a limitation of the judicial powers of their half independent vassals. It was a form of trial open to all freemen and in certain cases, as under Louis VI., the privilege was

extended to serfs. Even the church resorted to it not unfrequently to settle disputes concerning church property. Abbots and priors as territorial lords and high justiciaries had their share in the confiscated goods of the defeated combatant, and Pope Nicholas when applied to in 858 pronounced it "a just and legitimate combat." Yet only three years before the council of Valence had condemned the practice, imposing the severest penance on the victor and refusing the last rites of the church to the vanquished as to a suicide. In 1385 a duel was fought, the result of which was so preposterous that even the most superstitious began to lose faith in the efficacy of such a judgment of God. A certain Jacques Legris was accused by the wife of Jean Carrouge of having introduced himself by night in the guise of her husband whom she was expecting on his return from the Crusades. A duel was ordained by the parlement of Paris, which was fought in the presence of Charles VI. Legris was defeated and hanged on the spot. Not long after, a criminal arrested for some other offence confessed himself to be the author of the outrage. No institution could long survive so open a confutation, and it was annulled by the parlement. Henceforward the duel in France ceases to be an appeal to Heaven, and becomes merely a satisfaction of wounded honour. Under Louis XII. and Francis I. we find the first vestiges of tribunals of honour. The last instance of a duel authorized by the magistrates, and conducted according to the forms of law, was the famous one between François de Vivonne de la Châtaignerie and Guy Chabot de Jarnac. The duel was fought on the 10th of July 1547 in the courtyard of the château of St Germain-en-Laye, in the presence of the king and a large assembly of courtiers. It was memorable in two ways. It enriched the French language with a new phrase; a sly and unforeseen blow, such as that by which de Jarnac worsted La Châtaignerie, has since been called a *coup de Jarnac*. And Henry, grieved at the death of his favourite, swore a solemn oath that he would never again permit a duel to be fought. This led to the first of the many royal edicts against duelling. By a decree of the council of Trent (cap. xix.) a ban was laid on "the detestable use of duels, an invention of the devil to compass the destruction of souls together with a bloody death of the body."

In England, it is now generally agreed, the wager of battle did not exist before the time of the Norman Conquest. Some previous examples have been adduced, but on examination they will be seen to belong rather to the class of single combats between the champions of two opposing armies. One such instance is worth quoting as a curious illustration of the superstition of the time. It occurs in a rare tract printed in London, 1610, *The Duello*, or *Single Combat*. "Danish irruptions and the bad aspects of Mars having drencht the common mother earth with her sonnes' blood streames, under the reigne of Edmund, a Saxon monarch, *misso in compendium* (so worthy Camden expresseth it) *bello utriusque gentis fata Edmundo Anglorum et Canuto Danorum regibus commissa fuerunt, qui singulari certamine de summa imperij in hac insula* (that is, the Eight in Glostershire) *depugnarunt."* By the laws of William the Conqueror the trial by battle was only compulsory when the opposite parties were both Normans, in other cases it was optional. As the two nations were gradually merged into one, this form of trial spread, and until the reign of Henry II. it was the only mode for determining a suit for the recovery of land. The method of procedure is admirably described by Shakespeare in the opening scene in *Richard II.*, where Henry of Bolingbroke, duke of Hereford, challenges Thomas, duke of Norfolk; in the mock-heroic battle between Horner the Armourer and his man Peter in *Henry VI.*; and by Sir W. Scott in the *Fair Maid of Perth*, where Henry Gow appears before the king as the champion of Magdalen Proudfute. The judicial duel never took root in England as it did in France. In civil suits it was superseded by the grand assize of Henry II., and in cases of felony by indictment at the prosecution of the crown. One of the latest instances occurred in the reign of Elizabeth, 1571, when the lists were actually prepared and the justices of the common pleas appeared at Tothill Fields as umpires of the combat. Fortunately the petitioner failed to put in an appearance, and was consequently nonsuited (see Spelman, *Glossary*, s.v. "Campus"). As late as 1817 Lord Ellenborough, in the case of *Thornton* v. *Ashford*, pronounced that "the general law of the land is that there shall be a trial by battle in cases of appeal unless the party brings himself within some of the exceptions." Thornton was accused of murdering Mary Ashford, and claimed his right to challenge the appellant, the brother of the murdered girl, to wager of battle. His suit was allowed, and, the challenge being refused, the accused escaped. Next year the law was abolished (59 Geo. III., c. 46).

The duel of honour.

In sketching the history of the judicial combat we have traced the parentage of the modern duel. Strip the former of its legality, and divest it of its religious sanction, and the latter remains. We are justified, then, in dating the commencement of duelling from the abolition of the wager of battle. To pursue its history we must return to France, the country where it first arose, and the soil on which it has most flourished. The causes which made it indigenous to

France are sufficiently explained by the condition of society and the national character. As Buckle has pointed out, duelling is a special development of chivalry, and chivalry is one of the phases of the protective spirit which was predominant in France up to the time of the Revolution. Add to this the keen sense of personal honour, the susceptibility and the pugnacity which distinguish the French race. Montaigne, when touching on this subject in his essays, says, “Put three Frenchmen together on the plains of Libya, and they will not be a month in company without scratching one another’s eyes out.” The third chapter of d’Audiguier’s *Ancien usage des duels* is headed, “Pourquoi les seuls Français se battent en duel.” English literature abounds with allusions to this characteristic of the French nation. Lord Herbert of Cherbury, who was ambassador at the court of Louis XIII., says, “There is scarce a Frenchman worth looking on who has not killed his man in a duel.” Ben Jonson, in his *Magnetic Lady*, makes Compass, the scholar and soldier, thus describe France, “that garden of humanity”:—

In France.

> “There every gentleman professing arms
> Thinks he is bound in honour to embrace
> The bearing of a challenge for another,
> Without or questioning the cause or asking
> Least colour of a reason.”

Duels were not common before the 16th century. Hallam attributes their prevalence to the barbarous custom of wearing swords as a part of domestic dress, a fashion which was not introduced till the later part of the 15th century. In 1560 the states-general at Orleans supplicated Charles IX. to put a stop to duelling. Hence the famous ordinance of 1566, drawn up by the chancellor de l’Hôpital, which served as the basis of the successive ordinances of the following kings. Under the frivolous and sanguinary reign of Henry III., “who was as eager for excitement as a woman,” the rage for duels spread till it became almost an epidemic. In 1602 the combined remonstrances of the church and the magistrates extorted from the king an edict condemning to death whoever should give or accept a challenge or act as second. But public opinion was revolted by such rigour, and the statue remained a dead letter. A duel forms a fit conclusion to the reign. A hair-brained youth named L’Isle Marivaux swore that he would not survive his beloved king, and threw his cartel into the air. It was at once picked up, and Marivaux soon obtained the death he had courted. Henry IV. began his reign by an edict against duels, but he was known in private to favour them; and, when de Créqui asked leave to fight Don Philip of Savoy, he is reported to have said, “Go, and if I were not a king I would be your second.” Fontenay-Mareuil says, in his *Mémoires*, that in the eight years between 1601 and 1609, 2000 men of noble birth fell in duels. In 1609 a more effective measure was taken at the instance of Sully by the establishment of a court of honour. The edict decrees that all aggrieved persons shall address themselves to the king, either directly or through the medium of the constables, marshals, &c.; that the king shall decide, whether, if an accommodation could not be effected, permission to fight should be given; that the aggressor, if pronounced in the wrong, shall in any case be suspended from any public office or employment, and be mulcted of one-third of his revenue till he has satisfied the aggrieved party; that any one giving or receiving a challenge shall forfeit all right of reparation and all his offices; that any one who kills his adversary in an unauthorized duel shall suffer death without burial, and his children shall be reduced to villanage; that seconds, if they take part in a duel, shall suffer death, if not, shall be degraded from the profession of arms. This edict has been pronounced by Henri Martin “the wisest decree of the ancient monarchy on a matter which involves so many delicate and profound questions of morals, politics, and religion touching civil rights” (*Histoire de France*, x. 466).

In the succeeding reign the mania for duels revived. Rostand’s *Cyrano* is a life-like modern portraiture of French bloods in the first half of the 17th century. De Houssaye tells us that in Paris when friends met the first question was, “Who fought yesterday? who is to fight to-day?” They fought by night and day, by moonlight and by torch-light, in the public streets and squares. A hasty word, a misconceived gesture, a question about the colour of a riband or an embroidered letter, such were the commonest pretexts for a duel. The slighter and more frivolous the dispute, the less were they inclined to submit them to the king for adjudication. Often, like gladiators or prize-fighters, they fought for the pure love of fighting. A misunderstanding is cleared up on the ground. “N’importe,” cry the principals, “puisque nous sommes ici, battons-nous.” Seconds, as Montaigne tells us, are no longer witnesses, but must take part themselves unless they would be thought wanting in affection or courage; and he goes on to complain that men are no longer contented with a single second, “c’était

anciennement des duels, ce sont à cette heure rencontres et batailles." There is no more striking instance of Richelieu's firmness and power as a statesman than his conduct in the matter of duelling. In his *Testament politique* he has assigned his reasons for disapproving it as a statesman and ecclesiastic. But this disapproval was turned to active detestation by a private cause. His elder brother, the head of the house, had fallen in a duel stabbed to the heart by an enemy of the cardinal. Already four edicts had been published under Louis XIII. with little or no effect, when in 1626 there was published a new edict condemning to death any one who had killed his adversary in a duel, or had been found guilty of sending a challenge a second time. Banishment and partial confiscation of goods were awarded for lesser offences. But this edict differed from preceding ones not so much in its severity as in the fact that it was the first which was actually enforced. The cardinal began by imposing the penalties of banishment and fines, but, these proving ineffectual to stay the evil, he determined to make a terrible example. To quote his own words to the king, "Il s'agit de couper la gorge aux duels ou aux édits de votre Majesté." The count de Boutteville, a renommist who had already been engaged in twenty-one affairs of honour, determined out of pure bravado to fight a twenty-second time. The duel took place at midday on the Place Royale. Boutteville was arrested with his second, the count de Chapelles; they were tried by the parlement of Paris, condemned and, in spite of all the influence of the powerful house of Montmorenci, of which de Boutteville was a branch, they were both beheaded on the 21st of June 1627. For a short time the ardour of duellists was cooled. But the lesson soon lost its effect. Only five years later we read in the *Mercure de France* that two gentlemen who had killed one another in a duel were, by the cardinal's orders, hanged on a gallows, stripped and with their heads downwards, in the sight of all the people. This was a move in the right direction, since, for fashionable vices, ridicule and ignominy is a more drastic remedy than death. It was on this principle that Caraccioli, prince of Melfi, when viceroy of Piedmont, finding that his officers were being decimated by duelling, proclaimed that all duels should be fought on the parapet of the Ponte Vecchio, and if one of the combatants chanced to fall into the river he should on no account be pulled out.

Under the long reign of Louis XIV. many celebrated duels took place, of which the most remarkable were that between the duke of Guise and Count Coligny, the last fought on the Place Royale, and that between the dukes of Beaufort and Nemours, each attended by four friends. Of the ten combatants, Nemours and two others were killed on the spot, and none escaped without some wound. No less than eleven edicts against duelling were issued under le Grand Monarque. That of 1643 established a supreme court of honour composed of the marshals of France; but the most famous was that of 1679, which confirmed the enactments of his predecessors, Henry IV. and Louis XII. At the same time a solemn agreement was entered into by the principal nobility that they would never engage in a duel on any pretence whatever. A medal was struck to commemorate the occasion, and the firmness of the king, in refusing pardon to all offenders, contributed more to restrain this scourge of society than all the efforts of his predecessors.

The subsequent history of duelling in France may be more shortly treated. In the preamble to the edict of 1704 Louis XIV. records his satisfaction at seeing under his reign an almost entire cessation of those fatal combats which by the inveterate force of custom had so long prevailed. Addison (*Spectator*, 99) notes it as one of the most glorious exploits of his reign to have banished the false point of honour. Under the regency of Louis XV. there was a brief revival. The last legislative act for the suppression of duels was passed on the 12th of April 1723. Then came the Revolution, which in abolishing the *ancien régime* fondly trusted that with it would go the duel, one of the privileges and abuses of an aristocratic society. Dupleix, in his *Military Law concerning the Duel* (1611), premises that these have no application to lawyers, merchants, financiers or justices. This explains why in the legislation of the National Assembly there is no mention of duels. Camille Desmoulins when challenged shrugged his shoulders and replied to the charge of cowardice that he would prove his courage on other fields than the Bois de Boulogne. The two great Frenchmen whose writings preluded the French Revolution both set their faces against it. Voltaire had indeed, as a young man, in obedience to the dictates of society, once sought satisfaction from a nobleman for a brutal insult, and had reflected on his temerity in the solitude of the Bastille.[1] Henceforward he inveighed against the practice, not only for its absurdity, but also for its aristocratic exclusiveness. Rousseau had said of duelling, "It is not an institution of honour, but a horrible and barbarous custom, which a courageous man despises and a good man abhors." Napoleon was a sworn foe to it. "Bon duelliste mauvais soldat" is one of his best known sayings; and, when the king of Sweden sent him a challenge, he replied that he would order a fencing-master to attend him as plenipotentiary. After the battle of Waterloo duels such as Lever loves to depict were frequent between disbanded French officers and those of

the allies in occupation. The restoration of the Bourbons brought with it a fresh crop of duels. Since then duels have been frequent in France—more frequent, however, in novels than in real life—fought mainly between politicians and journalists, and with rare exceptions bloodless affairs. If fought with pistols, the distance and the weapons chosen render a hit improbable; and, if fought with rapiers, honour is generally satisfied with the first blood drawn. Among Frenchmen famous in politics or letters who have "gone out" may be mentioned Armand Carrel, who fell in an encounter with Émile Girardin; Thiers, who thus atoned for a youthful indiscretion; the elder Dumas; Lamartine; Ste Beuve, who to show at once his sangfroid and his sense of humour, fought under an umbrella; Ledru Rollin; Edmond About; Clément Thomas; Veuillot, the representative of the church militant; Rochefort; and Boulanger, the Bonapartist *fanfaron*, whose discomfiture in a duel with Floquet resulted in a notable loss of popular respect.

In England.

Duelling did not begin in England till some hundred years after it had arisen in France. There is no instance of a private duel fought in England before the 16th century, and they are rare before the reign of James I. A very fair notion of the comparative popularity of duelling, and of the feeling with which it was regarded at various periods, might be gathered by examining the part it plays in the novels and lighter literature of the times. The earliest duels we remember in fiction are that in the *Monastery* between Sir Piercie Shafton and Halbert Glendinning, and that in *Kenilworth* between Tressilian and Varney. (That in *Anne of Geierstein* either is an anachronism or must reckon as a wager by battle.) Under James I. we have the encounter between Nigel and Lord Dalgarno. The greater evil of war, as we observed in French history, expels the lesser, and the literature of the Commonwealth is in this respect a blank. With the Restoration there came a reaction against Puritan morality, and a return to the gallantry and loose manners of French society, which is best represented by the theatre of the day. The drama of the Restoration abounds in duels. Passing on to the reign of Queen Anne, we find the subject frequently discussed in the *Tatler* and the *Spectator*, and Addison points in his happiest way the moral to a contemporary duel between Mr Thornhill and Sir Cholmeley Dering. "I come not," says Spinomont to King Pharamond, "I come not to implore your pardon, I come to relate my sorrow, a sorrow too great for human life to support. Know that this morning I have killed in a duel the man whom of all men living I love best." No reader of *Esmond* can forget Thackeray's description of the doubly fatal duel between the duke of Hamilton and Lord Mohun, which is historical, or the no less life-like though fictitious duel between Lord Mohun and Lord Castlewood. The duel between the two brothers in Stevenson's *Master of Ballantrae* is one of the best conceived in fiction. Throughout the reigns of the Georges they are frequent. Richardson expresses his opinion on the subject in six voluminous letters to the *Literary Repositor*. Sheridan, like Farquhar in a previous generation, not only dramatized a duel, but fought two himself. Byron thus commemorates the bloodless duel between Tom Moore and Lord Jeffrey:—

> "Can none remember that eventful day,
> That ever glorious almost fatal fray,
> When Little's leadless pistols met the eye,
> And Bow Street myrmidons stood laughing by?"

There are no duels in Miss Austen's novels, but in those of Miss Edgeworth, her contemporary, there are three or four. As we approach the 19th century they become rarer in fiction. Thackeray's novels, indeed, abound in duels. "His royal highness the late lamented commander-in-chief" had the greatest respect for Major Macmurdo, as a man who had conducted scores of affairs for his acquaintance with the greatest prudence and skill; and Rawdon Crawley's duelling pistols, "the same which I shot Captain Marker," have become a household word. Dickens, on the other hand, who depicts contemporary English life, and mostly in the middle classes, in all his numerous works has only three; and George Eliot never once refers to a duel. Tennyson, using a poet's privilege, laid the scene of a duel in the year of the Crimean War, but he echoes the spirit of the times when he stigmatizes "the Christless code that must have life for a blow." Browning, who delights in cases of conscience, has given admirably the double moral aspect of the duel in his two lyrics entitled "Before" and "After."

To pass from fiction to fact we will select the most memorable English duels of the last century and a half. Lord Byron killed Mr Chaworth in 1765; Charles James Fox and Mr Adams fought in 1779; duke of York and Colonel Lennox, 1789; William Pitt and George Tierney, 1796; George Canning and Lord Castlereagh, 1809; Mr Christie killed John Scott, editor of the *London Magazine*, 1821; duke of Wellington and earl of Winchelsea, 1829; Mr

Roebuck and Mr Black, editor of *Morning Chronicle*, 1835; Lord Alvanley and a son of Daniel O'Connell in the same year; Earl Cardigan wounded Captain Tuckett, was tried by his peers, and acquitted on a legal quibble, 1840.

The year 1808 is memorable in the annals of duelling in England. Major Campbell was sentenced to death and executed for killing Captain Boyd in a duel. In this case it is true that there was a suspicion of foul play; but in the case of Lieutenant Blundell, who was killed in a duel in 1813, though all had been conducted with perfect fairness, the surviving principal and the seconds were all convicted of murder and sentenced to death, and, although the royal pardon was obtained, they were all cashiered. The next important date is the year 1843, when public attention was painfully called to the subject by a duel in which Colonel Fawcett was shot by his brother-in-law, Lieutenant Monro. The survivor, whose career was thereby blasted, had, it was well known, gone out most reluctantly, in obedience to the then prevailing military code. A full account of the steps taken by the prince consort, and of the correspondence which passed between him and the duke of Wellington, will be found in the *Life of the Prince* by Sir Theodore Martin. The duke, unfortunately, was not an unprejudiced counsellor. Not only had he been out himself, but, in writing to Lord Londonderry on the occasion of the duel between the marquess and Ensign Battier in 1824, he had gone so far as to state that he considered the probability of the Hussars having to fight a duel or two a matter of no consequence. In the previous year there had been formed in London the association for the suppression of duelling. It included leading members of both houses of parliament and distinguished officers of both services. The first report, issued in 1844, gives a memorial of the association presented to Queen Victoria through Sir James Graham, and in a debate in the House of Commons (15th of March 1844) Sir H. Hardinge, the secretary of war, announced to the House that Her Majesty had expressed herself desirous of devising some expedient by which the barbarous practice of duelling should be as much as possible discouraged. In the same debate Mr Turner reckoned the number of duels fought during the reign of George III. at 172, of which 91 had been attended with fatal results; yet in only two of these cases had the punishment of death been inflicted. But though the proposal of the prince consort to establish courts of honour met with no favour, yet it led to an important amendment of the articles of war (April 1844). The 98th article ordains that "every person who shall fight or promote a duel, or take any steps thereto, or who shall not do his best to prevent duel, shall, if an officer, be cashiered, or suffer such other penalty as a general court-martial may award." These articles, with a few verbal changes, were incorporated in the consolidated Army Act of 1879 (section 38), which is still in force.

In Germany.

In the German army duels are still authorized by the military code as a last resort in grave cases. A German officer who is involved in a difficulty with another is bound to notify the circumstance to a council of honour at the latest as soon as he has either given or received a challenge. A council of honour consists of three officers of different ranks and is instructed, if possible, to bring about a reconciliation. If unsuccessful it must see that the conditions of the duel are not out of proportion to the gravity of the quarrel. Public opinion was greatly roused by a tragic duel fought by two officers of the reserve in 1896; and the German emperor in a cabinet order of 1897, confirmed in 1901, enforced the regulation of the military court of honour, and gave warning that any infringement would be visited with the full penalties of the law. It is, notwithstanding, still the fact that a German officer who is not prepared to accept a challenge and fight, if the opinion of his regiment demands it, must leave the service. The German penal code (*Reichsstrafgesetzbuch*, pars. 101-110) only punishes a duel when it is fought with lethal weapons; and much controversy has raged round the question of the *Mensuren* or students' duels, which, as being conducted with sharpened rapiers, have, despite the precautions taken, in the way of bandaging the vital parts of the body which a cut would reach, to reduce the risk of a fatal issue to a minimum, been declared by the Supreme Court of the Empire to fall under the head of duels, and as such to be punishable.

The *Mensuren* (German students' duels) above referred to are frequently misunderstood. They bear little resemblance, save in form, to the duel *à outrance*, and should rather be considered in the light of athletic games, in which the overflow of high animal spirits in young Germany finds its outlet. These combats are indulged in principally by picked representatives of the "corps" (recognized clubs), and according to the position and value of the *Schmisse* (cuts which have landed) points are awarded to either side. Formerly these so-called duels could be openly indulged in at most universities without let or hindrance. Gradually, however, the academic authorities took cognizance of the illegality of the practice, and in many cases inflicted punishment for the offence. Nowadays, owing to the decision of the supreme court reserving to the common law tribunals the power to deal with such cases, the governing bodies at the universities have only a disciplinary control, which is

exercised at the various seats of learning in various degrees: in some the practice is silently tolerated, or at most visited by reprimand; in others, again, by relegation or *carcer*—with the result that the students of one university frequently visit another, in order to be able to fight out their battles under less rigorous surveillance.

Modern views.

Any formal discussion of the morality of duelling is, in England at least, happily superfluous. No fashionable vice has been so unanimously condemned both by moralists and divines, and in tracing its history we are reminded of the words of Tacitus, "in civitate nostra et vetabitur semper et retinebitur." Some, however, of the problems, moral and social, which it suggests may be shortly noticed. That duelling flourished so long in England the law is, perhaps, as much to blame as society. It was doubtless from the fact that duels were at first a form of legal procedure that English law has refused to take cognizance of private duels. A duel in the eye of the law differs nothing from an ordinary murder. The greatest English legal authorities, from the time of Elizabeth downwards, such as Coke, Bacon and Hale, have all distinctly affirmed this interpretation of the law. But here as elsewhere the severity of the penalty defeated its own object. The public conscience revolted against a Draconian code which made no distinction between wilful murder and a deadly combat wherein each party consented to his own death or submitted to the risk of it. No jury could be found to convict when conviction involved in the same penalty a Fox or a Pitt and a Turpin or a Brownrigg. Such, however, was the conservatism of English publicists that Bentham was the first to point out clearly this defect of the law, and propose a remedy. In his *Introduction to the Principles of Morals and Legislation*, published in 1789, Bentham discusses the subject with his usual boldness and logical precision. In his exposition of the absurdity of duelling considered as a branch of penal justice, and its inefficiency as a punishment, he only restates in a clearer form the arguments of Paley. So far there is nothing novel in his treatment of the subject. But he soon parts company with the Christian moralist, and proceeds to show that duelling does, however rudely and imperfectly, correct and repress a real social evil. "It entirely effaces a blot which an insult imprints upon the honour. Vulgar moralists, by condemning public opinion upon this point, only confirm the fact." He then points out the true remedy for the evil. It is to extend the same legal protection to offences against honour as to offences against the person. The legal satisfactions which he suggests are some of them extremely grotesque. Thus for an insult to a woman, the man is to be dressed in a woman's clothes, and the retort to be inflicted by the hand of a woman. But the principle indicated is a sound one, that in offences against honour the punishment must be analogous to the injury. Doubtless, if Bentham were now alive, he would allow that the necessity for such a scheme of legislation had in a great measure passed away. That duels have since become extinct is no doubt principally owing to social changes, but it may be in part ascribed to improvements in legal remedies in the sense which Bentham indicated. A notable instance is Lord Campbell's Act of 1843, by which, in the case of a newspaper libel, a public apology coupled with a pecuniary payment is allowed to bar a plea. In the Indian Code there are special enactments concerning duelling, which is punishable not as murder but as homicide.

Suggestions have from time to time been made for the establishment of courts of honour, but the need of such tribunals is doubtful, while the objections to them are obvious. The present tendency of political philosophy is to contract rather than extend the province of law, and any interference with social life is justly resented. Real offences against reputation are sufficiently punished, and the rule of the lawyers, that mere scurrility or opprobrious words, which neither of themselves import nor are attended with any hurtful effects, are not punishable, seems on the whole a wise one. What in a higher rank is looked upon as a gross insult may in a lower rank be regarded as a mere pleasantry or a harmless joke. Among the lower orders offences against honour can hardly be said to exist; the learned professions have each its own tribunal to which its members are amenable; and the highest ranks of society, however imperfect their standard of morality may be, are perfectly competent to enforce that standard by means of social penalties without resorting either to trial by law or trial by battle.

The duel, which in a barbarous age may be excused as "a sort of wild justice," was condemned by Bacon as "a direct affront of law and tending to the dissolution of magistracy." It survived in more civilized times as a class distinction and as an ultimate court of appeal to punish violations of the social code. In a democratic age and under a settled government it is doomed to extinction. The military duels of the European continent, and the so-called American duel, where the lot decides which of the two parties shall end his life, are singular survivals. For real offences against reputation law will provide a sufficient remedy The learned professions will have each its own tribunal to which its members are

amenable. Social stigma is at once a surer and a juster defence against conduct unworthy of a gentleman. Yet the duel dies hard, and even to-day it is approved or palliated by some notable publicists and professors in France and Germany. M.H. Marion (*La Grande Encyclopédie*), in an article strongly condemnatory of duels, still holds that the wrongdoer is bound to accept a challenge, though he may not take the offensive, and further allows that obligatory duels may be the only way of evoking a sense of honour and of maintaining discipline in the army. Dr Paulsen goes much further, and not only defends the duels of university students (*Mensuren*) as an encouragement of physical exercise, a proof of courage and a protest of worth against wealth, but maintains generally that the duel should be retained as an expedient in those exceptional cases when a man cannot bring himself to drag before a law court the outrage done to his personal honour. But in such cases Dr Paulsen would have the courts hold the injured person scathless, whether he be challenger or challenged, and visit the aggressor with condign punishment.

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(F. S.)

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1 Voltaire met the chevalier Rohan-Chabot at the house of the Marquis of Sully. The chevalier, offended by Voltaire's free speech, insolently asked the marquis, "Who is that young man?" "One," replied Voltaire, "who if he does not parade a great name, honours that he bears." The chevalier said nothing at the time, but, seizing his opportunity, inveigled Voltaire into his coach, and had him beaten by six of his footmen. Voltaire set to work to learn fencing, and then sought the chevalier in the theatre, and publicly challenged him. A *bon-mot* at the chevalier's expense was the only satisfaction that the philosopher could obtain. "Monsieur, si quelque affaire d'intérêt ne vous a point fait oublier l'outrage dont j'ai à me plaindre, j'espère que vous m'en rendrez raison." The chevalier was said to employ his capital in petty usury.

DUENNA (Span. *dueña*, a married lady or mistress, Lat. *domina*), specifically the chief lady-in-waiting upon the queen of Spain. The word is more widely applied, however, to an elderly lady in Spanish and Portuguese households (holding a position midway between a governess and companion) appointed to take charge of the young girls of the family; and "duenna" is thus used in English as a synonym for chaperon (*q.v.*).

DUET (an adaptation of the Ital. *duetto*, from Lat. *duo*, two), a term in music for a composition for two performers, both either vocal or instrumental. The term is not properly applied to a composition for one voice and one instrument, the latter being regarded as an accompaniment, though in the modern evolution of this latter form of composition it often has the same character. Both parts must be of equal importance; if one is subordinated to the other it becomes an accompaniment and the work ceases to be a duet. Instrumental duets are written either for two different instruments, such as Mozart's duets for violin and piano, or for two similar instruments. Duets written for the pianoforte are either for two

performers on two separate instruments or for two performers on the same instrument, when they are termed "*duets à quatre mains*."

DUFAURE, JULES ARMAND STANISLAS (1798-1881), French statesman, was born at Saujon (Charente-Inférieure) on the 4th of December 1798. He became an advocate at Bordeaux, where he won a great reputation by his oratorical gifts, but soon abandoned law for politics, and in 1834 was elected deputy. In 1839 he became minister of public works in the Soult ministry, and succeeded in freeing railway construction in France from the obstacles which till then had hampered it. Losing office in 1840, Dufaure became one of the leaders of the Opposition, and on the outbreak of the revolution of 1848 he frankly accepted the Republic, and joined the party of moderate republicans. On October 13th he became minister of the interior under G. Cavaignac, but retired on the latter's defeat in the presidential election. During the Second Empire Dufaure abstained from public life, and practised at the Paris bar with such success that he was elected *bâtonnier* in 1862. In 1863 he succeeded to Pasquier's seat in the French Academy. In 1871 he became a member of the Assembly, and it was on his motion that Thiers was elected President of the Republic. Dufaure became the minister of justice as chief of the party of the "left-centre," and his tenure of office was distinguished by the passage of the jury-law. In 1873 he fell with Thiers, but in 1875 resumed his former post under L.J. Buffet, whom he succeeded on the 9th of March 1876 as president of the council. In the same year he was elected a life senator. On December the 12th he withdrew from the ministry owing to the attacks of the republicans of the left in the chamber and of the conservatives in the senate. After the check which the conservatives received on the 16th of May he returned to power on the 24th of December 1877. Early in 1879 Dufaure took part in compelling the resignation of Marshal MacMahon, but immediately afterwards (1st February), worn out by opposition, he himself retired. He died in Paris on the 28th of June 1881.

See G. Picot, *M. Dufaure, sa vie et ses discours* (Paris, 1883).

DUFF, ALEXANDER (1806-1878), Scottish missionary in India, was born on the 26th of April 1806, at Auchnahyle in the parish of Moulin, Perthshire. At St Andrews University he came under the influence of Dr Chalmers. He then accepted an offer made by the foreign mission committee of the general assembly to become their first missionary to India. He was ordained in August 1829, and started at once for India, but was twice shipwrecked before he reached Calcutta in May 1830, and lost all his books and other property. Making Calcutta the base of his operations, he at once identified himself with a policy which had far-reaching results. Up to this time Protestant missions in India had been successful only in reaching low-caste and outcaste peoples, particularly in Tinevelly and south Travancore. The Hindu and Mahommedan communities had been practically untouched. Duff saw that, to reach these communities, educational must take the place of evangelizing methods, and he devised the policy of an educational mission. The success of his work had the effect (1) of altering the policy of the government of India in matters of education, (2) of securing the recognition of education as a missionary agency by Christian churches at home, and (3) of securing entrance for Christian ideas into the minds of high-caste Hindus. He first opened an English school in which the Bible was the centre of the school work, and along with it all kinds of secular knowledge were taught from the rudiments upwards to a university standard. The English language was used on the ground that it was destined to be the great instrument of higher education in India, and also as giving the Hindu the key of Western knowledge. The school soon began to expand into a missionary college, and a government minute was adopted on the 7th of March 1835, to the effect that in higher education the object of the British government should be the promotion of European science and literature among the natives of India, and that all funds appropriated for purposes of education would be best employed on English education alone. Duff wrote a pamphlet on the question, entitled "A New Era of the English Language and Literature in India." He returned home in 1834 broken in health, but succeeded in securing the approval of his church for his educational

plans, and also in arousing much interest in the work of foreign missions.

In 1840 he returned to India. In the previous year the earl of Auckland, governor-general, had yielded to the “Orientalists” who opposed Duff, and adopted a policy which was a compromise between the two. At the Disruption of 1843 Duff sided with the Free Church, gave up the college buildings, with all their effects, and with unabated courage set to work to provide a new institution. He had the support of Sir James Outram and Sir Henry Lawrence, and the encouragement of seeing a new band of converts, including several young men of high caste. In 1844 Viscount Hardinge opened government appointments to all who had studied in institutions similar to Duff’s foundation. In the same year Duff took part in founding the *Calcutta Review*, of which from 1845 to 1849 he was editor. In 1849 he returned home. He was moderator of the Free Church assembly in 1851. He gave evidence before various Indian committees of parliament on matters of education. This led to an important despatch by Viscount Halifax, president of the board of control, to the marquess of Dalhousie, the governor-general, authorizing an educational advance in primary and secondary schools, the provision of technical and scientific teaching, and the establishment of schools for girls.

In 1854 Duff visited the United States, where what is now New York University gave him the degree of LL.D.; he was already D.D. of Aberdeen. In 1856 he returned to India, where the mutiny soon broke out; his descriptive letters were collected in a volume entitled *The Indian Mutiny, its Causes and Results* (1858). Duff gave much thought and time to the university of Calcutta, which owes its examination system and the prominence given to physical sciences to his influence. In 1863 Sir Charles Trevelyan offered him the post of vice-chancellor of the University, but his health compelled him to leave India. As a memorial of his work the Duff Hall was erected in the centre of the educational buildings of Calcutta; and a fund of £11,000 was raised for his disposal, the capital of which was afterwards to be used for invalided missionaries of his own church. In 1864 Duff visited South Africa, and on his return became convener of the foreign missions committee of the Free Church. He raised £10,000 to endow a missionary chair at New College, Edinburgh, and himself became first professor. Among other missionary labours of his later years, he helped the Free Church mission on Lake Nyassa, travelled to Syria to inspect a mission at Lebanon, and assisted Lady Aberdeen and Lord Polwarth to establish the Gordon Memorial Mission in Natal. In 1873 the Free Church was threatened with a schism owing to negotiations for union with the United Presbyterian Church. Duff was called to the chair, and guided the church happily through this crisis. He also took part in forming the alliance of Reformed Churches holding the Presbyterian system. He died on the 12th of February 1878. By his will he devoted his personal property to found a lectureship on foreign missions on the model of the Bampton Lectures.

See his *Life*, by George Smith (2 vols.).

(D. Mn.)

DUFFERIN AND AVA, FREDERICK TEMPLE HAMILTON-TEMPLE-BLACKWOOD, 1st Marquess of (1826-1902), British diplomatist, son of Price Blackwood, 4th Baron Dufferin, was born at Florence, Italy, on the 21st of June 1826. The Irish Blackwoods were of old Scottish stock,[1] tracing their descent back to the 14th century. John Blackwood of Bangor (1591-1663), the ancestor of the Irish line, made a fortune and acquired landed property in county Down, and his great-grandson Robert was created a baronet in 1763. Sir Robert’s son, Sir John, married the heiress of the Hamiltons, earls of Clanbrassil and viscounts of Clandeboye (“clan of yellow Hugh”), and thus brought into the family a large property in the borough of Killyleagh and barony of Dufferin, county Down. Sir John Blackwood (d. 1799) declined a peerage, and so did his heir James at the time of the Union, but the Irish title of Baroness Dufferin was conferred (1800) on Sir John’s widow, and James (d. 1836) succeeded as second baron in 1808. His brother Hans (d. 1839) became third baron, and by his marriage with Miss Temple (a descendant of the Temples of Stowe) was the father of Price Blackwood, 4th baron. Among other distinguished members of the family was Admiral Sir Henry Blackwood, Bart. (1770-1832)—a brother of James and Hans—one of Nelson’s captains, who commanded the “Euryalus” at Trafalgar. Price Blackwood, too, was in the Navy; his marriage in 1825 with Helen Selina Sheridan, a daughter of Thomas Sheridan, and granddaughter of Richard Brinsley Sheridan, the dramatist and politician, was

against his parents' wishes, but his young wife's talents and beauty soon won them over.

Frederick went to Eton (1839-1843) and Christ Church, Oxford (1845-1847), where he took a pass school and was President of the Union. His father died in 1841, and the influence of his mother—one of three unusually accomplished sisters, the other two being the duchess of Somerset and Mrs Norton (*q.v.*)—was very marked on his mental development; she lived till 1867 and is commemorated by the "Helen's Tower" erected by her son in her honour at Clandeboye (the Irish seat of the Blackwoods) in 1861, and adorned with epigraphical verses written by Tennyson, Browning and others. On leaving Oxford Lord Dufferin busied himself for some little while with the management of his Irish estates. In 1846-1848 he was active in relieving the distress in Ireland due to the famine, and he was always generous and liberal in his relations with his tenants. In 1855 he already advocated compensation for disturbance and for improvements; but while supporting reasonable reform, he demanded justice for the landowners. In later years (1868-1881) he wrote much, in opposition to J.S. Mill, on behalf of Irish landlordism, and, when Gladstone adopted Home Rule, Lord Dufferin, who had been attached throughout his career to the Liberal party, regarded the new policy as fatal both to Ireland and to the United Kingdom, though, being then an ambassador, he took no public part in opposing it.

Starting with every personal and social advantage, Lord Dufferin quickly became a favourite both at Court and in London society; and in 1849 he was made a lord-in-waiting. In political life he followed Lord John Russell, and in 1850 was further attached to the party by being created a peer of the United Kingdom as Baron Clandeboye. In 1855 Lord John Russell took him as attaché on his special mission to the Vienna Conference. Meanwhile Lord Dufferin was enlarging his experience by foreign travel, and in 1856 he went on a yachting-tour to Iceland, which he described with much humour and graphic power in his successful book, *Letters from High Latitudes*; this volume made his reputation as a writer, though his only other purely literary publication was his memorial edition (1894) of his mother's *Poems and Verses*. In 1860 Lord John Russell sent him as British representative on a joint commission of the powers appointed to inquire into the affairs of the Lebanon (Syria), where the massacres of Christian Maronites by the Mussulman Druses had resulted in the landing of a French force and the possibility of a French occupation. Lord Dufferin was associated with French, Russian, Prussian and Turkish colleagues, and his difficult diplomatic position was made none the less delicate by his conscientious endeavour to be just to all parties. Even if he had not satisfied himself that the Mahommedans were by no means wholly to blame, the question of punishment was in any case complicated by the problem of future administration. His own proposal to put the whole Syrian province under a responsible governor, appointed by the sultan for a term of years, with unfettered jurisdiction, was rejected; but at last it was agreed to place a Christian governor, subordinate to the Porte, over the Lebanon district, and to set up local administrative councils. In May 1861 the French forces departed, and Lord Dufferin was thanked for his services by the government.

In 1862 he married Hariot, daughter of Captain A. Rowan Hamilton, of Killyleagh Castle, Down. He held successively the posts of under-secretary for India (1864-1866) and under-secretary for war (1866) in Lord Palmerston's and Earl Russell's ministries; and he was chancellor of the duchy of Lancaster, outside the cabinet, under Mr Gladstone (1868-1872). In 1871 he was created earl of Dufferin.

In 1872 he was appointed governor-general of Canada. There his tact and personal charm and genial hospitality were invaluable. He had already become known as a powerful and graceful orator, and a man of culture and political distinction; and his abilities were brilliantly displayed in dealing with the problems of the newly united provinces of the Canadian Dominion. At a time when a weak or unattractive governor-general might easily have damaged the imperial connexion, he admittedly strengthened and consolidated it. Lord Dufferin left Canada in 1878, and in 1879, rather to the annoyance of his old party leader, he accepted from the conservative prime minister, Lord Beaconsfield, the appointment of ambassador to Russia. At St Petersburg he did useful diplomatic work for a couple of years, and then, in 1881, was transferred to Constantinople as ambassador to Turkey. He was soon involved in the negotiations connected with the situation in Egypt caused by Arabi's revolt and the intervention of Great Britain. It was Lord Dufferin's task to arrange matters at Constantinople, so that no international friction should be created by any inconvenient assertion by the sultan of his position as suzerain, while it was also necessary to avoid offending either the sultan or the other powers by any appearance of ignoring their rights. He was considerably helped by Turkish ineptitude, and by the accomplished fact of British military successes in Egypt, but his own diplomacy was responsible for securing the necessary freedom of action for the British government.

From October 1882 to May 1883 he was himself in Egypt as British commissioner to report on a scheme of reorganization; and his recommendations—drawn up in a somewhat elaborate State paper—formed the basis of the subsequent reforms. In 1884 he was appointed viceroy of India, succeeding Lord Ripon, whose zeal on behalf of the natives had created a good deal of antagonism among the officials and the Anglo-Indian community. Lord Dufferin, though agreeing in the main with Lord Ripon's policy, was excellently fitted for the task of restoring confidence without producing any undesirable reaction, and in domestic affairs his viceroyalty was a period of substantial progress, in the reform of the evils of land tenure and in other directions. He was responsible also for initiating stable relations with Afghanistan, and settling the crisis with Russia arising out of the Panjdeh incident (1885), which led to the delimitation of the north-west frontier (1887). The most striking event of his administration was, however, the annexation of Burma, resulting from the Burmese War of 1885; and this procured him, on his resignation, the title of marquess of Dufferin and Ava (1888). His viceroyalty was also memorable for Lady Dufferin's work, and the starting of a fund called by her name, for providing better medical treatment for native women. In 1888 he was made ambassador at Rome, and in 1892 he was promoted to be ambassador in Paris, a post which he retained till 1896, when he retired from the public service.

Lord Dufferin was one of the most admired public servants of his time. A man of great natural gifts, he had a special talent for diplomacy, though he has no claim to a place in the first rank of statesmen. He was remarkable for tact and amiability, and had a florid and rather elaborately literary style of oratory, which also characterized his despatches and reports. For purposes of ceremony his courtliness, dignity and charm of manner were invaluable, and both in public and in private life he was a conspicuous "great gentleman." His last years, spent mainly at his Irish home, were clouded by the death of his eldest son, the earl of Ava, at Ladysmith in the Boer War (1900), and by business troubles. He was so ill-advised as to become chairman in 1897 of the "London and Globe Finance Corporation," a financial company which most good judges in the city of London thought to be too much in the hands of its managing director, Mr Whitaker Wright, whose methods had been a good deal criticized. At last there came a complete crash, and an exposure before the liquidator, which ultimately led to Mr Whitaker Wright's trial for fraud in 1904, and his suicide within the precincts of the court on being found guilty. Lord Dufferin did not live to see this final catastrophe. The affairs of the company were still under investigation in bankruptcy when, on the 12th of February 1902, he died. He had been in failing health for two or three years, but, having once become chairman of the "London and Globe," he had insisted upon standing by his colleagues when difficulties arose. Incautious as he had been in accepting the position, no reflections were felt to be possible on Lord Dufferin's personal honour; he was a serious loser by the failure, and he had followed his predecessor in the chairmanship, Lord Loch, in confiding too wholly in the masterful personality of Mr Wright. He was succeeded in the title by his second son Terence (b. 1866).

The official *Life* of Lord Dufferin, by Sir Alfred Lyall, appeared in 1905. There are two Canadian histories of his Canadian administration, one by George Stewart (1878), the other by W. Leggo (1878). Lady Dufferin brought out *Our Viceregal Life in India* in 1889, and *My Canadian Journal* in 1891. See also the articles on India; *History*; Canada: *History*; and Egypt: *History*.

(H. Ch.)

1 One branch of the Blackwood family emigrated to France; the head of this line being Adam Blackwood (d. 1613), jurist, poet and divine, and senator of the presidial court of Poitiers.

DUFF-GORDON, LUCIE (1821-1869), English woman of letters, daughter of John and Sarah Austin (*q.v.*), was born on the 24th of June 1821. Her chief playfellows as a child were her cousin, Henry Reeve, and John Stuart Mill, who lived next door in Queen Square, London. In 1834 the Austins went to Boulogne, and at table d'hôte Lucie found herself next to Heinrich Heine. The poet and the little girl became fast friends, and years afterwards she contributed to Lord Houghton's *Monographs Personal and Social* a touching account of a renewal of their friendship when Heine lay dying in Paris. Her parents went to Malta in 1836, and Lucie Austin was left in England at school, but her unconventional education made the restrictions of a girls' school exceedingly irksome. She showed her independence

of character by joining the English Church, though this step was certain to cause pain to her parents, who were Unitarians, and to many of her friends. She married in 1840 Sir Alexander Duff-Gordon (1811-1872). With her mother's beauty she had inherited her social gifts, and she gathered round her a brilliant circle of friends. George Meredith has analysed and described her extraordinary success as a hostess, and the process by which she reduced too ardent admirers to "happy crust-munching devotees." "In England, in her day," he says, "while health was with her, there was one house where men and women conversed. When that house perforce was closed, a light had gone out in our country." After her father's death, she fell into weak health and was obliged to seek sunnier climes. She went in 1860 to the Cape of Good Hope, and later to Egypt, where she died on the 14th of July 1869. She had translated among other works *Ancient Grecian Mythology* (1839) from the German of Niebuhr; *Mary Schweidler*; *The Amber Witch* (1844) from the German of Wilhelm Meinhold; and *Stella and Vanessa* (1850) from the French of A.F.L. de Wailly. Her *Letters from the Cape* (1862-1863) appeared in 1865; and in 1865 her *Letters from Egypt*, edited by her mother, attracted much attention. *Last Letters from Egypt* (1875) contained a memoir by her daughter, Mrs Janet Ross. Lady Duff-Gordon won the hearts of her Arab dependents and neighbours. She doctored their sick, taught their children, and sympathized with their sorrows.

The *Letters front Egypt* were not originally published in a complete form. A fuller edition than had before been possible, with an introduction by George Meredith, was edited in 1902 by Mrs Janet Ross. See also Mrs Ross's *Three Generations of Englishwomen* (1886).

DUFFTOWN, a municipal and police burgh of Banffshire, Scotland, on the Fiddich, 64 m. W.N.W. of Aberdeen by the Great North of Scotland railway. Pop. (1901) 1823. It dates from 1817 and bears the name of its founder, James Duff, 4th earl of Fife. Although planned in the shape of a cross, with a square and tower in the middle, the arms of the cross are not straight, the constructor holding the ingenious opinion that, in order to prevent little towns from being taken in at a glance, their streets should be crooked. The leading industries are lime-works and distilleries, the water being specially fitted for the making of whisky. The town has considerable repute as a health resort, owing partly to its elevation (737 ft.) and partly to the natural charms of the district. The parish of Mortlach, in which Dufftown is situated, is rich in archaeological and historical associations. What is called the Stone of Mortlach is traditionally believed to have been erected to commemorate the success of Malcolm II. over the Danes in 1010. The three large stones known as "The King's Grave," a hill-fort, and cairns are of interest to the antiquary. The old church of Mortlach, though restored and almost renewed, still contains some lancet windows and a round-headed doorway, besides monuments dating from 1417. A portion of old Balvenie Castle, a ruin, is considered to be of Pictish origin, but most of it is in the Scots Baronial. It has associations with Alexander Stewart, earl of Buchan and lord of Badenoch (1343-1405), son of Robert II., whose ruffianly conduct in Elginshire earned him the designation of the Wolf of Badenoch, the Comyns, the Douglases (to whom it gave the title of baron in the 15th century), the Stuarts and the Duffs. The new castle, an uninteresting building, was erected in 1724 by the earl of Fife, and though untenanted is maintained in repair. Two miles to the S.E. of Dufftown is the ruined castle of Auchindown, finely situated on a limestone crag, 200 ft. high, of which three sides are washed by the Fiddich and the fourth was protected by a moat. It dates from the 11th century, and once belonged to the Ogilvies, from whom it passed in 1535 to the Gordons. The Gothic hall with rows of fluted pillars is in fair preservation. Ben Rinnes (2755 ft.) and several other hills of lesser altitude all lie within a few miles of Dufftown. About 4 m. to the N.W. is Craigellachie—Gaelic for "the rock of alarm"—(pop. 454), on the confines of Elginshire. It is situated on the Spey amidst scenery of surpassing loveliness. The slogan of the Grants is "Stand fast Craigellachie!" The place has become an important junction of the Great North of Scotland railway system.

DUFFY, SIR CHARLES GAVAN (1816-1903), Irish and colonial politician, was born in

Monaghan, Ireland, on the 12th of April 1816. At an early age he became connected with the press, and was one of the founders (1842) of the *Nation*, a Dublin weekly which was remarkable for its talent, for its seditious tendencies, and for the fire and spirit of its political poetry. In 1844 Duffy was included in the same indictment with O'Connell, and shared his conviction in Dublin and his acquittal by the House of Lords upon a point of law. His ideas, nevertheless, were too revolutionary for O'Connell; a schism took place in 1846, and Duffy united himself to the "Young Ireland" party. He was tried for treason-felony in 1848, but the jury were unable to agree. Duffy continued to agitate in the press and in parliament, to which he was elected in 1852, but his failure to bring about an alliance between Catholics and Protestants upon the land question determined him in 1856 to emigrate to Victoria. There he became in 1857 minister of public works, and after an active political career, in the course of which he was prime minister from 1871 to 1873, when he was knighted, he was elected speaker of the House of Assembly in 1877, being made K.C.M.G. in the same year. In 1880 he resigned and returned to Europe, residing mostly in the south of France. He published *The Ballad Poetry of Ireland* (1845), several works on Irish history, *Conversations with Carlyle* (1892), *Memoirs* (1898), &c. In 1891 he became first president of the Irish Literary Society. He was married three times, his third wife dying in 1889. He died on the 9th of February 1903.

DUFOUR, WILHELM HEINRICH [Guillaume Henri] (1787-1875), Swiss general, was born at Constance of Genevese parents temporarily in exile, on the 15th of September 1787. In 1807 he went to the École Polytechnique at Paris, Switzerland being then under French rule, taking the 140th place only in his entrance examination. By two years' close study he so greatly improved his position that he was ranked fifth in the exit examination. Immediately on leaving the school he received a commission in the engineers, and was sent to serve in Corfu, which was blockaded by the English. During the Hundred Days he attained the rank of captain, and was employed in raising fortifications at Grenoble. After the peace that followed Waterloo he resumed his status as a Swiss citizen, and devoted himself to the military service of his native land. From 1819 to 1830 he was chief instructor in the military school of Thun, which had been founded mainly through his instrumentality. Among other distinguished foreign pupils he instructed Louis Napoleon, afterwards emperor of the French. In 1827 he was raised to the rank of colonel, and commanded the Federal army in a series of field manœuvres. In 1831 he became chief of the staff, and soon afterwards he was appointed quartermaster-general. Two years later the diet commissioned him to superintend the execution of a complete trigonometrical survey of Switzerland. He had already made a cadastral survey of the canton of Geneva, and published a map of the canton on the scale of $\frac{1}{25000}$. The larger work occupied thirty-two years, and was accomplished with complete success. The map in 25 sheets on the scale of $\frac{1}{100000}$ was published at intervals between 1842 and 1865, and is an admirable specimen of cartography. In recognition of the ability with which Dufour had carried out his task, the Federal Council in 1868 ordered the highest peak of Monte Rosa to be named Dufour Spitze. In 1847 Dufour was made general of the Federal Army, which was employed in reducing the revolted Catholic cantons. The quickness and thoroughness with which he performed the painful task, and the wise moderation with which he treated his vanquished fellow-countrymen, were acknowledged by a gift of 60,000 francs from the diet and various honours from different cities and cantons of the confederation. In politics he belonged to the moderate conservative party, and he consequently lost a good deal of his popularity in 1848. In 1864 he presided over the international conference which framed the Geneva Convention as to the treatment of the wounded in time of war, &c. He died on the 14th of July 1875. His *De la fortification permanente* (1850) is an important and original contribution to the science of fortification, and he was also the author of a *Mémoire sur l'artillerie des anciens et sur celle du moyen âge* (1840), *Manuel de tactique pour les officiers de toutes armes* (1842), and various other works in military science. His memoir, *La Campagne du Sonderbund* (Paris, 1876), is prefaced by a biographical notice. An equestrian statue of General Dufour was erected after his death at Geneva by national subscription.

DUFRÉNOY, OURS PIERRE ARMAND PETIT (1792-1857), French geologist and mineralogist, was born at Sevran, in the department of Seine-et-Oise, in France, on the 5th of September 1792. After leaving the Imperial Lyceum, in 1811, he studied till 1813 at the École Polytechnique, and then entered the Corps des Mines. He subsequently assisted in the management of the École des Mines, of which he was professor of mineralogy and afterwards director. He was also professor of geology at the École des Ponts et Chaussés. In conjunction with Élie de Beaumont he in 1841 published a great geological map of France, the result of investigations carried on during thirteen years (1823-1836). Five years (1836-1841) were spent in writing the text to accompany the map, the publication of the work with two quarto vols. of text extending from 1841-1848; a third volume was issued in 1873. The two authors had already together published *Voyage métallurgique en Angleterre* (1827, 2nd ed. 1837-1839), *Mémoires pour servir à une description géologique de la France*, in four vols. (1830-1838), and a *Mémoire* on Cantal and Mont-Dore (1833). Other literary productions of Dufrénoy are an account of the iron mines of the eastern Pyrenees (1834), and a treatise on mineralogy (3 vols. and atlas, 1844-1845; 2nd ed., 4 vols. and atlas, 1856-1859), in which the geological relations as well as the physical and chemical properties of minerals were dealt with; he likewise contributed numerous papers to the Annales des mines and other scientific publications, one of the most interesting of which is entitled *Des terrains volcaniques des environs de Naples*. Dufrénoy was a member of the Academy of Sciences, a commander of the Legion of Honour, and an inspector-general of mines. He died in Paris on the 20th of March 1857.

DUFRESNY, CHARLES, Sieur de la Rivière (1648-1724), French dramatist, was born in Paris in 1648. The allegation that his grandfather was an illegitimate son of Henry IV. procured him the liberal patronage of Louis XIV., who gave him the post of *valet de chambre*, and affixed his name to many lucrative privileges. Dufresny's expensive habits neutralized all efforts to enrich him, and as if to furnish a piquant commentary on the proverb that poverty makes us acquainted with strange bedfellows, he married, as his second wife, a washerwoman, in discharge of her bill—a whimsicality which supplied Le Sage with an episode in the *Diable boiteux*, and was made the subject of a comedy by J.M. Deschamps (*Charles Rivière Dufresny, ou le mariage impromptu*). He died in Paris on the 6th of October 1724. His plays, destitute for the most part of all higher qualities, abound in sprightly wit and pithy sayings. In the six volumes of his *Théâtre* (Paris, 1731), some of the best are *L'Esprit de contradiction* (1700), *Le Double Veuvage* (1701), *La Joueuse* (1709), *La Coquette de village* (1715), *La Réconciliation normande* (1719) and *Le Mariage fait et rompu* (1721). A volume of *Poésies diverses*, two volumes of *Nouvelles historiques* (1692), and *Les Amusements sérieux et comiques d'un Siamois* (1705), a work to which Montesquieu was indebted for the idea of his *Lettres persanes*, complete the list of Dufresny's writings. The best edition of his works is that of 1747 (4 vols.). His *Théâtre* was edited (1882) by Georges d'Heylli.

DUGAZON [Jean Henri Gourgaud] (1746-1809), French actor, was born in Marseilles on the 15th of November 1746, the son of the director of military hospitals there. He began his career in the provinces, making his début in 1770 at the Comédie Française, where he aspired to leading comedy roles. He pleased the public at once and was made *sociétaire* in 1772. Dugazon was an ardent revolutionist, helped the schism which divided the company, and went with Talma and the others to what became the Théâtre de la République. After the closing of this theatre, and the dissolution of the Comédie Française, he took refuge at the Théâtre Feydeau until (1799) he returned to the restored Comédie. He retired in 1807, and died insane at Sandillon in 1809. Dugazon wrote three mediocre comedies of a political character, performed at the Théâtre de la République. He married, in 1776, Louis Rose Lefèvre, but was soon divorced and then married again. The first Madame Dugazon (1755-1821), the daughter of a Berlin dancing master, was a charming actress. Her first appearance on the stage was made at the age of twelve as a dancer. It was as an actress

"with songs" that she made her début at the Comédie Italienne in 1774 in Grétry's *Sylvain*. She was at once admitted *pensionnaire* and in 1776 *sociétaire*. Madame Dugazon delighted all Paris, and nightly crowded the Comédie Italienne for more than twenty years. The two kinds of parts with which she was especially identified—young mothers and women past their first youth—are still called "*dugazons*" and "*mères dugazons*." Examples of the first are Jenny in *La Dame blanche* and Berthe de Simiane in *Les Mousquetaires de la reine*; of the second, Marguerite in *Le Pré aux clercs* and the queen in *La Part du diable*.

Dugazon's sister, Marie Rose Gourgaud (1743-1804), was an actress who first played at Stuttgart, where she married Angelo, brother of Gaétano Vestris, the dancer. Under the protection of the dukes of Choiseul and Duras, she was commanded to make her début at the Comédie Française in 1768, where she created important parts in a number of tragedies.

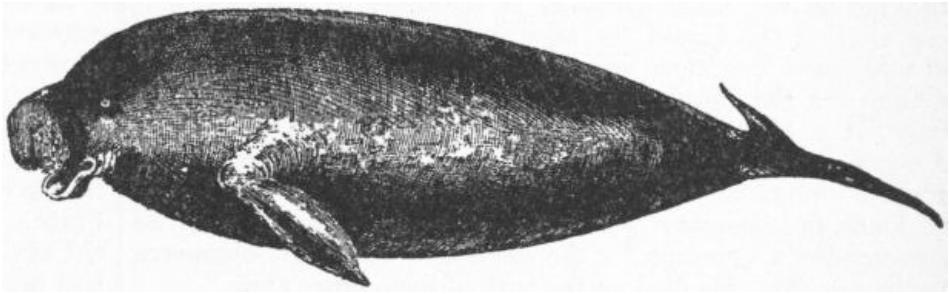
DUGDALE, SIR WILLIAM (1605-1686), English antiquary, was born at Shustoke, near Coleshill, in Warwickshire, on the 12th of September 1605, the son of a country gentleman of an old Lancashire stock; he was educated at Coventry. To please his father, who was old and infirm, he married at seventeen. He lived with his wife's family until his father's death in 1624, when he went to live at Fillongley, near Shustoke, an estate formerly purchased for him by his father. In 1625 he purchased the manor of Blythe, Shustoke, and removed thither in 1626. He had early shown an inclination for antiquarian studies, and in 1635, meeting Sir Symon Archer (1581-1662), himself a learned antiquary, who was then employed in collecting materials for a history of Warwickshire, he accompanied him to London. There he made the acquaintance of Sir Christopher (afterwards Lord) Hatton, comptroller of the household, and Thomas, earl of Arundel, then earl marshal of England. In 1638 Dugdale was created a pursuivant of arms extraordinary by the name of Blanch Lyon, and in 1639 rouge croix pursuivant in ordinary. He now had a lodging in the Heralds' Office, and spent much of his time in London examining the records in the Tower and the Cottonian and other collections of MSS. In 1641 Sir Christopher Hatton, foreseeing the war and dreading the ruin and spoliation of the Church, commissioned him to make exact drafts of all the monuments in Westminster Abbey and the principal churches in England, including Peterborough, Ely, Norwich, Lincoln. Newark, Beverley, Southwell, Kingston-upon-Hull, York, Selby, Chester, Lichfield, Tamworth and Warwick. In June 1642 he was summoned to attend the king at York. When war broke out Charles deputed him to summon to surrender the castles of Banbury and Warwick, and other strongholds which were being rapidly filled with ammunition and rebels. He went with Charles to Oxford, remaining there till its surrender in 1646. He witnessed the battle of Edgehill, where he made afterwards an exact survey of the field, noting how the armies were drawn up, and where and in what direction the various movements took place, and marking the graves of the slain. In November 1642 he was admitted M.A. of the university, and in 1644 the king created him Chester herald. During his leisure at Oxford he collected material at the Bodleian and college libraries for his books. In 1646 Dugdale returned to London and compounded for his estates, which had been sequestrated, by a payment of £168. After a visit to France in 1648 he continued his antiquarian researches in London, collaborating with Richard Dodsworth in his *Monasticon Anglicanum*, which was published successively in single volumes in 1655, 1664 and 1673. At the Restoration he obtained the office of Norroy king-at-arms, and in 1677 was created garter principal king-at-arms, and was knighted. He died "in his chair" at Blythe Hall on the 10th of February 1686.

Dugdale's most important works are *Antiquities of Warwickshire* (1656); *Monasticon Anglicanum* (1655-1673); *History of St Paul's Cathedral* (1658); and *Baronage of England* (1675-1676). His *Life*, written by himself up to 1678, with his diary and correspondence, and an index to his manuscript collections, was edited by William Hamper, and published in 1827.

DUGONG, one of the two existing generic representatives of the Sirenia, or herbivorous

aquatic mammals. Dugongs are distinguished from their cousins the manatis by the presence in the upper jaw of the male of a pair of large tusks, which in the female are arrested in their growth, and remain concealed. There are never more than five molar teeth on each side of either jaw, or twenty in all, and these are flat on the grinding surface. The flippers are unprovided with nails, and the tail is broad, and differs from that of the manati in being crescent-shaped instead of rounded. The bones are hard and firm, and take a polish equal to that of ivory. Dugongs frequent the shallow waters of the tropical seas, extending from the east coast of Africa north of the mouth of the Zambezi, along the shores of the Indian, Malayan and Australian seas, where they may be seen basking on the surface of the water, or browsing on submarine pastures of seaweed, for which the thick obtuse lips and truncated snout pre-eminently fit them. They are gregarious, feeding in large numbers in localities where they are not often disturbed. The female produces a single young one at a birth, and is remarkable for the great affection it shows for its offspring, so that when the young dugong is caught there is no difficulty in capturing the mother. Three species—the Indian dugong (*Halicore dugong*), the Red Sea dugong (*H. tabernaculi*) and the Australian dugong (*H. australis*)—are commonly recognized. The first is abundant along the shores of the Indian Ocean, and is captured in large numbers by the Malays, who esteem its flesh a great delicacy; the lean portions, especially of young specimens, are regarded by Europeans as excellent eating. It is generally taken by spearing, the main object of the hunter being to raise the tail out of the water, when the animal becomes perfectly powerless. It seldom attains a length of more than 8 or 10 ft. The Australian dugong is a larger species, attaining sometimes a length of 15 ft.; it occurs along the Australian coast from Moreton Bay to Cape York, and is highly valued by the natives, who hunt it with spears, and gorge themselves with its flesh, when they are fortunate enough to secure a carcase. Of late years the oil obtained from the blubber of this species has been largely used in Australia as a substitute for cod-liver oil. It does not contain iodine, but is said to possess all the therapeutic qualities of cod-liver oil without its nauseous taste. A full-grown dugong yields from 10 to 12 gallons of oil, and this forms in cold weather a thick mass, and requires to be melted before a fire previous to being used. The flesh of the Australian dugong is easy of digestion, the muscular fibre when fresh resembling beef, and when salted having the flavour of bacon. In the earliest Australian dugong-fishery natives were employed to harpoon these animals, which soon, however, became too wary to allow themselves to be approached near enough for this purpose, and the harpoon was abandoned for the net. The latter is spread at night, and in its meshes dugongs are caught in considerable numbers.

(R. L.*)



The Dugong.

DUGUAY-TROUIN, RENÉ (1673-1736), French sea captain, belonged to a well-known family of merchants and sea captains of St Malo. He was born at St Malo on the 10th of June 1673. He was originally intended for the church, and studied with that view at Rennes and Caen; but on the breaking out of the war with England and Holland in 1689 he went to sea in a privateer owned by his family. During the first three months his courage was tried by a violent tempest, an imminent shipwreck, the boarding of an English ship, and the threatened destruction of his own vessel by fire. The following year, as a volunteer in a vessel of 28 guns, he was present in a bloody combat with an English fleet of five merchant vessels. The courage he then showed was so remarkable that in 1691, at the age of eighteen, his family gave him a corsair of 14 guns; and having been thrown by a tempest on the coast of Ireland, he burned two English ships in the river Limerick. In 1694 his vessel of 40 guns was captured by the English, and, being taken prisoner, he was confined in the castle of

Plymouth. He escaped, according to his own account, by the help of a pretty shopwoman and her lover, a French refugee in the English service. He then obtained command of a vessel of 48 guns, and made a capture of English vessels on the Irish coast. In 1696 he made a brilliant capture of Dutch vessels, and the king hearing an account of the affair gave him a commission as *capitaine de frégate* (commander) in the royal navy. In 1704-1705 he desolated the coasts of England. In 1706 he was raised to the rank of captain of a vessel of the line. In 1707 he was made chevalier of the order of St Louis, and captured off the Lizard the greater part of an English convoy of troops and munitions bound for Portugal. His most glorious action was the capture in 1711 of Rio Janeiro, on which he imposed a heavy contribution. In 1715 he was made *chef d'escadre*, the rank which in the French navy answered to the English commodore, and in 1728 commander of the order of St Louis and *lieutenant général des armées navales*. In 1731 he commanded a squadron for the protection of French commerce in the Levant. He died on the 27th of September 1736.

See his own *Mémoires* (1740); and J. Poulain, *Duguay-Trouin* (1882).

DU GUESCLIN, BERTRAND (*c.* 1320-1380), constable of France, the most famous French warrior of his age, was born of an ancient but undistinguished family at the castle of La Motte-Broons (Dinan). The date of his birth is doubtful, the authorities varying between 1311 and 1324. The name is spelt in various ways in contemporary records, *e.g.* Claquin, Klesquin, Guescquin, Glayaquin, &c. The familiar form is found on his monument at St Denis, and in some legal documents of the time. In his boyhood Bertrand was a dull learner, spending his time in open-air sports and exercises, and could never read or write. He was remarkable for ugliness, and was an object of aversion to his parents. He first made himself a name as a soldier at the tournament held at Rennes in 1338 to celebrate the marriage of Charles of Blois with Jeanne de Penthièvre, at which he unseated the most famous competitors. In the war which followed between Charles of Blois and John de Montfort, for the possession of the duchy of Brittany, he served his apprenticeship as a soldier (1341). As he was not a great baron with a body of vassals at his command, he put himself at the head of a band of adventurers, and fought on the side of Charles and of France. He distinguished himself by a brilliant action at the siege of Vannes in 1342; and after that he disappears from history for some years.

In 1354, having shortly before been made a knight, he was sent into England with the lords of Brittany to treat for the ransom of Charles of Blois, who had been defeated and captured by the English in 1347. When Rennes and Dinan were attacked by the duke of Lancaster in 1356, Du Guesclin fought continuously against the English, and at this time he engaged in a celebrated duel with Sir Thomas Canterbury. He finally forced his way with provisions and reinforcements into Rennes, which he successfully defended till June 1357, when the siege was raised in pursuance of the truce of Bordeaux. For this service he was rewarded with the lordship of Pontorson. Shortly afterwards he passed into the service of France, and greatly distinguished himself at the siege of Melun (1359), being, however, taken prisoner a little later by Sir Robert Knollys. In 1360, 1361 and 1362 he was continually in the field, being again made prisoner in 1360. In 1364 he married, but was soon again in the field, this time against the king of Navarre. In May 1364 he won an important victory over the Navarrese at Cocherel, and took the famous Captal de Buch prisoner. He had previously been made lord of La Roche-Tesson (1361) and chamberlain (1364); he was now made count of Longueville and lieutenant of Normandy. Shortly afterwards, in aiding Charles of Blois, Du Guesclin was taken prisoner by Sir John Chandos at the battle of Auray, in which Charles was killed. The close of the general war, however, had released great numbers of mercenaries (the great companies) from control, and, as they began to play the part of brigands in France, it was necessary to get rid of them. Du Guesclin was ransomed for 100,000 crowns, and was charged to lead them out of France. He marched with them into Spain, supported Henry of Trastamara against Pedro the Cruel, set the former upon the throne of Castile (1366), and was made constable of Castile and count of Trastamara. In the following year he was defeated and captured by the Black Prince, ally of Pedro, at Navarette, but was soon released for a heavy ransom. Once more he fought for Henry, won the battle of Montiel (1369), reinstated him on the throne, and was created duke of Molinas.

In May 1370, at the command of Charles V., who named him constable of France, he

returned to France. War had just been declared against England, and Du Guesclin was called to take part in it. For nearly ten years he was engaged in fighting against the English in the south and the west of France, recovering from them the provinces of Poitou, Guienne and Auvergne, and thus powerfully contributing to the establishment of a united France. In 1373, when the duke of Brittany sought English aid against a threatened invasion by Charles V., Du Guesclin was sent at the head of a powerful army to seize the duchy, which he did; and two years later he frustrated the attempt of the duke with an English army to recover it. Finding in 1379 that the king entertained suspicions of his fidelity to him, he resolved to give up his constable's sword and retire to Spain. His resolution was at first proof against remonstrance; but ultimately he received back the sword, and continued in the service of France. In 1380 he was sent into Languedoc to suppress disturbances and brigandage, provoked by the harsh government of the duke of Anjou. His first act was to lay siege to the fortress of Châteauneuf-Randon, but on the eve of its surrender the constable died on the 13th of July 1380. His remains were interred, by order of the king, in the church of St Denis. Du Guesclin lost his first wife in 1371, and married a second in 1373, but he left no legitimate children.

See biography by D.F. Jamison (Charleston, 1863), which was translated into French (1866) by order of Marshal Count Randon, minister of war; also S. Luce, *Histoire de B. du Guesclin* (Paris, 1876).

DUHAMEL, JEAN BAPTISTE (1624-1706), French physicist, was born in 1624 at Vire in Normandy. He studied at Caen and Paris; wrote at eighteen a tract on the *Spherics* of Theodosius of Tripolis; then became an Oratorian priest, and fulfilled with great devotion for ten years (1653-1663) the duties of *curé* at Neuilly-sur-Marne. He was appointed in 1656 almoner to the king, and in 1666 perpetual secretary to the newly founded Academy of Sciences. He died on the 6th of August 1706. He published among other works: *Astronomia physica* (1660) and *De meteoris et fossilibus* (1660), both in dialogue form; *De consensu veteris et novae philosophiae* (1663); *De corporum affectionibus* (1672); *De mente humana* (1673); *Regiae scientiarum Academiae historia*, 1666-1696 (1698), new edition brought down to 1700 (1701); *Institutiones biblicae* (1698); followed by annotated editions of the Psalms (1701), of the Book of Wisdom, &c. (1703), and of the entire Bible in 1705.

DUHAMEL DU MONCEAU, HENRI LOUIS (1700-1782), French botanist and engineer, son of Alexandre Duhamel, lord of Denainvilliers, was born at Paris in 1700. Having been requested by the Academy of Sciences to investigate a disease which was destroying the saffron plant in Gâtinais, he discovered the cause in a parasitical fungus which attached itself to the roots, and this achievement gained him admission to the Academy in 1728. From then until his death he busied himself chiefly with making experiments in vegetable physiology. Having learned from Sir Hans Sloane that madder possesses the property of giving colour to the bones, he fed animals successively on food mixed and unmixed with madder; and he found that their bones in general exhibited concentric strata of red and white, whilst the softer parts showed in the meantime signs of having been progressively extended. From a number of experiments he was led to believe himself able to explain the growth of bones, and to demonstrate a parallel between the manner of their growth and that of trees. Along with the naturalist Buffon, he made numerous experiments on the growth and strength of wood, and experimented also on the growth of the mistletoe, on layer planting, on smut in corn, &c. He was probably the first, in 1736, to distinguish clearly between the alkalis, potash and soda. From the year 1740 he made meteorological observations, and kept records of the influence of the weather on agricultural production. For many years he was inspector-general of marine, and applied his scientific acquirements to the improvement of naval construction. He died at Paris on the 13th of August 1782.

His works are nearly ninety in number, and include many technical handbooks. The principal are:—*Traité des arbres et arbustes qui se cultivent en France en pleine terre*;

Éléments de l'architecture navale; *Traité général des pêches maritimes et fluviatiles*; *Éléments d'agriculture*; *La Physique des arbres*; *Des Semis et plantations des arbres et de leur culture*; *De l'exploitation des bois*; *Traité des arbres fruitiers*.

DÜHRING, EUGEN KARL (1833-1901), German philosopher and political economist, was born on the 12th of January 1833 at Berlin. After a legal education he practised at Berlin as a lawyer till 1859. A weakness of the eyes, ending in total blindness, occasioned his taking up the studies with which his name is now connected. In 1864 he became *docent* of the university of Berlin, but, in consequence of a quarrel with the professoriate, was deprived of his licence to teach in 1874. Among his works are *Kapital und Arbeit* (1865); *Der Wert des Lebens* (1865); *Natürliche Dialektik* (1865); *Kritische Geschichte der Philosophie* (1869); *Kritische Geschichte der allgemeinen Principien der Mechanik* (1872)—one of his most successful works; *Kursus der National- und Sozialökonomie* (1873); *Kursus der Philosophie* (1875), entitled in a later edition *Wirklichkeitsphilosophie; Logik und Wissenschaftstheorie* (1878); *Der Ersatz der Religion durch Vollkommeneres* (1883). He published his autobiography in 1882 under the title *Sache, Leben und Feinde*; the mention of "Feinde" (enemies) is characteristic. Dühring's philosophy claims to be emphatically the philosophy of reality. He is passionate in his denunciation of everything which, like mysticism, tries to veil reality. He is almost Lucretian in his anger against religion which would withdraw the secret of the universe from our direct gaze. His "substitute for religion" is a doctrine in many points akin to Comte and Feuerbach, the former of whom he resembles in his sentimentalism. Dühring's opinions changed considerably after his first appearance as a writer. His earlier work, *Natürliche Dialektik*, in form and matter not the worst of his writings, is entirely in the spirit of the Critical Philosophy. Later, in his movement towards Positivism, he strongly repudiates Kant's separation of phenomenon from noumenon, and affirms that our intellect is capable of grasping the whole reality. This adequacy of thought to things is due to the fact that the universe contains but one reality, *i.e.* matter. It is to matter that we must look for the explanation both of conscious and of physical states. But matter is not, in his system, to be understood with the common meaning, but with a deeper sense as the substratum of all conscious and physical existence; and thus the laws of being are identified with the laws of thought. In this materialistic or quasi-materialistic system Dühring finds room for teleology; the end of Nature, he holds, is the production of a race of conscious beings. From his belief in teleology he is not deterred by the enigma of pain; he is a determined optimist. Pain exists to throw pleasure into conscious relief. In ethics Dühring follows Comte in making sympathy the foundation of morality. In political philosophy he teaches an ethical communism, and attacks the Darwinian principle of struggle for existence. In economics he is best known by his vindication of the American writer H.C. Carey, who attracts him both by his theory of value, which suggests an ultimate harmony of the interests of capitalist and labourer, and also by his doctrine of "national" political economy, which advocates protection on the ground that the morals and culture of a people are promoted by having its whole system of industry complete within its own borders. His patriotism is fervent, but narrow and exclusive. He idolized Frederick the Great, and denounced Jews, Greeks, and the cosmopolitan Goethe. Dühring's clear, incisive writing is disfigured by arrogance and ill-temper, failings which may be extenuated on the ground of his physical affliction. He died in 1901.

See H. Druskowitz, *Eugen Dühring* (Heidelberg, 1888); E. Döll, *Eugen Dühring* (Leipzig, 1892); F. Engels, *Eugen D.'s Umwalzung der Wissenschaft* (3rd ed., Stuttgart, 1894); H. Vaihinger, *Hartmann, Dühring und Lange* (1876).

(H. St.)

DUIGENAN, PATRICK (1735-1816), Irish lawyer and politician, was the son of a Leitrim Roman Catholic farmer named O'Duibhgeannain. Through the tuition of the local Protestant clergyman, who was interested in the boy, he got a scholarship in 1756 at Trinity College, Dublin, and subsequently became a fellow. He was called to the Irish bar in 1767 and

obtained a rich practice. He is remembered, however, mainly as a politician, on account of his opposition to Grattan, his support of the Union, and his violent antagonism to Catholic emancipation. He was elected member for Armagh in the first united parliament, and was a well-known character at Westminster till he died on the 11th of April 1816.

DUIKER (diver), or Duikerbok, the Dutch name of a small S. African antelope, scientifically known as *Cephalophus grimmi*; the popular name alluding to its habit of diving into and threading its way through thick bush. Scientifically the name is extended to include all the members of the African genus *Cephalophus*, which, together with the Indian chousingha, or four-horned antelope (*Tetraceros*), constitutes the subfamily *Cephalophinae*. Duikers are animals of small or medium size, usually frequenting thick forest. The horns, usually present in both sexes, are small and straight, situated far back on the forehead; and between them rises the crest-like tuft of hair from which the genus takes its scientific name. The common or true duiker (*C. grimmi*) is found in bush-country from the Cape to the Zambezi and Nyasaland, and ranges northward on the west coast to Angola. The banded duiker (*C. doriae*) from West Africa is golden brown with black transverse bands on the back and loins. *C. sylvicultor*, of West Africa, is the largest species, and approaches a donkey in size. (See Antelope.)

(R. L.*)

DUILIUS (or Duellius), **GAIUS,** Roman general during the first Carthaginian War and commander in the first Roman naval victory. In 260 B.C., when consul in command of the land forces in Sicily, he was appointed to supersede his colleague Cn. Cornelius Scipio Asina, commander of the fleet, who had been captured in the harbour of Lipara. Recognizing that the only chance of victory lay in fighting under conditions as similar as possible to those of a land engagement, he invented a system of grappling irons (*corvi*) and boarding bridges, and gained a brilliant victory over the Carthaginian fleet off Mylae on the north coast of Sicily. He was accorded a triumph and the distinction of being accompanied, when walking in the streets during the evening, by a torchbearer and a flute-player. A memorial column (*columna rostrata*), adorned with the beaks of the captured ships, was set up in honour of his victory. The inscription upon it (see Latin Language, section 3, “The Language as Recorded”) has been preserved in a restored form in pseudo-archaic language, ascribed to the reign of Claudius.

See *Corpus Inscriptionum Latinarum*, i. No. 195; Polybius i. 22; Diod. Sic. xvii. 44; Frontinus, *Strat.* ii. 3; Florus ii. 2; Cicero, *De senectute*, 13; Silius Italicus vi. 667; and Punic Wars.

DUISBURG, a town of Germany in the kingdom of Prussia, 15 m. by rail N. from Düsseldorf, between the Rhine and the Ruhr, with which rivers it communicates by a canal. It is an important railway centre. Pop. (1885) 47,519; (1900) 92,729; (1905), including many outlying townships then recently incorporated, 191,551. It has six Roman Catholic and six Protestant churches, among the latter the fine Gothic Salvatorkirche, of the 15th century. It is well furnished with schools, which include a school of machinery. Of modern erections, the concert hall, the law courts and a memorial fountain to the cartographer Gerhard Kremer (Mercator) are worthy of mention. There are important foundries, rolling mills for copper, steel and brass plates, chemical works, saw-milling, shipbuilding, tobacco, cotton, sugar, soap and other manufactures.

Duisburg was known to the Romans as *Castrum Deutonis*, and mentioned under the

Frankish kings as *Dispargum*. In the 12th century it attained the rank of an imperial free town, but on being mortgaged in 1290 to Cleves it lost its privileges. At the beginning of the 17th century it was transferred to Brandenburg, and during the Thirty Years' War was alternately occupied by the Spaniards and the Dutch. In 1655 the elector Frederick William of Brandenburg founded here a Protestant university, which flourished until 1802.

DUK-DUK, a secret society of New Britain or New Pomerania, Bismarck Archipelago, in the South Pacific. The society has religious and political as well as social objects. It represents a rough sort of law and order through its presiding spirit Duk-Duk, a mysterious figure dressed in leaves to its waist, with a helmet like a gigantic candle-extinguisher made of network. Upon this figure women and children are forbidden to look. Women, who are entitled in New Britain to their own earnings and work harder than men, are the special victims of Duk-Duk, who levies blackmail upon them if they are about during its visits. These are generally timed to coincide with the hours at which the women are out in the fields and therefore cannot help seeing the figure. Justice is executed, fines extorted, taboos, feasts, taxes and all tribal matters are arranged by the Duk-Duk members, who wear hideous masks or chalk their faces. In carrying out punishments they are allowed to burn houses and even kill people. Only males can belong to Duk-Duk, the entrance fees of which vary from 50 to 100 fathoms of *dewarra* (small cowrie shells strung on strips of cane). The society has its secret signs and ritual, and festivals at which the presence of a stranger would mean his death. Duk-Duk only appears with the full moon. The society is now much discredited and is fast dying out.

See "Duk-Duk and other Customs or Forms of Expression of the Melanesian's Intellectual Life," by Graf von Pfeil (*Journ. of Anthrop. Instit.* vol. 27, p. 181).

DUKE (corresponding to Fr. *duc*, Ital. *duca*, Ger. *Herzog*), the title of one of the highest orders of the European nobility, and of some minor sovereign princes. The word "duke," which is derived from the Lat. *dux*, a leader, or general, through the Fr. *duc* (O. Fr. *dusc*, *ducs*, *dus*), originally signified a leader, and more especially a military chief, and in this latter sense was the equivalent of the A.S. *heretoga* (*here*, an army, and *teon*, from *togen*, to draw; Ger. *ziehen*, *zog*; Goth, *tiuhan*; Lat. *ducere*) and the old Ger. *herizog*. In this general sense the word survived in English literature until the 17th century, but is now obsolete.

The origin of modern dukes is twofold. The *dux* first appears in the Roman empire under the emperor Hadrian, and by the time of the Gordians has already a recognized place in the official hierarchy. He was the general appointed to the command of a particular expedition and his functions were purely military. In the 4th century, after the separation of the civil and military administrations, there was a duke in command of the troops quartered in each of the frontier provinces of the empire, *e.g.* the *dux Britanniarum*. The number of dukes continually increased, and in the 6th and 7th centuries there were *duces* at Rome, Naples, Rimini, Venice and Perugia. Gradually, too, they became charged with civil as well as military functions, and even exercised considerable authority in ecclesiastical administration. Under the Byzantine emperors they were the representatives in all causes of the central power. The Roman title of duke was less dignified than that of count (*comes*, companion) which implied an honourable personal relation to the emperor (see COUNT). Both titles were borrowed by the Merovingian kings for the administrative machinery of the Frank empire, and under them the functions of the duke remained substantially unaltered. He was a great civil and military official, charged to watch, in the interests of the crown, over groups of several *comitatus*, or countships, especially in the border provinces. The sphere of the dukes was never rigidly fixed, and their commission was sometimes permanent, sometimes temporary. Under the Carolingians the functions of the dukes remained substantially the same; but with the decay of the royal power in the 10th century, both dukes and counts gained in local authority; the number of dukes became for the time fixed, and finally title and office were made hereditary, the relation to the crown being

reduced to that of more or less shadowy vassalage. (See Feudalism.)

Side by side with these purely official dukedoms, however, there had continued to exist, or had sprung up, either independently or in more or less of subjection to the Frank rulers, national dukedoms, such as those of the Alemanni, the Aquitanians, and, later, of the Bavarians and Thuringians. These were developed from the early Teutonic custom by which the *herizog* was elected by the nation as leader for a particular campaign, as in the case of the *heretogas* who had led the first Saxon invaders into Britain. Tacitus says of the ancient Germans *reges ex nobilitate, duces ex virtute sumunt*; *i.e.* they elected their dukes for their warlike prowess only, and as purely military chiefs, whereas their kings were chosen from a royal family of divine descent. Sometimes the dukes so chosen succeeded in making their power permanent without taking the style of king. To this national category belong, besides the great German dukedoms, the dukes of Normandy, and the Lombard dukes of Spoleto and Benevento, who traced their origin, not to an administrative office, but to the leadership of Teutonic war bands. With the development of the feudal system the distinction between the official and the national dukedoms was more and more obliterated. By the 13th and 14th centuries the title had become purely territorial, and implied no necessary overlordship over counts and other nobles, who existed side by side with the dukes as tenants-in-chief of the crown. From this time the significance of the ducal title varies widely in different countries. Whenever the crown got the better of the feudal spirit of independence, as in France or Naples, it sank from being a sovereign title to a mere social distinction, implying no political power, and not necessarily any territorial influence. In northern Italy and in Germany, on the other hand, where the crown had proved too weak to combat the forces of disruption, it came ultimately to imply independent sovereignty.

The abolition of the Holy Empire in 1806 removed even the shadow of vassalage from the German reigning dukes, who retain their sovereign status under the new empire. Only one, however, the grand duke of Luxemburg, is now both sovereign and independent. Besides the sovereign dukes in Germany there are certain “mediatized” ducal houses, *e.g.* that of Ratibor, which share with the dispossessed families of the Italian sovereign duchies certain royal privileges, notably that of equality of blood (*Ebenbürtigkeit*). In Italy, where titles of nobility give no precedence at court, that of duke (*duca*) has lost nearly all even of its social significance owing to lavish creations by the popes and minor sovereigns, and to the fact that the title often passes by purchase with a particular estate. Political significance it has none. Some great Italian nobles are dukes, notably the heads of the great Roman ducal families, but not all Italian dukes are great nobles.

In France the title duke at one time implied vast territorial power, as with the dukes of Burgundy, Normandy, Aquitaine and Brittany, who asserted a practical independence against the crown, though it was not till the 12th century that the title duke was definitely regarded as superior to others. At first (in the 10th and 11th centuries) it had no defined significance, and even a baron of the higher nobility called himself in charters duke, count or even marquis, indifferently. In any case the strengthening of the royal power gradually sapped the significance of the title, until on the eve of the Revolution it implied no more than high rank and probably territorial wealth.

There were, under the *ancien régime*, three classes of dukes in France: (1) dukes who were peers (see Peerage) and had a seat in the parlement of Paris; (2) hereditary dukes who were not peers; (3) “brevet” dukes, created for life only. The French duke ranks in Spain with the “grandee” (*q.v.*), and vice versa. In republican France the already existing titles are officially recognized, but they are now no more than the badges of distinguished ancestry. Besides the descendants of the feudal aristocracy there are in France certain ducal families dating from Napoleon I.’s creation of 1806 (*e.g.* ducs d’Albufera, de Montebello, de Feltre), from Louis Philippe (duc d’Isly, and duc d’Audiffret-Pasquier), and from Napoleon III. (Malakoff, Magenta, Morny).

In England the title of duke was unknown till the 14th century, though in Saxon times the title ealdorman, afterwards exchanged for “earl,” was sometimes rendered in Latin as *dux*,[1] and the English kings till John’s time styled themselves dukes of Normandy, and dukes of Aquitaine even later. In 1337 King Edward III. erected the county of Cornwall into a duchy for his son Edward the Black Prince, who was thus the first English duke. The second was Henry, earl of Lancaster, Derby, Lincoln and Leicester, who was created duke of Lancaster in 1351. In Scotland the title of duke was first bestowed in 1398 by Robert III. on his eldest son David, who was made duke of Rothesay, and on his brother, who became duke of Albany.

British dukes rank next to princes and princesses of the blood royal, the two archbishops

of Canterbury and York, the lord Chancellor, &c., but beyond this precedence they have no special privileges which are not shared by peers of lower rank (see PEERAGE). Though their full style as proclaimed by the herald is "most high, potent and noble prince," and they are included in the *Almanach de Gotha*, they are not recognized as the equals in blood of the crowned or mediatized dukes of the continent, and the daughter of an English duke marrying a foreign royal prince can only take his title by courtesy, or where, under the "house-laws" of certain families, a family council sanctions the match. The eldest son of an English duke takes as a rule by courtesy the second title of his father, and ranks, with or without the title, as a marquess. The other sons and daughters bear the titles "Lord" and "Lady" before their Christian names, also by courtesy. A duke in the British peerage, if not royal, is addressed as "Your Grace" and is styled "the Most Noble." (See ARCHDUKE, GRAND DUKE, and, for the ducal coronet, CROWN AND CORONET.)

(W. A. P.)

1 So *Ego Haroldus dux, Ego Tostinus dux*, in a charter of Edward the Confessor (1060), Hist. MSS. Comm. 12th rep. app. pt. ix. p. 581.

DUKE OF EXETER'S DAUGHTER, a nickname applied to a 15th-century instrument of torture resembling the rack (*q.v.*). Blackstone says (*Commentaries*, ii. sec. 326): "The trial by rack is utterly unknown to the law of England, though once when the dukes of Exeter and Suffolk, and other ministers of Henry VI., had laid a design to introduce the civil (*i.e.* Roman) law into the kingdom as the rule of government, for a beginning thereof they erected a rack for torture, which was called in derision the duke of Exeter's daughter, and still remains in the Tower of London, where it was used as an engine of state, not of law, more than once in Queen Elizabeth's reign. But when, upon the assassination of Villiers, duke of Buckingham, by Felton, it was proposed in the privy council to put the assassin to the rack, in order to discover his accomplices, the judges being consulted, declared unanimously that no such proceeding was allowable by the laws of England."

DUKER, CARL ANDREAS (1670-1752), German classical scholar and jurist, was born at Unna in Westphalia. He studied at the university of Franeker under Jacob Perizonius. In 1700 he was appointed teacher of history and eloquence at the Herborn gymnasium, in 1704 vice-principal of the school at the Hague, and in 1716 he succeeded (with Drakenborch as colleague) to the professorship formerly held by Peter Burmann at Utrecht. After eighteen years' tenure he resigned his post, and lived in retirement at Ysselstein and Vianen. His health finally broke down under excessive study, and he died, almost blind, at the house of a relative in Meiderich near Duisburg, on the 5th of November 1752. His chief classical works were editions of Florus (1722) and Thucydides (1731, considered his best). He brought out the 2nd edition of Perizonius's *Origines Babylonicae et Aegyptiacae* (1736) and his commentary on Pomponius Mela (1736-1737). Duker was also an authority on ancient law, and published *Opuscula varia de latinitate veterum jurisconsultorum* (1711), and a revision of the *Leges Atticae* of S. Petit (1741).

See C. Saxe, *Onomasticon litterarium*, vi. 267; articles in *Allgemeine deutsche Biographie* and in Ersch and Gruber's *Allgemeine Encyklopadie*.

DUKERIES, THE, a name given to a district in the N.W. of Nottinghamshire, England; included within the ancient Sherwood Forest (*q.v.*). The name is taken from the existence of several adjacent demesnes of noblemen, and the character of the Forest is to some extent preserved here. On the north is the Sheffield-Retford branch of the Great Central railway,

serving the town of Worksop, connecting at Retford with the Great Northern railway, while on the south the Great Central railway serves the small market town of Ollerton, and connects with the Great Northern at Dukeries Junction. The following demesnes are comprised in the district. Worksop Manor formerly belonged to the dukes of Norfolk. Welbeck Abbey is the seat of the dukes of Portland, to whom it came from the Cavendish family (dukes of Newcastle); the mansion is mainly classic in style, dating from the early 17th century, but with many subsequent additions; the fifth duke of Portland (d. 1879) built the curious series of subterranean corridors and chambers beneath the grounds. Clumber House, the seat of the dukes of Newcastle, is beautifully placed above a lake in a fine park. Thoresby House is the seat of the earls Manvers, to whom it came on the extinction of the dukedom of Kingston; part of this demesne is a splendid tract of wild woodland.

DUKES, LEOPOLD (1810-1891), Hungarian critic of Jewish literature. He spent about twenty years in England, and from his researches in the Bodleian library and the British Museum (which contain two of the most valuable Hebrew libraries in the world) Dukes was able to complete the work of Zunz (*q.v.*). The most popular work of Dukes was his *Rabbinische Blumenlese* (1844), in which he collected the rabbinic proverbs and illustrated them from the gnomic literatures of other peoples. Dukes made many contributions to philology, but his best work was connected with the medieval Hebrew poetry, especially Ibn Gabirol.

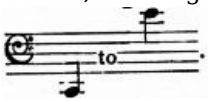
(I. A.)

DUKINFIELD, a municipal borough of Cheshire, England, within the parliamentary borough of Stalybridge, 6 m. E. of Manchester. Pop. (1901) 18,929. It lies in the densely 652
populated district in the north-east of the county, between Stalybridge and Ashton-under-Lyne, and is served by the London & North Western and Great Central railways. There are extensive collieries, and the other industries include cotton manufactures, calico-printing, hat-making, iron-founding, engineering and the manufacture of firebricks and tiles. A portion remains of the old timbered Dukinfield Hall, in the chapel of which Samuel Eaton (d. 1665) taught the first congregational church in the north of England. The chapel, much enlarged, is still used by this denomination. The borough, incorporated in 1899, is under a mayor, 6 aldermen and 18 councillors. Area, 1405 acres.

DULCIGNO (Servian, *Ultsin*, Turk. *Olgun*), a seaport of Montenegro, on the Adriatic Sea, 8 m. W. of the Albanian frontier. Pop. (1900) about 5000. Shut in by hills and forests, and built partly on a promontory overlooking its bay, partly along the shore, Dulcigno is the prettiest of Montenegrin towns. Its narrow crooked lanes, however, with its bazaars, mosques, minarets and veiled women, give to its picturesqueness a decidedly Turkish air. The old quarter, on the promontory, is walled, and has a medieval castle, once of great strength. Turks form the bulk of the inhabitants, although their numbers decreased steadily after 1880, when the population numbered about 8000. Albanians and Italians are fairly numerous. Dulcigno has a Roman Catholic cathedral and an ancient Latin church. The Austrian Lloyd steamers call at intervals, and some shipbuilding and fishing are carried on; but the harbour lacks shelter and is liable to deposits of silt.

To the Romans, who captured it in 167 B.C., Dulcigno was known as *Ulcinium* or *Olcinium*; in the middle ages it was a noted haunt of pirates; in the 17th century it was the residence of Sabbatai Zebi (d. 1676), a Jew who declared himself to be the Messiah but afterwards embraced Islam. In 1718 Dulcigno was the scene of a great Venetian defeat. It belonged to the Turks until 1880, when its cession, according to the terms of the treaty of Berlin (1878),

was enforced by the “Dulcigno demonstration,” in which the fleets of Great Britain, France, Germany, Austria and Russia took part.

DULCIMER (Fr. *tympanon*; Ger. *Hackbrett*, *Cymbal*; Ital. *cembalo*, *timpanon* or *salterio tedesco*), the prototype of the pianoforte, an instrument consisting of a horizontal sound-chest over which are stretched a varying number of wire strings set in vibration by strokes of little sticks or hammers. The dulcimer differed from the psalterium or psaltery chiefly in the manner of playing, the latter having the strings plucked by means of fingers or plectrum. The shape of the dulcimer is a trapeze or truncated triangle, having the bass strings stretched parallel with the base, which measures from 3 to 4 ft.; the strings decrease gradually in length, the shortest measuring from about 18 to 24 in. at the truncated apex. The sound-board has one or two rose sound-holes; the strings are attached on one side to hitch pins and at the other to the larger tuning pins firmly fixed in the wrest plank. The strings of fine brass or iron wire are in groups of two to five unisons to each note; the vibrating lengths of the strings are determined by means of two bridges. The dulcimer is placed upon a table in front of the performer, who strikes the strings with a little hammer mounted on a metal rod and covered on one side with hard and on the other with soft leather for forte and piano effects. The compass, now chromatic throughout, varies according to the size of the instrument; the large cymbalom of the Hungarian gipsies has a range of four chromatic octaves, 

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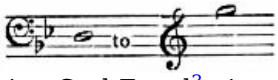
The origin of the dulcimer is remote, and must be sought in the East. In the bas-reliefs from Kuyunjik, now in the British Museum, are to be seen musicians playing on dulcimers of ten strings with long sticks curved at the ends, and damping the strings with their hands. This is the pisantir of the days of Nebuchadrezzar, translated “psaltery” in Dan. iii. 5, &c., and rendered “psalterion” in the Septuagint, a confusion which has given rise to many misconceptions.[1] In the Septuagint no less than four different instruments are rendered *psalterion* (from Gr. ψάλλω, pluck, pull), *i.e. ugab*, *nebel*, *pisantir* and *toph*, two stringed, one wind and one percussion. The use of the word in Greek for a musical instrument is not recorded before the 4th century B.C. The modern santir of the Persians, almost identical with the German hackbrett, has a compass from 

according to Fétis.[2] The Persians place its origin in the highest antiquity. Carl Engel[3] gives an illustration said to be taken from a very old painting.[4]

The dulcimer was extensively used during the middle ages in England, France, Italy, Germany, Holland and Spain, and although it had a distinctive name in each country, it was everywhere regarded as a kind of psalterium. The importance of the method of setting the strings in vibration by means of hammers, and its bearing on the acoustics of the instrument, were recognized only when the invention of the pianoforte had become a matter of history. It was then perceived that the psalterium in which the strings were plucked, and the dulcimer in which they were struck, when provided with keyboards, gave rise to two distinct families of instruments, differing essentially in tone quality, in technique and in capabilities: the evolution of the psalterium stopped at the harpsichord, that of the dulcimer gave us the pianoforte. The dulcimer is described and illustrated by Mersenne,[5] who calls it *psaltérion*; it has thirteen courses of pairs of unisons or octaves; the first strings were of brass wire, the others of steel. The curved stick was allowed to fall gently on to the strings and to rebound many times, which, Mersenne remarks, produces an effect similar to the trembling or tremolo of other instruments. Praetorius[6] figures a hackbrett having a body in the shape of a truncated triangle, with a bridge placed between two rose sound-holes, and played by means of two sticks. Another kind of hackbrett[7] (a psaltery), which was played with the fingers, was known to Praetorius. The pantaleon, a double dulcimer, named after the inventor, Pantaleon Hebenstreit of Eisleben, a violinist, had two sound-boards, 185 strings, one scale of overspun catgut, the other of wire. Hebenstreit travelled to Paris with his monster dulcimer in 1705 and played before Louis XIV., who baptized it *Pantaléon*. Quantz[8] and Quirin of Blankenburg[9] both gave descriptions of the instrument.

(K. S.)

1 The names of the musical instruments in those verses of the Book of Daniel have formed the basis of a controversy as to the authenticity of the book.

2 *Histoire de la musique* (Paris, 1869), vol. ii. p. 131.

3 *Music of the most Ancient Nations* (London, 1864), pp. 42-3.

4 Hommaire de Hell, *Voyage en Perse*, p. lxii.

5 *L'Harmonie universelle* (Paris, 1636), livre iii. p. 174.

6 *Syntagma musicum* (Wolfenbüttel, 1618), pl. 18 (3).

7 Pl. 36 (1).

8 "Herrn Joh. Joachim Quantzens Lebenslauf von ihm selbst entworfen," in Fr. W. Marpurg's *Histor. kritische Beytrage*, Bd. i p. 207 (1754-1755).

9 *Elementa musica*, chap. xxvi.

DÜLKEN, a town of Germany, in the Prussian Rhine Province, 11 m. by rail S.W. from Crefeld. Pop. 10,000. It has a (Roman Catholic) Gothic parish church. There are manufactures of linen, cotton, silk and velvet, &c., ironworks and foundries.

DULONG, PIERRE LOUIS (1785-1838), French chemist and physicist, was born at Rouen on the 12th (or 13th) of February 1785. He began as a doctor in one of the poorest districts of Paris, but soon abandoned medicine for scientific research. After acting as assistant to Berthollet, he became successively professor of chemistry at the faculty of sciences and the normal and veterinary schools at Alfort, and then (1820) professor of physics at the École Polytechnique, of which he was appointed director in 1830. He died in Paris on the 18th (or 19th) of July 1838. His earliest work was chemical in character. In 1811 he discovered chloride of nitrogen; during his experiments serious explosions occurred twice, and he lost one eye, besides sustaining severe injuries to his hand. He also investigated the oxygen compounds of phosphorus and nitrogen, and was one of the first to hold the hydrogen theory of acids. In 1815, in conjunction with Alexis Thérèse Petit (1791-1820), the professor of physics at the École Polytechnique, he made careful comparisons between the mercury and the air thermometer. The first published research (1816) dealt with the dilatation of solids, liquids and gases and with the exact measurement of temperature, and it was followed by another in 1818 on the measurement of temperature and the communication of heat, which was crowned by the French Academy. In a third, "On some important points in the theory of heat" (1819), they stated that the specific heats of thirteen solid elements which they had investigated were nearly proportional to their atomic weights—a fact otherwise expressed in the "law of Dulong and Petit" that the atoms of simple substances have equal capacities for heat. Subsequent papers by Dulong were concerned with "New determinations of the proportions of water and the density of certain elastic fluids" (1820, with Berzelius); the property possessed by certain metals of facilitating the combination of gases (1823 with Thénard); the refracting powers of gases (1826); and the specific heats of gases (1829). In 1830 he published a research, undertaken with Arago for the academy of sciences, on the elastic force of steam at high temperatures. For the purposes of this determination he set up a continuous column of mercury, constructed with 13 sections of glass tube each 2 metres long and 5 mm. in diameter, in the tower of the old church of St Geneviève in the Collège Henri IV. The apparatus was first used to investigate the variation in the volume of air with pressure, and the conclusion was that up to twenty-seven atmospheres, the highest pressure attained in the experiments, Boyle's law holds good. In regard to steam, the old tower was so shaky that it was considered unwise to risk the effects of an explosion, and therefore the mercury column was removed bodily to a court in the observatory. The original intention was to push the experiments to a pressure equivalent to thirty atmospheres, but owing to the signs of failure exhibited by the boiler the limit actually reached was twenty-four atmospheres, at which pressure the thermometers indicated a temperature of about 224°C.

In his last paper, published posthumously in 1838, Dulong gave an account of experiments made to determine the heat disengaged in the combination of various simple and compound bodies, together with a description of the calorimeter he employed.

DULSE (Ir. and Gael. *duileasg*), in botany, *Rhodymenia palmata*, one of the red seaweeds, consisting of flat solitary or tufted purplish-red fronds, fan-shaped in general outline and divided into numerous segments, which are often again and again divided in a forked manner. It varies very much in size and degree of branching, ranging from 5 or 6 to 12 or more inches long. It grows on rocks, shell-fish or larger seaweeds, and is used by the poor in Scotland and Ireland as a relish with their food. It is commonly dried and eaten raw, the flavour being brought out by long chewing. In the Mediterranean it is used cooked in ragouts and made dishes.

See W.H. Harvey, *Phycologica Britannica*, vol. ii. plates 217, 218.

DULUTH, a city and the county-seat of St Louis county, Minnesota, U.S.A., at the W. end of Lake Superior, at the mouth of the St Louis river, about 150 m. N.E. of Minneapolis and St Paul. Pop. (1880) 3483; (1890) 33,115; (1900) 52,969, of whom 20,983 were foreign-born and 357 were negroes; (1910 census) 78,466. Of the 20,983 foreign-born in 1900, 5099 were English-Canadians, 5047 Swedes, 2655 Norwegians, 1685 Germans, and 1285 French-Canadians. Duluth is served by the Duluth and Iron Range, the Duluth, Missabe & Northern, the Duluth, South Shore & Atlantic, the Chicago & North-Western (the North-Western line), the Great Northern, and the Northern Pacific railways. Situated attractively on the side and along the base of a high bluff rising 600 ft. above the lake level, Duluth lies at the W. end of Superior Bay (here called Duluth Harbour), directly opposite the city of Superior, Wisconsin. A narrow strip of land known as Minnesota Point, 7 m. in length and extending toward Wisconsin Point, which projects from the Wisconsin shore, separates the bay from the lake and forms with St Louis Bay one of the finest natural harbours in the world. The natural entrance to the harbour is the narrow channel between the two points, but there is also a ship-canal across Minnesota Point, spanned by a curious aerial bridge 400 ft. long and 186 ft. above the water.

The unusually favourable position for lake transportation, and the extensive tributary region in the N.W., with ample rail connexions, make Duluth-Superior one of the greatest commercial ports in the country. The two cities constitute the largest coal-distributing centre in the N.W., and have some of the largest coal-docks in the world. Upwards of twenty grain elevators, with a net capacity of nearly 35,000,000 bushels, which receive enormous quantities of grain from the Red River Valley, Manitoba, and the Dakotas, either for home manufacture or for transhipment to the East, are among the noteworthy sights of the place; and extensive ore-docks are required for handling the enormous and steadily increasing shipments of iron ore from the rich Vermilion and Mesabi iron ranges first opened about 1890. In 1907 more than 29,000,000 tons of iron ore were shipped from this port. Duluth is also an important hay market. There are flour and lumber mills, foundries and machine shops, wooden ware, cooperage, sash, door and blind, lath and shingle factories, and shipyards. In 1909 great mills of the Minnesota Steel Co. were begun here. In 1905 the factory product of Duluth was valued at $10,139,009, an increase of 29.8% over that of 1900. The St Louis river furnishes one of the finest water-powers in the United States.

The commanding heights upon which the principal residential section of the city is built render it at once attractive in appearance and healthful; there is a fine system of parks and boulevards, the chief of the former being Lester, Fairmount, Portland, Cascade, Lincoln and Chester. The popular Boulevard drive at the back of Duluth commands excellent views of city and lake. Among the principal buildings are the court house, the Masonic temple, chamber of commerce, board of trade, Lyceum theatre, Federal, Providence, Lonsdale, Torrey, Alworth, Sellwood and Wolvin buildings, St. Mary’s hospital, St. Luke’s hospital and Spalding Hotel. There is a public (Carnegie) library with 50,000 volumes in 1908. The

building of the central high school (classical), one of the finest in the United States, erected at a cost of about $500,000, has a square clock tower 230 ft. high, and an auditorium seating 2000. The city also has a technical high school, and in addition to the regular high school courses there are departments of business, manual training and domestic science. At Duluth also is a state normal school, erected in 1902. The federal government maintains here a life-saving station on Minnesota Point, and an extensive fish hatchery.

The first Europeans to visit the site of Duluth were probably French *coureurs-des-bois*, possibly the adventurous Radisson and Groseilliers. The first visitor certainly known to have been here was Daniel Greysolon, Sieur Du Lhut (d. 1709), a French trader and explorer, who about 1678 skirted Lake Superior and built a stockaded trading-post at the mouth of Pigeon river on the N. shore. From him the place received its name. A trading-post was established near the present city, at Fond du Lac, about 1752, and this eventually became a depôt of Astor's American Fur Company. There was no permanent settlement at Duluth proper, however, until 1853, and in 1860 there were only 80 inhabitants. Incorporated in 1870, in which year railway connexion with the South was established, its growth was slow for some years, the increase for the decade 1870-1880 being very slight (from 3131 to 3483); but the extension of railways into the north-western wheat region, the opening up of Lake Superior to commerce, and finally the development of the Vermilion and Mesabi iron ranges, brought on a period of almost unparalleled growth, marked by the remarkable increase in population of more than 850% between 1880 and 1890; between 1890 and 1900 the increase was 60%.

See J.R. Carey, *History of Duluth and Northern Minnesota* (Duluth, 1898); Leggett and Chipman, *Duluth and its Environs* (Duluth, 1895); and J.D. Ensign, *History of St Louis County* (Duluth, 1900).

DULWICH, a district in the metropolitan borough of Camberwell, London, England. The manor, which had belonged to the Cluniac monks of Bermondsey, passed through various hands to Edward Alleyn (*q.v.*) in 1606. His foundation of the College of God's Gift, commonly called Dulwich College, was opened with great state on the 13th of September 1619, in the presence of Lord Chancellor Bacon, Lord Arundell, Inigo Jones and other distinguished men. According to the letters patent the almspeople and scholars were to be chosen in equal proportions from the parishes of St Giles (Camberwell), St Botolph without Bishopsgate, and St Saviour's (Southwark), and "that part of the parish of St Giles without Cripplegate which is in the county of Middlesex." By a series of statutes signed in 1626, a few days before his death, Alleyn ordained that his school should be for the instruction of 80 boys consisting of three distinct classes:— (1) the twelve poor scholars; (2) children of inhabitants of Dulwich, who were to be taught freely; and (3) "towne or foreign schollers," who were "to pay such allowance as the master and wardens shall appoint." The almspeople consisted of six "poor brethren" and six "poor sisters," and the teaching and governing staff of a master and a warden, who were always to be of the founder's surname, and four fellows, all "graduates and divines," among whom were apportioned the ministerial work of the chapel, the instruction of the boys, and the supervision of the almspeople. That it was the founder's intention to establish a great public school upon the model of Westminster and St Paul's, with provision for university training, is shown by the statutes; but for more than two centuries the educational benefits of God's Gift College were restricted to the twelve poor scholars. Successive actions at law resulted in the ruling that it was not within the competence of the founder to divert any portion of the revenues of his foundation to the use of others than the members thereof, as specified in the letters patent. In 1842, however, some effort was made towards the realization of Alleyn's schemes, and in 1858 the foundation was entirely reconstituted by act of parliament. It comprises two schools, the "Upper" and the "Lower," now called respectively Dulwich College and Alleyn's school. In the Upper school, now one of the important English "public schools," there are classical, modern, science and engineering sides. The Lower school is devoted to middle-class education. The buildings of the Upper school, by Charles Barry, contain a fine hall. The college possesses a splendid picture gallery, bequeathed by Sir P.F. Bourgeois, R.A., in 1811, with a separate endowment. The pictures include some exquisite Murillos and choice specimens of the Dutch school. The surplus income of the gallery fund is devoted to instruction in drawing and design in the two schools.

See W.H. Blanch, *Dulwich College and Edward Alleyn* (London, 1877); R. Hovenden, *The*

History of Dulwich College, with a short biography of its founder (London, 1873).

DUMAGUETE, the capital town of the province of Negros Oriental, island of Negros, Philippine Islands, on Tañón Strait. Pop. (1903) 14,894. The town of Sibulan (pop. in 1903, 8413) was annexed to Dumaguete in 1903, after the census had been taken. Dumaguete lies in the midst of a fertile agricultural district. The inhabitants are chiefly natives, but the shops are kept by Chinese merchants. The public buildings, which include an interesting watch-tower and belfry, are large, substantial and well cared for.

DUMANJUG, a town of the province of Cebú, island of Cebú, Philippine Islands, on the W. coast, at the mouth of the Dumanjug river, about 40 m. S.W. of the town of Cebú. Pop. (1903) 22,203. In 1903, after the census had been taken, the adjacent town of Ronda (pop. 9662) was annexed to Dumanjug. Dumanjug is in communication with the town of Sibonga, on the opposite shore of one of the few passes through the mountains of the interior. Indian corn and sugar-cane are grown successfully in the neighbouring country, and the town has an important coast trade.

DU MARSAIS, CÉSAR CHESNEAU, Sieur (1676-1756), French philologist, was born at Marseilles on the 17th of July 1676. He was educated in his native town by the Fathers of the Oratory, into whose congregation he entered; but he left it at the age of twenty-five and went to Paris, where he married and was admitted an advocate (1704). He was tutor to the sons successively of the président de Maisons, of John Law, the projector, and of the marquis de Bauffremont. He then opened a boarding school in the faubourg St Victor, which scarcely afforded him the means of subsistence. He made contributions of great value on philological and philosophical subjects to the *Encyclopédie*, and after vain attempts to secure a competence from the court he was insured against want by the generosity of a private patron. He died in Paris on the 11th of June 1756. The researches of Du Marsais are distinguished by considerable individuality. He held sensible views on education and elaborated a system of teaching Latin, which, although open to grave criticism, was a useful protest against current methods of teaching. His best works are his *Principes de grammaire* and his *Des tropes, ou des différents sens dans lesquels on peut prendre un mot* (1730).

An edition of his works (7 vols.) was collected by Duchosal and Millon, and was published with an éloge on Du Marsais by D'Alembert at Paris in 1797.

DUMAS, ALEXANDRE [Alexandre Davy de la Pailleterie] (1802-1870), French novelist and dramatist, was born at Villers-Cotterets (Aisne) on the 24th of July 1802. His father, the French general, Thomas Alexandre Dumas (1762-1806)—also known as Alexandre Davy de la Pailleterie—was born in Saint Domingo, the natural son of Antoine Alexandre Davy, marquis de la Pailleterie, by a negress, Marie Cessette Dumas, who died in 1772. In 1780 he accompanied the marquis to France, and there the father made a mésalliance which drove the son into enlisting in a dragoon regiment. Thomas Alexandre Dumas was still a private at the outbreak of the revolution, but he rose rapidly and became general of division in 1793. He was general-in-chief of the army of the western Pyrenees, and was transferred later to commands in the Alps and in La Vendée. Among his many exploits was the defeat of the

Austrians at the bridge of Clausen on the 22nd of April 1797, where he commanded Joubert's cavalry. He lost Napoleon's favour by plain speaking in the Egyptian campaign, and presently returned to France to spend the rest of his days in retirement at Villers Cotterets, where he had married in 1792 Marie Élisabeth Labouret.

The novelist, who was the offspring of this union, was not four years old when General Dumas died, leaving his family with no further resource than 30 acres of land. Mme Dumas tried to obtain help from Napoleon, but in vain, and lived with her parents in narrow circumstances. Alexandre received the rudiments of education from a priest, and entered the office of a local solicitor. His chief friend was Adolphe de Leuven, the son of an exiled Swedish nobleman implicated in the assassination of Gustavus III. of Sweden, and the two collaborated in various vaudevilles and other pieces which never saw the footlights. Leuven returned to Paris, and Dumas was sent to the office of a solicitor at Crépy. When in 1823 Dumas contrived to visit his friend in Paris, he was received to his great delight by Talma. He returned home only to break with his employer, and to arrange to seek his fortune in Paris, where he sought help without success from his father's old friends. An introduction to the deputy of his department, General Foy, procured for him, however, a place as clerk in the service of the duke of Orleans at a salary of 1200 francs. He set to work to rectify his lack of education and to collaborate with Leuven in the production of vaudevilles and melodramas. Madame Dumas presently joined her son in Paris, where she died in 1838.

Soon after his arrival in Paris Dumas had entered on a liaison with a dressmaker, Marie Catherine Labay, and their son, the famous Alexandre Dumas *fils* (see below), was born in 1824. Dumas acknowledged his son in 1831, and obtained the custody of him after a lawsuit with the mother.

The first piece by Dumas and Leuven to see the footlights was *La Chasse et l'amour* (Ambigu-Comique, 22nd of Sept. 1825), and in this they had help from other writers. Dumas had a share in another vaudeville, *La Noce et l'enterrement* (Porte Saint-Martin, 21st of Nov. 1826). It was under the influence of the Shakespeare plays produced in Paris by Charles Kemble, Harriet Smithson (afterwards Mme Berlioz) and an English company that 655
the romantic drama of *Christine* was written. The subject was suggested by a bas relief of the murder of Monaldeschi exhibited at the Salon of 1827. The piece was accepted by Baron Taylor and the members of the Comédie Française with the stipulation that it should be subject to revision by another dramatist because of its innovating tendencies. But the production of the piece was deferred. Meanwhile Dumas had met with the story of the ill-fated Saint-Mégrin and the duchess of Guise in Anquetil's history, and had written, in prose, *Henri III. et sa cour*, which was immediately accepted by the Comédie Française and produced on the 11th of February 1829. It was the first great triumph of the romantic drama. The brilliant stagecraft of the piece and its admirable historical setting delighted an audience accustomed to the decadent classical tragedy, and brought him the friendship of Hugo[1] and Vigny. His literary efforts had met with marked disapproval from his official superiors, and he had been compelled to resign his clerkship before the production of *Henri III.* The duke of Orleans had, however, been present at the performance, and appointed him assistant-librarian at the Palais Royal. *Christine* was now recast as a romantic trilogy in verse in five acts with a prologue and epilogue, with the sub-title of *Stockholm*, *Fontainebleau*, *Rome*, and was successfully produced by Harel at the Odéon in March 1830.

The revolution of 1830 temporarily diverted Dumas from letters. The account of his exploits should be read in his *Mémoires*, where, though the incidents are true in the main, they lose nothing in the telling. During the fighting in Paris he attracted the attention of La Fayette, who sent him to Soissons to secure powder. With the help of some inhabitants he compelled the governor to hand over the magazine, and on his return to Paris was sent by La Fayette on a mission to raise a national guard in La Vendée. The advice he gave to Louis Philippe on this subject was ill-received, and after giving offence by further indiscretions he finally alienated himself from the Orleans government by being implicated in the disturbances which attended the funeral of General Lamarque in June 1832, and he received a hint that his absence from France was desirable. A tour in Switzerland undertaken on this account furnished material for the first of a long series of amusing books of travel. Dumas remained, however, on friendly and even affectionate terms with the young duke of Orleans until his death in 1842.

Meanwhile he had produced *Napoléon Bonaparte* (Odéon, 10th of Jan 1831), his unwillingness to make a hero of the man who had slighted his father having been overcome by Harel, who put him under lock and key until the piece was finished. His next play, *Antony*, had a real importance in the history of the romantic theatre. It was put in rehearsal by Mlle Mars, but so unsatisfactorily that Dumas transferred it to Bocage and Mme Dorval,

who played it magnificently at the Porte Saint-Martin theatre on the 3rd of May 1831. The Byronic hero Antony was a portrait of himself in his relations with Mme Mélanie Waldor, the wife of an officer, and daughter of the journalist M.G.T. de Villenave, except of course in the extravagantly melodramatic *dénouement*, when Antony, to save his mistress's honour, kills her and exclaims, "Elle me résistait, je l'ai assassinée." He produced more than twenty more plays alone or in collaboration before 1845, exclusive of dramatizations from his novels. *Richard Darlington* (Porte Saint Martin, 10th of Dec 1831), the first idea of which was drawn from Sir Walter Scott's *Chronicles of the Canongate*, owed part of its great success to the admirable acting of Frédérick Lemaître. *La Tour de Nesle* (Porte Saint-Martin, 29th of May 1832), announced as by MM. × × × and Gaillardet, was the occasion of a duel and a law-suit with the original author, Frédéric Gaillardet, whose MS. had been revised, first by Jules Janin and then by Dumas. In rapidity of movement, and in the terror it inspired, the piece surpassed *Henri III.* and *Antony*. A lighter drama, *Mademoiselle de Belle-Isle* (Théâtre Français, 2nd of April 1839), still remains in the repertory.

In 1840 Dumas married Ida Ferrier, an actress whom he had imposed on the theatres that took his pieces. The amiable relations which had subsisted between them for eight years were disturbed by the marriage, which is said to have been undertaken in consequence of a strong hint from the duke of Orleans, and Mme Dumas lived in Italy separated from her husband.

As a novelist Dumas began by writing short stories, but his happy collaboration with Auguste Maquet,[2] which began in 1839, led to the admirable series of historical novels in which he proposed to reconstruct the whole course of French history. In 1844 he produced, with Maquet's help, that most famous of "cloak and sword" romances, *Les Trois Mousquetaires* (8 vols.), the material for which was discovered in the *Mémoires de M. d'Artagnan* (Cologne, 1701-1702) of Courtils de Sandras. The adventures of d'Artagnan and the three musketeers, the gigantic Porthos, the clever Aramis, and the melancholy Athos, who unite to defend the honour of Anne of Austria against Richelieu and the machinations of "Milady," are brought down to the murder of Buckingham in 1629. Their admirers were gratified by two sequels, *Vingt ans après* (10 vols., 1845) and *Dix ans plus tard, ou le vicomte de Bragelonne* (26 pts., 1848-1850), which opens in 1660, showing us a mature d'Artagnan, a respectable captain of musketeers, and contains the magnificent account of the heroic death of Porthos. The three musketeers are as famous in England as in France. Thackeray could read about Athos from sunrise to sunset with the utmost contentment of mind, and R.L. Stevenson and Andrew Lang have paid tribute to the band in *Memories and Portraits* and *Letters to Dead Authors*. Before 1844 was out Dumas had completed a second great romance in 12 volumes, *Le Comte de Monte-Cristo*, in which he had help from Fiorentino as well as from Maquet. The idea of the intrigue was suggested by Peuchet's *Police dévoilée*, and the stress laid on the earlier incidents, Dantès, Danglars and the Château d'If, is said to have been an afterthought. Almost as famous as these two romances is the set of Valois novels of which Henri IV. is the central figure, beginning with *La Reine Margot* (6 vols., 1845), which contains the history of the struggle between Catherine of Medicis and Henry of Navarre; the history of the reign of Henry III. is told in *La Dame de Monsoreau* (8 vols., 1846), generally known in English as *Chicot the Jester*, from its principal character; and in *Les Quarante-cinq* (10 vols., 1847-1848), in which Diane de Monsoreau avenges herself on the duke of Anjou for the death of her former lover, Bussy d'Amboise.

Much has been written about the exact share which Dumas had in the novels which bear his name. The Dumas-Maquet series is undoubtedly the best, but Maquet alone never accomplished anything to approach them in value. The MSS. of the novels still exist in Dumas's handwriting, and the best of them bear the unmistakable stamp of his unrivalled skill as a narrator. The chief key to his enormous output is to be found in his untiring industry and amazing fertility of invention, not in the system of wholesale collaboration which was exposed with much exaggeration by Quérard in his *Supercheries littéraires* and by "Eugène de Mirecourt" (C.B.J. Jacquot) in his misleading *Fabrique de romans, maison Alexandre Dumas et c^ie^* (1845). His assistants, in fact, supplied him with outlines of romances on plans drawn up by himself, and he then rewrote the whole thing. That this method was never abused it would be impossible to say; *Les Deux Diane*, for instance, a prelude to the Valois novels, is said to have been written entirely by Paul Meurice, although Dumas's name appears on the title-page.

The latter part of Dumas's life is a record of excessive toil to meet prodigal expenditure and accumulated debts. His disasters began with the building of a house in the Renaissance style, with a Gothic pavilion and an "English" park, at Saint Germain-en-Laye. This place,

called Monte-Cristo, was governed by a crowd of hangers-on of both sexes, who absorbed Dumas's large earnings and left him penniless. Dumas also founded the Théâtre Historique chiefly for the performance of his own works. The enterprise was under the patronage of the duc de Montpensier, and was under the management of Hippolyte Hostein, who had been the secretary of the Comédie Française. The theatre was opened in February 1847 with a dramatic version of *La Reine Margot*. Meanwhile Dumas had been the guest of the duc de Montpensier at Madrid, and made a quasi-official tour to Algeria and Tunis in a government vessel, which caused much comment in the press. Dumas had never changed his republican opinions. He greeted the revolution of 1848 with delight, and was even a candidate for electoral honours in the department of the Yonne. But the change was fatal to his theatrical enterprise, for the failure of which in 1850 he was made financially responsible. His son, Alexandre Dumas, was at that time living with his mother Mlle Labay, who was eventually reconciled with the elder Dumas. Father and son, though always on affectionate terms when they met, were too different in their ideas to see much of one another. After the *coup d'état* of 1851 Dumas crossed the frontier to Brussels, and two years of rapid production, and the economy of his secretary, Noël Parfait, restored something like order to his affairs. On his return to Paris in the end of 1853 he established a daily paper, *Le Mousquetaire*, for the criticism of art and letters. It was chiefly written by Dumas, whose *Mémoires* first appeared in it, and survived until 1857, when it was succeeded by a weekly paper, the *Monte-Cristo* (1857-1860). In 1858 Dumas travelled through Russia to the Caucasus, and in 1860 he joined Garibaldi in Sicily. After an expedition to Marseilles in search of arms for the insurgents, he returned to Naples, where Garibaldi nominated him keeper of the museums. After four years' residence in Naples he returned to Paris, and after the war of '66 he visited the battlefields and produced his story of *La Terreur prussienne*. But his powers were beginning to fail, and in spite of the 1200 volumes which he told Napoleon he had written, he was at the mercy of his creditors, and of the succession of theatrical ladies who tyrannized over him and feared nothing except the occasional visits of Dumas *fils*. He was finally rescued from these by his daughter, Mme Petel, who came to live with him in 1868; and two years later, on the 5th of December 1870, he died in his son's house at Puys, near Dieppe.

Dumas was never an actual candidate for academic honours, but he had more than once taken steps to investigate his chances of success. A statue of him was erected on the Place Malesherbes, Paris, in 1883, and the figure of d'Artagnan finds a place on the pedestal.

Auguste Maquet was Dumas's chief collaborator. Others were Paul Lacroix (the bibliophile "P.L. Jacob"), Paul Bocage, J.P. Mallefille and P.A. Fiorentino. The novels of Dumas may be conveniently arranged in a historical sequence. The Valois novels and the musqueteers series brought French history down to 1672. Contributions to later history are:—*La Dame de volupté* (2 vols., 1864), being the memoirs of Mme de Luynes, and its sequel *Les Deux Reines* (2 vols., 1864); *La Tulipe noire* (3 vols., 1850), giving the history of the brothers de Witt; *Le Chevalier d'Harmental* (4 vols., 1853), and *Une Fille du régent* (4 vols., 1845), the story of two plots against the regent, the duke of Orleans; two books on Mme du Deffand, *Mémoires d'une aveugle* (8 vols., 1856-1857) and *Les Confessions de la marquise* (8 vols., 1857), both of doubtful authorship; *Olympe de Clèves* (9 vols., 1852), the story of an actress and a young Jesuit novice in the reign of Louis XV., one of his most popular novels; five books on the beginning of the Revolution down to the execution of Marie Antoinette: the *Mémoires d'un médecin*, including *Joseph Balsamo* (19 pts., 1846-1848), in which J.J. Rousseau, Mme du Barry and the dauphiness Marie Antoinette figure, with its sequels; *Le Collier de la reine* (9 vols., 1849-1850), in which Balsamo appears under the alias of Cagliostro; *Ange Pitou* (8 vols., 1852), known in English as "The Taking of the Bastille"; *La Comtesse de Charny* (19 vols., 1853-1855), describing the attempts to save the monarchy and the flight to Varennes; and *Le Chevalier de maison rouge* (6 vols., 1846), which opens in 1793 with the hero's attempt to save the queen. Among the numerous novels dealing with the later revolutionary period are:—*Les Blancs et les bleus* (3 vols., 1868) and *Les Compagnons de Jéhu* (7 vols., 1857). *Les Louves de Machecoul* (10 vols., 1859) deals with the rising in 1832 in La Vendée. Other famous stories are:—*Les Frères corses* (2 vols., 1845); *La Femme au collier de velours* (2 vols., 1851); *Les Mohicans de Paris* (19 vols., 1854-1855), detective stories with which may be classed the series of *Crimes célèbres* (8 vols., 1839-1841), which are, however, of doubtful authorship; *La San Félice* (9 vols., 1864-1865), in which Lady Hamilton played a prominent part, with its sequels *Emma Lyonna* and *Souvenirs d'une favorite*. Of his numerous historical works other than fiction the most important is his *Louis XIV et son siècle* (4 vols., 1845). *Mes Mémoires* (20 vols., 1852-1854; Eng. trans. of selections by A.F. Davidson, 2 vols., 1891) is an account of his father and of his own life down to 1832. There are collective editions of his plays (6 vols., 1834-1836, and

15 vols., 1863-1874), but of the 91 pieces for which he was wholly or partially responsible, 24 do not appear in these collections.

The complete works of Dumas were issued by Michel Lévy *frères* in 277 volumes (1860-1884). The more important novels have been frequently translated into English. There is a long list of writings on his life and his works both in English and French. The more important French authorities are: his own memoirs, already cited; C. Glinel, *Alexandre Dumas et son œuvre* (Reims, 1884); H. Parigot, *Dumas père* (Grands écrivains français series, 1902), and *Le Drame d'Alexandre Dumas* (1899); H. Blaze de Bury, *Alexandre Dumas* (1885); Philibert Andebrand, *Alexandre Dumas à la maison d'or* (1888); G. Ferry, *Dernières Années d'Alexandre Dumas* (1883); and L.H. Lecomte, *Alexandre Dumas* (1904). Of the English lives of Dumas perhaps the best is that by Arthur F. Davidson, *Alexandre Dumas Père, his Life and Works* (1902), which contains an extensive bibliography. See also lives by P. Fitzgerald (2 vols., 1873) and H.A. Spurr (1902), and essays by Andrew Lang (*Letters to Dead Authors*), Brander Matthews (*French Dramatists*), R.L. Stevenson (*Memories and Portraits*).

(M. Br.)

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1 His friendship with Victor Hugo was interrupted in 1833-1834 by the articles contributed to the *Journal des débats* by a friend and protégé of the poet, Granier de Cassagnac, who brought against Dumas charges of wholesale plagiarism from other dramatists.

2 The details of this collaboration were brought to light in a suit brought against Dumas by Maquet with regard to his share in the profits. See the *Gazette des tribunaux* (January 21, 22, 28, and February 4, 1858).

DUMAS, ALEXANDRE ["Dumas *Fils*"] (1824-1895), French dramatist and novelist, was born in Paris on the 27th of July 1824, the natural son of Alexandre Dumas (see above) and the dressmaker Marie Labay. His father at that date was still a humble clerk and not much more than a boy. "Happily," writes the son, "my mother was a good woman, and worked hard to bring me up"; while of his father he says, "by a most lucky chance he happened to be well-natured," and "as soon as his first successes as a dramatist" enabled him to do so, "recognized me and gave me his name." Nevertheless, the lad's earlier school-life was made bitter by his illegitimacy. The cruel taunts and malevolence of his companions rankled through life (see preface to *La Femme de Claude* and *L'Affaire Clémenceau*), and left indelible marks on his character and thoughts. Nor was his paternity, however distinguished, without peril. Alexandre the younger and elder saw life together very thoroughly, and Paris can have had few mysteries for them. Suddenly the son, who had been led to regard his prodigal father's resources as inexhaustible, was rudely undeceived. Coffers were empty, and he had accumulated debts to the amount of two thousand pounds.

Thereupon he pulled himself together. To a son of Dumas the use of the pen came naturally. Like most clever young writers—and report speaks of him as specially brilliant at that time—he opened with a book of verse, *Péchés de jeunesse* (1847). It was succeeded in 1848 by a novel, *La Dame aux camélias*, a sort of reflection of the world in which he had been living. The book had considerable success, and was followed, in fairly quick succession, by *Le Roman d'une femme* (1848) and *Diane de Lys* (1851). All this, however, did not deliver him from the load of debt, which, as he tells us, remained odious. In 1849 he dramatized *La Dame aux camélias*, but for various reasons, the rigour of the censorship being the most important, it was not till the 2nd of February 1852, and then only by the intervention of Napoleon's all-powerful minister, Morny, that the play could be produced at the Vaudeville. It succeeded then, and has held the stage ever since, less perhaps from inherent superiority to other plays which have foundered than to the great opportunities it affords to any actress of genius.

Thenceforward Dumas's career was that of a brilliant and prosperous dramatist. *Diane de Lys* (1853), *Le Demi-Monde* (1855), *La Question d'argent* (1857), *Le Fils naturel* (1858), *Le Père prodigue* (1859) followed rapidly. Debts became a thing of the past, and Dumas a wealthy man. The didactic habit was always strong upon him. "Alexandre loves preaching overmuch," wrote his father; and in most of his plays he assumes the attitude of a rigid and uncompromising moralist commissioned to impart to a heedless world lessons of deep import. The lessons themselves are mostly concerned with the "eternal feminine," by which Dumas was haunted, and differ in ethical value. Thus in *Les Idées de Madame Aubray* (1867)

he inculcates the duty of the seducer to marry the woman he has seduced; but in *La Femme de Claude* (1873) he argues the right of the husband to take the law into his own hand and kill the wife who is unfaithful and worthless—a thesis again defended in his novel, *L'Affaire Clémenceau*, and in his pamphlet, *L'Homme-femme*; while in *Diane de Lys* he had taught that the betrayed husband was entitled to kill—not in a duel, but summarily—the man who had taken his honour; and in *L'Étrangère* (1876) the bad husband is the victim. Nor did he preach only in his plays. He preached in voluminous introductions, and pamphlets not a few. And when, in 1870 and 1872, France was going through bitter hours of humiliation, he called her to repentance and amendment in a *Nouvelle Lettre de Junius* and two *Lettres sur les choses du jour*.

As a moralist Dumas *fils* took himself very seriously indeed. As a dramatist, didacticism apart, he had great gifts. He knew his business thoroughly, possessed the art of situation, interest, crisis—could create characters that were real and alive. His dialogue also is admirable, the repartee rapier-like, the wit most keen. He was singularly happy, too, in his dramatic interpreters. The cast of *L'Étrangère*, for instance, comprised Sarah Bernhardt, Sophie Croizette, Madeleine Brohan, in the female characters; and Coquelin, Got, Mounet-Sully and Fébvre in the male characters; and Aimée Desclée, whom he discovered, gave her genius to the creation of the parts of the heroine in *Une Visite de noces*, the *Princesse Georges* and *La Femme de Claude*. His wit has been mentioned. He possessed it in abundance, of a singularly trenchant kind. It shows itself less in his novels, which, however, do not contain his best work; but in his introductions, whether to his own books or those of his friends, and what may be called his "occasional" writings, there is an admirable brightness. At work of this kind he showed the highest literary skill. His style is that of the best French traditions. Towards his father Dumas acted a kind of brother's part, and while keeping strangely free from his literary influence, both loved and admired him. The father never belonged to the French Academy. The son was elected into that august assembly on the 30th of January 1874. He died on the 27th of November 1895.

See also Jules Claretie, *A. Dumas fils* (1883); Paul Bourget, *Nouveaux Essais de psychologie contemporaine* (1885); "La Comédie de mœurs," by René Doumic, in L. Petit de Julleville's *Histoire de la langue et de la littérature française*, viii. pp. 82 et seq.; R. Doumic, *Portraits d'écrivains* (1892), Émile Zola, *Documents littéraires, études et portraits* (1881).

(F. T. M.)

DUMAS, GUILLAUME MATHIEU, Count (1753-1837), French general, was born at Montpellier, of a noble family, on the 23rd of November 1753. He joined the army in 1773, and entered upon active service in 1780, as aide-de-camp to Rochambeau in the American War. He had a share in all the principal engagements that occurred during a period of nearly two years. On the conclusion of peace in 1783 he returned to France as a major. He was engaged from 1784 to 1786 in exploring the archipelago and the coasts of Turkey. He was present at the siege of Amsterdam in 1787, where he co-operated with the Dutch against the Prussians. At the Revolution he acted with Lafayette and the constitutional liberal party. He was entrusted by the Assembly with the command of the escort which conducted Louis XVI. to Paris from Varennes. In 1791 as a *maréchal de camp* he was appointed to a command at Metz, where he rendered important service in improving the discipline of the troops. Chosen a member of the Legislative Assembly in the same year by the department of Seine-et-Oise, he was in the following year elected president of the Assembly. When the extreme republicans gained the ascendancy, however, he judged it prudent to make his escape to England. Returning after a brief interval, under the apprehension that his father-in-law would be held responsible for his absence, he arrived in Paris in the midst of the Reign of Terror, and had to flee to Switzerland. Soon after his return to France he was elected a member of the Council of Ancients. After the 18th Fructidor (1797) Dumas, being proscribed as a monarchist, made his escape to Holstein, where he wrote the first part of his *Précis des événements militaires* (published anonymously at Hamburg, 1800).

Recalled to his native country when Bonaparte became First Consul, he was entrusted with the organization of the "Army of Reserve" at Dijon. In 1801 he was nominated a councillor of state. He did good service at Austerlitz, and went in 1806 to Naples, where he became minister of war to Joseph Bonaparte. On the transfer of Joseph to the throne of

Spain, Dumas rejoined the French army, with which he served in Spain during the campaign of 1808, and in Germany during that of 1809. After the battle of Wagram, Dumas was employed in negotiating the armistice. In 1810 he became grand officer of the Legion of Honour and a count of the empire. In the Russian campaign of 1812 he held the post of intendant-general of the army, which involved the charge of the administrative department. The privations he suffered in the retreat from Moscow brought on a dangerous illness. Resuming, on his recovery, his duties as intendant-general, he took part in the battles of 1813, and was made prisoner after the capitulation of Dresden. On the accession of Louis XVIII., Dumas rendered his new sovereign important services in connexion with the administration of the army. When Napoleon returned from Elba, Dumas at first kept himself in retirement, but he was persuaded by Joseph Bonaparte to present himself to the emperor, who employed him in organizing the National Guard. Obliged to retire when Louis XVIII. was restored, he devoted his leisure to the continuation of his *Précis des événements militaires*, of which nineteen volumes, embracing the history of the war from 1798 to the peace of 1807, appeared between 1817 and 1826. A growing weakness of sight, ending in blindness, prevented him from carrying the work further, but he translated Napier's *Peninsular War* as a sort of continuation to it. In 1818 Dumas was restored to favour and admitted a member of the council of state, from which, however, he was excluded in 1822. After the revolution of 1830, in which he took an active part, Dumas was created a peer of France, and re-entered the council of state. He died at Paris on the 16th of October 1837.

Besides the *Précis des événements militaires*, which forms a valuable source for the history of the period, Dumas wrote *Souvenirs du lieut.-général Comte Mathieu Dumas* (published posthumously by his son, Paris, 1839).

DUMAS, JEAN BAPTISTE ANDRÉ (1800-1884), French chemist, was born at Alais (Gard) on the 15th of July 1800. Disappointed in his early hope of entering the navy, he became apprentice to an apothecary in his native town; but seeing little prospect of advancement in that calling, he soon moved to Geneva (in 1816). There he attended the lectures of such men as M.A. Pictet in physics, C.G. de la Rive in chemistry, and A.P. de Candolle in botany, and before he had reached his majority he was engaged with Pierre Prévost in original work on problems of physiological chemistry, and even of embryology. In 1823, acting on the advice of A. von Humboldt, he left Geneva for Paris, which he made his home for the rest of his life. There he gained the acquaintance of many of the foremost scientific men of the day, and quickly made a name for himself both as a teacher and an investigator, attaining within ten years the honour of membership of the Academy of Sciences. When approaching his fiftieth year he entered political life, and became a member of the National Legislative Assembly. He acted as minister of agriculture and commerce for a few months in 1850-1851, and subsequently became a senator, president of the municipal council of Paris, and master of the French mint; but his official career came to a sudden end with the fall of the Second Empire. He died at Cannes on the 11th of April 1884. Dumas is one of the most prominent figures in the chemical history of the middle part of the 19th century. He was one of the first to criticize the electro-chemical doctrines of J.J. Berzelius, which at the time his work began were widely accepted as the true theory of the constitution of compound bodies, and opposed a unitary view to the dualistic conception of the Swedish chemist. In a paper on the atomic theory, published so early as 1826, he anticipated to a remarkable extent some ideas which are frequently supposed to belong to a later period; and the continuation of these studies led him to the ideas about substitution ("metalepsis") which were developed about 1839 into the theory ("Older Type Theory") that in organic chemistry there are certain types which remain unchanged even when their hydrogen is replaced by an equivalent quantity of a haloid element. Many of his well-known researches were carried out in support of these views, one of the most important being that on the action of chlorine on acetic acid to form trichloracetic acid—a derivative of essentially the same character as the acetic acid itself. In the 1826 paper he described his famous method for ascertaining vapour densities, and the redeterminations which he undertook by its aid of the atomic weights of carbon and oxygen proved the forerunners of a long series which included some thirty of the elements, the results being mostly published in 1858-1860. He also devised a method of great value in the quantitative analysis of organic substances for the estimation of nitrogen, while the classification of organic compounds into homologous series was advanced as one consequence of his researches into the acids generated by the

oxidation of the alcohols. Dumas was a prolific writer, and his numerous books, essays, memorial addresses, &c., show him to have been gifted with a clear and graceful style. His earliest large work was a treatise on applied chemistry in eight volumes, the first of which was published in 1828 and the last twenty years afterwards. In the *Essai de statique chimique des êtres organisés* (1841), written jointly with J.B.J.D. Boussingault (1802-1887), he treated the chemistry of life, both plant and animal; this book brought him into conflict with Liebig, who conceived that some of his prior work had been appropriated without due acknowledgment. In 1824, in conjunction with J.V. Audouin and A.T. Brongniart, he founded the *Annales des sciences naturelles*, and from 1840 he was one of the editors of the *Annales de chimie et de physique*. As a teacher Dumas was much sought after for his lectures at the Sorbonne and other institutions both on pure and applied science; and he was one of the first men in France to realize the importance of experimental laboratory teaching.

DU MAURIER, GEORGE LOUIS PALMELLA BUSSON (1834-1896), British artist and writer, was born in Paris. His father, a naturalized British subject, was the son of *émigrés* who had left France during the Reign of Terror and settled in London. In *Peter Ibbetson*, the first of the three books which won George Du Maurier late in life a reputation as novelist almost as great as he had enjoyed as artist and humorist for more than a generation, the author tells in the form of fiction the story of his singularly happy childhood. He was brought to London, indeed, when three or four years old, and spent in Devonshire Terrace and elsewhere two colourless years; but vague memories of this period were suddenly exchanged one beautiful day in June—"the first day of his conscious existence"—for the charming realities of a French garden and "an old yellow house with green shutters and mansard roofs of slate." Here, at Passy, with his "gay and jovial father" and his young English mother, the boy spent "seven years of sweet priceless home-life—seven times four changing seasons of simple genial prae-Imperial Frenchness." The second chapter of Du Maurier's life had for scene a Paris school, very much in the style of that "Institution F. Brossard" which he describes, at once so vividly and so sympathetically, in *The Martian*; and like "Barty Josselin's" schoolfellow and biographer, he left it (in 1851) to study chemistry at University College, London, actually setting up as an analytical chemist afterwards in Bucklersbury. But this was clearly not to be his *métier*, and the year 1856 found him once more in Paris, in the Quartier Latin this time, in the core of that art-world of which in *Trilby*, forty years later, he was to produce with pen and pencil so idealistic and fascinating a picture. Then, like "Barty Josselin" himself, he spent some years in Belgium and the Netherlands, experiencing at Antwerp in 1857, when he was working in the studio of van Lerius, the one great misfortune of his life—the gradual loss of sight in his left eye, accompanied by alarming symptoms in his right. It was a period of tragic anxiety, for it seemed possible that the right eye might also become affected; but this did not happen, and the dismal cloud was soon to show its silver lining, for, about Christmastime 1858, there came to the forlorn invalid a copy of *Punch's Almanac*, and with it the dawn of a new era in his career.

There can be little doubt that the study of this *Almanac*, and especially of Leech's drawings in it, fired him with the ambition of making his name as a graphic humorist; and it was not long after his return to London in 1860 that he sent in his first contribution (very much in Leech's manner) to *Punch*. Mark Lemon, then editor, appreciated his talent, and on Leech's death in 1865 appointed him his successor, counselling him with wise discrimination not to try to be "too funny," but "to undertake the light and graceful business" and be the "romantic tenor" in Mr Punch's little company, while Keene, as Du Maurier puts it, "with his magnificent highly-trained basso, sang the comic songs." These respective rôles the two artists continued to play until the end, seldom trespassing on each other's province; the "comic songs" finding their inspiration principally in the life of the homely middle and lower middle classes, while the "light and graceful business" enacted itself almost exclusively in "good Society." To a great extent, also, Du Maurier had to leave outdoor life to Keene, his weak sight making it difficult for him to study and sketch in the open air and sunshine, thus cutting him off, as he records regretfully, from "so much that is so popular, delightful and exhilarating in English country life"—hunting and shooting and fishing and the like. He contrived, however, to give due attention to milder forms of outdoor recreation, and turned to good account his familiarity with Hampstead Heath and Rotten Row, and his holidays with his family at Whitby and Scarborough, Boulogne and Dieppe.

Of Du Maurier's life during the thirty-six years of his connexion with *Punch* there is not, apart from his work as an artist, much to record. In the early 'sixties he lived at 85 Newman Street in lodgings, which he shared with his friend Lionel Henley, afterwards R.B.A., working hard at his *Punch* sketches and his more serious contributions to *Once a Week* and the *Cornhill Magazine*. After his marriage with Miss Emma Wightwick in 1862 he took a spacious and pleasant house near Hampstead Heath, in surroundings made familiar in his drawings. Shortly before he died he moved to a house in Oxford Square. About 1866 he struck out a new line in his admirable illustrations to Jerrold's *Story of a Feather*. In 1869 he realized a long-cherished aspiration, the illustrating of Thackeray's *Esmond*, and in 1879 he drew twelve additional vignettes for it, in the same year providing several illustrations for the *Ballads*. From time to time he sent pretty and graceful pictures to the exhibitions of the Royal Society of Painters in Water-Colour, to which he was elected in 1881. In 1885 the first exhibition of his works at the Fine Art Society took place. Thus occupied in the practice of his art, spending his leisure in social intercourse with his many friends and at home with his growing family, hearing all the new singers and musicians, seeing all the new plays, he lived the happiest of lives. He died somewhat suddenly on the 8th of October 1896, and was buried in the Hampstead parish churchyard. He left a family of two sons—the elder, Major Guy Du Maurier (b. 1865), a soldier who became more widely known in 1909 as author of the military play *An Englishman's Home*, and the younger, Gerald, a well-known actor—and three daughters.

It is impossible, in considering Du Maurier's work, to avoid comparing it with that of Leech and Keene, the more so that in his little book on *Social Pictorial Satire* he himself has set forth or suggested the points both of resemblance and of difference. Like Keene, though Keene's marvellous technique was his despair, Du Maurier was a much more finished draughtsman than John Leech, but in other respects he had less in common with the younger than with the older humorist. He shows himself, in the best sense, a man of feeling in all his work. He is clearly himself in love with "his pretty woman," as he calls her—every pen-stroke in his presentment of her is a caress. How affectionate, too, are his renderings of his fond young mothers and their big, handsome, simple-minded husbands; his comely children and neat nurserymaids; even his dogs—his elongated dachshunds and magnificent St Bernards! And how he scorns the snobs and philistines—Sir Gorgius Midas and Sir Pompey Bedell, Grigsby and Cadby, Soapley and Toadson! How merciless is his ridicule of the aesthetes of the 'eighties—Maudle and Postlethwaite and Mrs Cimabue Brown! Even to Mrs Ponsonby de Tomkyns, his most conspicuous creation, his satire is scarcely tempered, despite her prettiness. He shows up unsparingly all her unscrupulous little ways, all her cynical, cunning little wiles. Like Leech, he revelled in the lighter aspects of life—the humours of the nursery, the drawing-room, the club, the gaieties of the country house and the seaside—without being blind to the tragic and dramatic. Just as Leech could rise to the height of the famous cartoon "General Février turned Traitor," so it was Du Maurier who inspired Tenniel in that impressive drawing on the eve of the Franco-German War, in which the shade of the great Napoleon is seen warning back the infatuated emperor from his ill-omened enterprise. In his tender drawings in *Once a Week*, also, and in his occasional excursions into the grotesque in *Punch*, such as his picture of "Old Nickotin stealing away the brains of his devotees," he has given ample proof of his faculty for moving and impressive art. The technique of Du Maurier's work in the 'eighties and the 'nineties, though to the average man it seems a marvel of finish and dexterity, is considered by artists a falling off from what was displayed in some of his earlier *Punch* drawings, and especially in his contributions to the *Cornhill Magazine* and *Once a Week*. His later work is undoubtedly more mannered, more "finicking," less simple, less broadly effective. But it is to his fellow-craftsmen only and to experts that this is noticeable.

A quaint tribute has been paid to the literary talent shown in Du Maurier's inscriptions to his drawings by Mr F. Anstey (Guthrie), author of *Vice Versa*, and Du Maurier's colleague on the staff of *Punch*. "In these lines of letterpress," says Mr Anstey, "he has brought the art of précis-writing to perfection." They are indeed singularly concise and to the point. It is the more curious, therefore, to note that in his novels, and even in his critical essays, Du Maurier reveals very different qualities: the précis-writer has become an *improvisatore*, pouring out his stories and ideas in full flood, his style changing with every mood—by turn humorous, eloquent, tender, gay, sometimes merely "skittish," sometimes quite solemn, but never for long; sometimes, again, breaking into graceful and haunting verse. He writes with apparent artlessness; but, in his novels at least, on closer examination, it is found that he has in fact exerted all his ingenuity to give them—what such flagrantly untrue tales most require—verisimilitude. It is hard to say which of the three stories is the more impossible: that of Trilby, the tone-deaf artist's model who becomes a *prima donna*, that of Barty

Josselin and his guardian angel from Mars, or that of the dream-existence of Peter Ibbetson and the duchess of Towers. They are all equally preposterous, and yet plausible. The drawings are cunningly made to serve the purpose of evidence, circumstantial and direct. These books cannot be criticized by the ordinary canons of the art of fiction. They are a *genre* by themselves, a blend of unfettered day-dream and rose-coloured reminiscence. For the dramatic version of *Trilby* by Mr Paul Potter Du Maurier would accept no credit. The play was produced in 1895 by Herbert Beerbohm Tree, at the Haymarket, with immense popular success.

Some striking examples of Du Maurier's work for *Once a Week* and the *Cornhill Magazine* are included in Gleeson White's *English Illustrators of the Sixties*. The following is a list of the chief works which he illustrated: Foxe's *Book of Martyrs* (1865), Mrs Gaskell's *Wives and Daughters* (1866), Jerrold's *Story of a Feather* (1867), Owen Meredith's *Lucile* (1868), *The Book of Drawing room Plays*, by H. Dalton (1868), *Sooner or Later*, by C.A.G. Brooke (1868), Thackeray's *Esmond* (1869 and 1879), and *Ballads* (1879), *Misunderstood*, by Florence Montgomery (1874), *Round about the Islands*, by C.W. Scott (1874), *Hurlock Chase*, by G.E. Sargent (1876), *Songs of many Seasons*, by J. Browne (in collaboration) (1876), *Pegasus Re-saddled*, by H.C. Pennell (1877), *Ingoldsby Legends* (in collaboration), by R. Barham (1877), *Prudence*, by L.C. Lillie (1882), *As in a Looking-glass* by F.C. Phillips (1889), *Luke Ashleigh*, by A. Elwes (1891), and his own three novels, which appeared serially in *Harper's Magazine*: *Peter Ibbetson* (1892), *Trilby* (1894), *The Martian* (1897), and published after his death. In 1897 also there was published, under the title *English Society*, with an introduction by W.D. Howells, a collection of full page drawings which he had contributed regularly to *Harper's Magazine*.

Some of his *Punch* drawings have been reproduced also in *The Collections of Mr Punch* (1880), *Society Pictures from Punch* (1890), *A Legend of Camelot* (1890). To his *Social Pictorial Satire* (1890) reference has been made. He contributed two essays upon book illustration to the *Magazine of Art* (1890). See also the *Magazine of Art* for 1892, for an article upon his work by W. Delaplaine Scull, with illustrations. Other volumes containing information about his life and work are: *The History of Punch* by M.H. Spielmann, *In Bohemia with Du Maurier*, by Felix Moscheles, Henry James's "Du Maurier and London Society," *Century Magazine* (1883), and "Du Maurier," *Harper's Magazine* (September 1897, June 1899). See also Ruskin's *Art of England* Lecture 5, Pennell's *Pen-Drawing and Pen-Draughtsmen*, and Muther's *Modern Painting* vol. ii.

(F. W. W.)

DUMBARTON, a royal, municipal and police burgh, seaport, and county town of Dumbartonshire, Scotland, situated on the river Leven, near its confluence with the Clyde, 15½ m. W. by N. of Glasgow by the North British and Caledonian railways. Pop. (1891) 17,625, (1901) 19,985. The Alcluith ("hill of the Clyde") of the Britons, and Dunbreatan ("fort of the Britons") of the Celts, it was the capital of the district of Strathclyde. Here, too, the Romans had a naval station which they called Theodosia. Although thus a place of great antiquity, the history of the town practically centres in that of the successive fortresses on the Rock of Dumbarton, a twin peaked mount, 240 ft. high and a mile in circumference at the base. The fortress was often besieged and sometimes taken, the Picts seizing it in 736 and the Northmen in 870, but the most effectual surprise of all was that accomplished, in the interests of the young King James VI., by Thomas Crawford of Jordanhill on March 31, 1571. The castle was held by Queen Mary's adherents, and as it gave them free communication with France, its capture was deemed essential. Crawford decided to climb the highest point, concluding that, owing to its imagined security, it would be carelessly guarded. Favoured with a dark and foggy night the party of 150 men and a guide reached the first ledge of rock undiscovered. In scaling the second precipice one of the men was seized with an epileptic fit on the ladder. Crawford bound him to the ladder and then turned it over and was thus enabled to ascend to the summit. At this moment the alarm was given, but the sentinel and the sleepy soldiers were slain and the cannon turned on the garrison. Further resistance being useless, the castle was surrendered. During the governorship of Sir John Menteith, William Wallace was in 1305 imprisoned within its walls before he was removed to London. The higher of the two peaks is known as Wallace's seat, a tower, perhaps the one in which he was incarcerated, being named after him. On the portcullis gateway may still be seen rudely carved heads of Wallace and his betrayer, the latter with his finger in his mouth. Queen Mary, when a child, resided in the castle for a short time. It is

an ugly barrack-like structure, defended by a few obsolete guns, although by the Union Treaty it is one of the four fortresses that must be maintained. The rock itself is basalt, with a tendency to columnar formation, and some parts of it have a magnetic quality.

The town arms are the elephant and castle, with the motto *Fortitudo et fidelitas*. Dumbarton was of old the capital of the earldom of Lennox, but was given up by Earl Maldwyn to Alexander II., by whom it was made a royal burgh in 1221 and declared to be free from all imposts and burgh taxes. Later sovereigns gave it other privileges, and the whole were finally confirmed by a charter of James VI. It had the right to levy customs and dues on all vessels on the Clyde between Loch Long and the Kelvin. “Offers dues” on foreign ships entering the Clyde were also exacted. In 1700 these rights were transferred to Glasgow by contract, but were afterwards vested in a special trust created by successive acts of parliament.

Most of the town lies on the left bank of the Leven, which almost converts the land here into a peninsula, but there is communication with the suburb of Bridgend on the right bank by a five-arched stone bridge, 300 ft. long. The public buildings include the Burgh Hall, the academy (with a graceful steeple), the county buildings, the Denny Memorial, a Literary and a Mechanics’ institute, Masonic hall, two cottage hospitals, a fever hospital, a public library and the combination poorhouse. There are two public parks—Broad Meadow (20 acres), part of ground reclaimed in 1859, and Levengrove (32 acres), presented to the corporation in 1885 by Peter Denny and John McMillan, two ship-builders who helped lay the foundation of the town’s present prosperity. The old parish kirkyard was closed in 1856, but a fine cemetery was constructed in its place outside the town. Dumbarton is controlled by a provost and a council. With Port-Glasgow, Renfrew, Rutherglen and Kilmarnock it unites in returning one member to parliament. The principal industry is shipbuilding. The old staple trade of the making of crown glass, begun in 1777, lapsed some 70 years afterwards when the glass duty was abolished. There are several great engineering works, besides iron and brass foundries, saw-mills, rope-yards and sail-making works. There are quays, docks and a harbour at the mouth of the Leven, and a pier for river steamers runs out from the Castle rock. The first steam navigation company was established in Dumbarton in 1815, when the “Duke of Wellington” (built in the town) plied between Dumbarton and Glasgow. But it was not till 1844, consequent on the use of iron for vessels, that shipbuilding became the leading industry.

DUMBARTONSHIRE, a western county of Scotland, bounded N. by Perthshire, E. by Stirlingshire, S.E. by Lanarkshire, S. by the Clyde and its estuary, and W. by Loch Long and Argyllshire. There is also a detached portion, comprising the parish of Kirkintilloch and part of that of Cumbernauld enclosed between the shires of Stirling and Lanark. This formerly formed part of Stirlingshire, but was annexed in the 14th century when the earl of Wigtown, to whom it belonged, became heritable sheriff of Dumbartonshire. Dumbartonshire has an area of 170,762 acres or 267 sq. m. The north-west and west are mountainous, the chief summits being Ben Vorlich (3092 ft.), Ben Vane (3004), Doune Hill (2409), Beinn Chaorach (2338), Beinn a Mhanaich (2328), Beinn Eich (2302), Cruach ant Suthein (2244), Ben Reoch (2168), Beinn Tharsuinn (2149), Beinn Dubh (2018), Balcnock (2092) and Tullich Hill (2075). In the south are the Kilpatrick Hills, their highest points being Duncomb and Fynloch (each 1313 ft.). The Clyde, the Kelvin and the Leven are the only rivers of importance. The Leven flows out of Loch Lomond at Balloch and joins the Clyde at Dumbarton after a serpentine course of about 7 m. Most of the other streams are among the mountains, whence they find their way to Loch Lomond, the principal being the Inveruglas, Douglas, Luss, Finlas and Fruin. Nearly all afford good sport to the angler. Of the inland lakes by far the largest and most magnificent is Loch Lomond (*q.v.*). The boundary between the shires of Dumbarton and Stirling follows an imaginary line through the lake from the mouth of Endrick Water to a point opposite the isle of Vow, giving about two-thirds of the loch to the former county. Loch Sloy on the side of Ben Vorlich is a long, narrow lake, 812 ft. above the sea amid wild scenery. From its name the Macfarlanes took their slogan or war-cry. The shores of the Gareloch, a salt-water inlet 6½ m. long and 1 m. wide, are studded with houses of those whose business lies in Glasgow. Garelochhead has grown into a favourite summer resort; Clynder is famed for its honey. The more important salt-water inlet, Loch Long, is 17 m. in length and varies in width from 2 m. at its mouth to about ½ a mile in its upper reach. It is

the dumping-place for the dredgers which are constantly at work preserving the tide-way of the Clyde from Dumbarton to the Broomielaw—its use for this purpose being a standing grievance to anglers. The scenery on both shores is very beautiful. Only a mile separates Garelochhead from Loch Long, and at Arrochar the distance from Tarbet on Loch Lomond is barely 1¾ m. Nearly all the glens are situated in the Highland part of the shire, the principal being Glen Sloy, Glen Douglas, Glen Luss and Glen Fruin. The last is memorable as the scene of the bloody conflict in 1603 between the Macgregors and the Colquhouns, in which the latter were almost exterminated. It was this savage encounter that led to the proscription of the Macgregors, including the famous Rob Roy.

Geology.—Like the other counties along the eastern border of the Highlands, Dumbartonshire is divided geologically into two areas, the boundary between the two being defined by a line extending from Rossdhu on Loch Lomond south-west by Row and Roseneath to Kilcreggan. The mountainous region lying to the north of this line is composed of rocks belonging to the metamorphic series of the Eastern Highlands and representing several of the groups met with in the adjoining counties of Perth and Argyll. Immediately to the north of the Highland border the Aberfoyle slates and grits appear, repeated by isoclinal folds trending north-east and south-west and dipping towards the north-west. These are followed by a great development of the Ben Ledi grits and schists—the representatives of the Beinn Bheula grits and ablite schists of Argyllshire, which, by means of rapid plication, spread over the high grounds northwards to beyond the head of Loch Lomond. Along the line of section between Luss and Ardlui important evidence is obtained of the gradual increase of metamorphism as we proceed northwards from the Highland border. The original clastic characters of the strata are obscured and the rocks between Arrochar and Inverarnan in Glen Falloch merge into quartz-biotite gneisses and albite schists. In the extreme north between Ardlui and the head of Glen Fyne in Argyllshire there is a large development of plutonic rocks piercing the Highland schists and producing marked contact metamorphism. These range from acid to ultrabasic types and include granite, augite-diorite, picrite and serpentine. On the hill-slopes to the west of Ardlui and Inverarnan the diorite appears, while farther west, between the watershed and Glen Fyne, there is a large mass of granite. Boulders of plutonic rocks from this area have been widely distributed by the ice during the glacial period. Immediately to the south of the Highland border line there is a belt of Upper Old Red Sandstone strata which stretches from the shores of Loch Lomond westwards by Helensburgh and Roseneath Castle to Kilcreggan. These sandstones and conglomerates are succeeded by the sandstones, shales, clays and cementstones at the base of the Carboniferous formation which occupy a narrow strip between Loch Lomond and Gareloch and are cut off by a fault along their south-east margin. East of this dislocation there is a belt of Lower Old Red Sandstone strata extending from the mouth of the Endrick Water south-westwards by Balloch to the shore of the Clyde west of Cardross, which is bounded on either side by the upper division of that system. Still farther east beyond Dumbarton the Upper Old Red Sandstone is again surmounted by the representatives of the Cementstone group, which are followed by the lavas, tuffs and agglomerates of the Kirkpatrick Hills, intercalated in the Calciferous Sandstone series. Here the terraced features of the volcanic plateau, produced by the denudation of the successive flows is well displayed. Eastwards by Kilpatrick and Bearsden to the margin of the county near Maryhill the rocks of Calciferous Sandstone age are followed in normal order by the Carboniferous Limestone series; the Hurlet Limestone and Hurlet Coal of the lower limestone group being prominently developed. In the detached portion of the county between Kirkintilloch and Cumbernauld there is an important coalfield embracing the seams in the middle or coal-bearing group of the Carboniferous Limestone series. In this county there are several striking examples of the east and west dolerite dykes which are probably of late Carboniferous age. These traverse the Highland schists between Loch Long and Loch Lomond, the Old Red Sandstone area between Alexandria and the Blane Valley, and the Carboniferous tract near Cumbernauld. The ice which radiated from the Dumbartonshire Highlands moved south-east and east towards the central plain of Carboniferous rocks. Hence the boulder clay of the lowland districts is abundantly charged with boulders of schistose grit, slate, gneiss and granite derived from areas lying far to the north-west. Along the shores of the Clyde the broad terraced features indicate the limits of successive raised beaches.

Climate and Agriculture.—There is excessive rainfall in the Highlands, averaging 53 in. at Helensburgh up to nearly 70 in. in the north. The temperature, with an average for the year of 47½° F., varies from 38° in January to 58° in July, but in the valleys the heat in midsummer is often oppressive. The prevailing winds are from the west and south-west, but easterly winds are frequent in the spring. Frosts are seldom severe, and, except on the mountains, snow never lies long. The arable lands extend chiefly along the Clyde and the Leven, and are composed of rich black loam, gravelly soil and clay. From the proximity to Glasgow and other large towns the farmers have the double advantage of good manure and

a ready market for all kinds of stock and produce, and under this stimulus high farming and dairying on a considerable scale prosper. Black-faced sheep and Highland cattle are pastured on the hilly lands and Cheviots and Ayrshires on the low grounds. Oats and wheat are the principal cereals, but barley and potatoes in abundance, and turnips and beans are also grown.

Other Industries.—Turkey-red dyeing has long been the distinctive industry of the county. The water of the Leven being not only constant but also singularly soft and pure, dyers and bleachers have constructed works at many places in the Vale of Leven. Bleaching has been carried on since the early part of the 18th century, and cotton-printing at Levenfield dates from 1768. The establishments at Alexandria, Bonhill, Jamestown, Renton and other towns for all the processes connected with the bleaching, dyeing and printing of cottons, calicoes and other cloths, besides yarns, are conducted on the largest scale. At Milton the first power-loom mill was erected. The engineering works and shipbuilding yards at Clydebank are famous, and at Dumbarton there are others almost equally busy. The extensive Singer sewing-machine works are at Kilbowie, and the Clyde Trust barge-building shops are at Dalmuir. There are distilleries and breweries at Duntocher, Bowling, Dumbarton, Milngavie (pronounced *Milguy*) and other towns. In fact the Vale of Leven and the riverside towns east of Dumbarton form a veritable hive of industry. In the detached portion, Kirkintilloch and Cumbernauld are seats of great activity in the mining of coal and ironstone, and there are besides chemical works and saw-mills in the former town. There is some fishing at Helensburgh and along the Gareloch.

The populous districts of the county are served almost wholly by the North British railway. From Helensburgh to Inverarnan the Highland railway runs through scenery of the most diversified and romantic character. The Caledonian railway has access to Balloch from Glasgow, and its system also traverses the detached portion. Portions of the Forth and Clyde Canal, which connects with the Clyde at Bowling, and was opened for traffic in 1775, pass through the shire. There is regular steamer communication between Glasgow and the towns and villages on the coast, and on Loch Lomond steamers call at several points between Balloch and Ardlui.

Population and Government.—The population of Dumbartonshire in 1891 was 98,014 and in 1901 113,865, of whom 3101 spoke both Gaelic and English and 14 Gaelic only. The principal towns, with populations in 1901, are—Alexandria (8007), Bonhill (3333), Clydebank (21,591), Dumbarton (19,985), Duntocher (2122), Helensburgh (8554), Jamestown (2080), Kirkintilloch (11,681), Milngavie (3481), New Kilpatrick or Bearsden (2705) and Renton (5067). The county returns one member to parliament. Dumbarton, the county town, is the only royal burgh, and belongs to the Kilmarnock group of parliamentary burghs. The municipal and police burghs are Clydebank, Cove and Kilcreggan, Dumbarton, Helensburgh, Kirkintilloch and Milngavie. Dumbartonshire forms a sheriffdom with the counties of Stirling and Clackmannan, and there is a resident sheriff-substitute at Dumbarton, who sits also at Kirkintilloch. The shire is under school-board jurisdiction, but there are several voluntary schools, besides St Peter’s Roman Catholic College in New Kilpatrick. Science, art and technical classes are subsidized out of the whole of the county “residue” and, if necessary, out of part of the burgh “residue” also. Agricultural lectures and the travelling expenses and fees of county students at Glasgow Technical College are also paid for from the same source.

History.—The country is rich in antiquities connected with the aborigines and also with the Romans. The Caledonians and Picts have left their traces in rude forts and tumuli, but of greater interest are remains in several places of the wall of Antoninus, built from the Forth to the Clyde, and running along the north of the detached portion of the shire and through the south-eastern corner of the county to Kilpatrick. Other Roman relics have been found at Duntocher, Cumbernauld and elsewhere. The shire forms part of the old Scottish territory of Lennox (*Levenachs*, “fields of the Leven”), which embraced the Vale of the Leven and the basin of Loch Lomond, or all modern Dumbartonshire, most of Stirling and parts of the shires of Renfrew and Perth. It gave the title of the earldom created in 1174 by William the Lion and of the dukedom conferred by Charles II. on his natural son, Charles, duke of Richmond and Lennox. In 1702 the Lennox estates were sold to the marquis of Montrose. The captive Wallace was conveyed in chains to Dumbarton Castle, whence he was taken to his death in London. Robert Bruce is said to have mustered his forces at Dullatur prior to the battle of Bannockburn, and died at Cardross Castle in 1329. The Covenanters in their flight from the bloody field of Kilsyth, where in 1645 Montrose had defeated them with great slaughter, made their way through the southern districts. When the Forth and Clyde Canal was being excavated swords, pistols, and other weapons dropped by the fugitives were found at Dullatur, together with skeletons of men and horses. In the Highland country the

clans of Macgregor and Macfarlane made their home in the fastnesses, whence they descended in raids upon the cattle, the goods and sometimes the persons of their Lowland neighbours.

See J. Irving, *History of Dumbartonshire* (Dumbarton, 1860); *Book of Dumbartonshire* (Edinburgh, 1879); Sir W. Fraser, *Chiefs of Colquhoun* (Edinburgh, 1869); *The Lennox* (Edinburgh, 1874); D. Macleod, *Castle and Town of Dumbarton* (Dumbarton, 1877); *Dumbarton* (Dumbarton, 1884); *Dumbarton: Ancient and Modern* (Glasgow, 1893); *Ancient Records of Dumbarton* (Dumbarton, 1896); J. Glen, *History of Dumbarton* (Dumbarton, 1876).

DUMB WAITER,[1] a small oblong or circular table to hold reserve plates, knives and forks, and other necessaries for a meal. This piece of furniture originated in England towards the end of the 18th century, and some exceedingly elegant examples were designed by Sheraton and his school. They were usually circular, with three diminishing tiers, sometimes surrounded by a continuous or interrupted pierced gallery in wood or brass. The smaller varieties are now much used in England for the display of small silver objects in drawing-rooms.

1 The term “dumb,” strictly meaning mute or destitute of speech (see Deaf and Dumb), is applied in this and other analogous cases (*e.g.* dumb-bell, dumb-barge) as connoting the absence of some normal capacity in the term with which it is associated.

DUM-DUM, a town and cantonment in British India at the head of an administrative subdivision in the district of the Twenty-four Parganas, in the presidency division of Bengal, with a station on the Eastern Bengal railway, 4½ m. N.E. of Calcutta. It was the headquarters of the Bengal artillery from 1783 to 1853, when they were transferred to Meerut as a more central station; and its possession of a cannon foundry and a percussion-cap factory procured for it the name of the Woolwich of India. The barracks—still occupied by small detachments—are brick-built and commodious; and among the other buildings are St Stephen’s Protestant church, a Roman Catholic chapel, a European and native hospital, a large bazaar and an English school. The population in 1901 of North Dum-Dum was 9916, and of South Dum-Dum 10,904. It was at Dum-Dum that the treaty of 1757 was signed by which the nawab of Bengal ratified the privileges of the English, allowed Calcutta to be fortified, and bestowed freedom of trade. On the 7th of December 1908 a serious explosion occurred by accident at the Dum-Dum arsenal, resulting in death or serious injury to about 50 native workmen.

At the Dum-Dum foundry the hollow-nosed “Dum-Dum” (Mark IV.) bullets were manufactured, the supposed use of which by the British during the Boer War caused considerable comment in 1899. Their peculiarity consisted in their expanding on impact and thus creating an ugly wound, and they had been adopted in Indian frontier fighting owing to the failure of the usual type of bullets to stop the rushes of fanatical tribesmen. They were not, in fact, used during the Boer War. Other and improvised forms of expanding bullet were used in India and the Sudan, the commonest methods of securing expansion being to file down the point until the lead core was exposed and to make longitudinal slits in the nickel envelope. All these forms of bullet have come to be described colloquially, and even in diplomatic correspondence, as “dum-dum bullets,” and their alleged use by Russian troops in the Russo-Japanese War of 1904-1905 formed the subject of a protest on the part of the Japanese government. The proposals made at the second Hague Conference to forbid the use of these bullets by international agreement were agreed to by all the powers except Great Britain and the United States.

DUMESNIL, MARIE FRANÇOISE (1713-1803), French actress, whose real name was Marchand, was born in Paris on the 2nd of January 1713. She began her stage career in the provinces, whence she was summoned in 1737 to make her *début* at the Comédie Française as Clytemnestre in *Iphigénie en Tauride*. She at once came into the front rank, playing Cléopâtre, Phèdre, Athalie and Hermione with great effect, and when she created Mérope (1743) Voltaire says that she kept the audience in tears for three successive acts. She retired from the stage in 1776, but lived until the 20th of February 1803. Her rival, Clairon, having spoken ill of her, she authorized the publication of a *Mémoire de Marie Françoise Dumesnil, en réponse aux mémoires d'Hippolyte Clairon* (1800).

DUMFRIES (Gaelic, "the fort in the copse"), a royal and parliamentary burgh and capital of the county, Dumfriesshire, Scotland. It lies on the left bank of the Nith, about 8 m. from the Solway Firth and 81 m. S.E. of Glasgow by the Glasgow & South-Western railway. Pop. (1891) 16,675; (1901) 17,079. Dumfries is beautifully situated and is one of the handsomest county towns in Scotland. The churches and chapels of the Presbyterian and other communions are, many of them, fine buildings. St Michael's (1746), a stately pile, was the church which Robert Burns attended, and in its churchyard he was buried, his remains being transferred in 1815 to the magnificent mausoleum erected in the south-east corner, where also lie his wife, Jean Armour, and several members of his family. The Gothic church of Greyfriars (1866-1867) occupies the site partly of a Franciscan monastery and partly of the old castle of the town. On the site of St Mary's (1837-1839), also Gothic, stood the small chapel raised by Christiana, sister of Robert Bruce, to the memory of her husband, Sir Christopher Seton, who had been executed on the spot by Edward I. St Andrew's (1811-1813), in the Romanesque style, is a Roman Catholic church, which also serves as the pro-cathedral of the diocese of Galloway.

Besides numerous schools, there is an admirably equipped Academy. The old infirmary building is now occupied by St Joseph's College, a commercial academy of the Marist Brotherhood, in connexion with which there is a novitiate for the training of members of the order for missionary service at home or abroad. In the middle of the market-place stands the old town hall, with red tower and cupola, known from its situation as the Mid Steeple, built by Tobias Bachup of Alloa (1708). The new town hall and post-office are near the uppermost bridge. The county buildings, in Buccleuch Street, are an imposing example of the Scots Baronial style. To Mr Andrew Carnegie and Mr and Mrs M'Kie of Moat House was due the free library. The charitable institutions include Moorhead's hospital (1753) for reduced householders; the Dumfriesshire and Galloway royal infirmary, dating from 1778, but now housed in a fine edifice in the northern Italian style; the Crichton royal institution for the insane, founded by Dr James Crichton of Friars Carse, and supplemented in 1848 by the Southern Counties asylum; the new infirmary, a handsome building; the contagious diseases hospital, the industrial home for orphan and destitute girls and a nurses' home. The Theatre Royal, reconstructed in 1876, dates from 1787. Burns composed several prologues and epilogues for some of its actors and actresses. Among other public buildings are the assembly rooms, St George's hall, the volunteer drill hall, and the Crichton Institution chapel, completed at a cost of £30,000. The corporation owns the water supply, public baths and wash-houses and the gasworks. In front of Greyfriars church stands a marble statue of Burns, unveiled in 1882, and there is also a monument to Charles, third duke of Queensberry. The Nith is crossed by three bridges and the railway viaduct. The bridge, which is used for vehicular traffic, dates from 1790-1794. Devorgilla's bridge, below it, built of stone in 1280, originally consisted of nine arches (now reduced to three), and is reserved in spite of its massive appearance for foot passengers only, as is also the suspension bridge opened in 1875.

Dumfries, Annan, Kirkcudbright, Lochmaben and Sanquhar—the "Five Carlins" of Burns's Election Ballads—combine to return one member to Parliament. As a parliamentary burgh Dumfries includes Maxwelltown, on the opposite side of the river, which otherwise belongs to Kirkcudbrightshire.

The leading industries comprise manufactures of tweeds, hosiery, clogs, baskets and leather, besides the timber trade, nursery gardening and the making of machinery and iron implements. Dumfries markets for cattle and sheep, held weekly, and for horses, held five times annually, have always ranked with the best, and there is also a weekly market for pork

during the five months beginning with November. The sea-borne trade is small compared with what it was before the railway came.

Although Dumfries was the site of a camp of the Selgovian Britons, nothing is known of its history until long after the withdrawal of the Romans. William the Lion (d. 1214) made it a royal burgh, but the oldest existing charter was granted by Robert II. in 1395. The town became embroiled in the struggles that ended in the independence of Scotland. It favoured the claims to the throne, first of John Baliol—whose mother Devorgilla, daughter of Alan, lord of Galloway, had done much to promote its prosperity by building the stone bridge over the Nith—and then of the Red Comyn, as against those of Robert Bruce, who drew his support from Annandale. When Edward I. besieged Carlaverock Castle in 1300 he lodged in the Franciscan monastery, which, six years later (10th of February 1306), was the scene of the murder of Comyn (see ROBERT THE BRUCE). From this time to nearly the close of the 16th century the burgh was exposed to frequent raids, both from freebooters on the English side and from partisans of the turbulent chiefs—Douglases, Maxwells, Johnstones. The Scottish sovereigns, however, did not wholly neglect Dumfries. James IV., James V., Mary and her son each visited it. James VI. was royally entertained on the 3rd of August 1617, and afterwards presented the seven incorporated trades with a silver gun to encourage the craftsmen in the practice of musketry. The competition for this cannon-shaped tube, now preserved in the old town hall, took place annually—with a great festival every seven years—until 1831. John Mayne (1759-1836), a native of Dumfries, commemorated the gathering in an excellent humorous poem called “The Siller Gun.” Though in sympathy with the Covenanters, the town was the scene of few incidents comparable to those which took place in the northern parts of the shire. The Union with England was so unpopular that not only did the provost vote against the measure in the Scottish parliament, but the articles were burned (20th of November 1706) at the Market Cross by a body of Cameronians, amidst the approving cheers of the inhabitants. In both 1715 and 1745 Dumfries remained apathetic. Prince Charles Edward indeed occupied the town, holding his court in a building afterwards known as the Commercial Hotel, levying £2000 tribute money and requisitioning 1000 pairs of shoes for his Highlanders, by way of punishing its contumacy. But, in a false alarm, the Jacobites suddenly retreated, and a few years later the town was reimbursed by the State for the Pretender’s extortions. The most interesting event in the history of Dumfries is its connexion with Burns, for the poet resided here from December 1791 till his death on the 21st of July 1796. The house in which he died is still standing.

The picturesque ruins of Carlaverock Castle—the “Ellangowan” of *Guy Mannering*—are 8 m. to the south. Above the entrance are the arms of the Maxwells, earls of Nithsdale, to whose descendant, the duchess of Norfolk, it belongs. The castle, which is in an excellent state of preservation, is built of red sandstone, on the site of a fortress supposed to have been erected in the 6th century, of which nothing now remains. In plan it is a triangle, protected by a double moat, and has round towers at the angles. Part of the present structure is believed to date from 1220 and once sheltered William Wallace. It withstood Edward I.’s siege in 1300 for two days, although garrisoned by only sixty men. In the troublous times that followed it often changed hands. In 1570 it fell into disrepair, but was restored, and in 1641 was besieged for the last time by the Covenanters. 663

A mile and a half to the north-west of Dumfries lies Lincluden Abbey, “an old ruin,” says Burns, “in a sweet situation at the confluence of the Cluden and the Nith.” Originally the abbey was a convent, founded in the 12th century, but converted two centuries later into a collegiate church by Archibald, earl of Douglas. The remains of the choir and south transept disclose rich work of the Decorated style.

DUMFRIESSHIRE, a border county of Scotland, bounded S. by the Solway Firth, S.E. by Cumberland, E. by Roxburghshire, N. by the shires of Lanark, Peebles and Selkirk, and W. by Ayrshire and Kirkcudbrightshire. Its area is 686,302 acres or 1072 sq. m. The coast line measures 21 m. The county slopes very gradually from the mountainous districts in the north down to the sea, lofty hills alternating in parts with stretches of tableland or rich fertile holms. At various points within a few miles of the Solway are tracts of moss land, like Craigs Moss, Lochar Moss and Longbridge Moor in the west, and Nutberry Moss in the east, all once under water, but now largely reclaimed. The principal mountains occur near the northern boundaries, the highest being White Coomb (2695 ft.), Hart Fell (2651), Saddle

Yoke (2412), Swatte Fell (2389), Lowther Hills (2377), Queensberry (2285), which gives his secondary title to the duke of Buccleuch and the title of marquess to a branch of the house of Douglas, and Ettrick Pen (2269). The three longest rivers are the Nith, the Annan and the Esk, the basins of which form the great dales by which the county is cleft from north to south—Nithsdale, Annandale and Eskdale. From the point where it enters Dumfriesshire, 16 m. from its source near Enoch Hill in Ayrshire, the course of the Nith is mainly south-easterly till it enters the Solway, a few miles below Dumfries. Its total length is 65 m., and its chief affluents are, on the right, the Kello, Euchan, Scar, Cluden and Cargen, and, on the left, the Crawick, Carron and Campie. The Annan rises near the Devil's Beef Tub, a remarkable chasm in the far north, and after flowing about 40 m., mainly in a southerly course, it enters the Solway at Barnkirk headland. It receives, on the right, the Kinnel (reinforced by the Ae), and, on the left, the Moffat, the Dryfe and the Milk. From the confluence of the White Esk (rising near Ettrick Pen) and the Black Esk (rising near Jock's Shoulder, 1754 ft.) the Esk flows in a gradually south-easterly direction till it crosses the Border, whence it sweeps to the S.W. through the extreme north-western territory of Cumberland and falls into the Solway. Of its total course of 42 m., 12 belong to the White Esk, 20 are of the Esk proper on Scottish soil and 10 are of the stream in its English course. On the right the Wauchope is the chief affluent, and on the left it receives the Megget, Ewes, Tarras and Line—the last being an English tributary. Other rivers are the Lochar (18 m.), the Kirtle (17) and the Sark (12), all flowing into the Solway. For one mile of its course the Esk, and for 7 m. of its course the Sark, form the boundaries between Dumfriesshire and Cumberland. Loch Skene in the north (1750 ft. above the sea), the group of lochs around Lochmaben, and Loch Urr in the west, only part of which belongs to Dumfriesshire, are the principal lakes. There are few glens so named in the shire, but the passes of Dalveen, Enterkin and Menock, leading up from Nithsdale to the Lowther and other hills, yield to few glens in Scotland in the wild grandeur of their scenery. For part of the way Enterkin Pass runs between mountains rising sheer from the burn to a height of nearly 2000 ft. Loch Skene finds an outlet in Tail Burn, the water of which at a short distance from the lake leaps from a height of 200 ft. in a fine waterfall, known as the Grey Mare's Tail. A much smaller but picturesque fall of the same name, also known as Crichope Linn, occurs on the Crichope near Thornhill. Mineral waters are found at Moffat, Hartfell Spa, some three miles farther north, Closeburn and Brow on the Solway.

Geology.—The greater portion of the county of Dumfries belongs to the Silurian tableland of the south of Scotland which contains representatives of all the divisions of that system from the Arenig to the Ludlow rocks. By far the largest area is occupied by strata of Tarannon and Llandovery age which cover a belt of country from 20 to 25 m. across from Drumlanrig Castle in the north to Torthorwald in the south. Consisting of massive grits, sometimes conglomeratic, greywackes, flags and shales, these beds are repeated by innumerable folds frequently inverted, striking N.E. and S.W. and usually dipping towards the N.W. In the midst of this belt there are lenticular bands of older strata of Arenig, Llandeilo, Caradoc and Llandovery age composed of fine sediments such as cherts, black and grey shales, white clays and flags, which come to the surface along anticlinal folds and yield abundant graptolites characteristic of these divisions. These black shale bands are typically developed in Moffatdale, indeed the three typical sections chosen by Professor Lapworth to illustrate his three great groups—(1) the Glenkill shales (Upper Llandeilo), (2) the Hartfell shales (Caradoc), (3) Birkhill shales (Lower Llandovery)—occur respectively in the Glenkill Burn north of Kirkmichael, on Hartfell and in Dobbs Linn near St Mary's Loch in the basin of the river Annan. In the extreme N.W. of the county between Drumlanrig Castle and Dalveen Pass in the S. and the Spango and Kello Waters on the N., there is a broad development of Arenig, Llandeilo and Caradoc strata, represented by Radiolarian cherts, black shales, grits, conglomerates, greywackes and shales which rise from underneath the central Tarannon belt and are repeated by innumerable folds. In the cores of the arches of Arenig cherts there are diabase lavas, tuffs and agglomerates which are typically represented on Bail Hill E. of Kirkconnel. Along the southern margin of the Tarannon belt, the Wenlock and Ludlow rocks follow in normal order, the boundary between the two being defined by a line extending from the head of the Ewes Water in Eskdale, S.W. by Lockerbie to Mouswald. These consist of greywackes, flags and shales with bands of dark graptolite shales, the finer sediments being often well cleaved. They are likewise repeated by inverted folds, the axial planes being usually inclined to the S.E. The Silurian tableland in the N.W. of the county is pierced by intrusive igneous rocks in the form of dikes and bosses, which are regarded as of Lower Old Red Sandstone age. Of these, the granite mass of Spango Water, N.E. of Kirkconnel, is an excellent example. Along the N.W. margin of the county, on the N. side of the fault bounding the Silurian tableland, the Lower Old Red Sandstone occurs, where it consists of sandstones and conglomerates associated with contemporaneous volcanic rocks. The Upper Old Red Sandstone forms a narrow strip on the south side of the Silurian tableland, resting

unconformably on the Silurian rocks and passing upwards into the Carboniferous formation. It stretches from the county boundary E. of the Ewes Water, S.W. by Langholm to Birrenswark. Along this line these Upper Red sandstones and shales are overlaid by a thin zone of volcanic rocks which point to contemporaneous volcanic action in this region at the beginning of the Carboniferous period. Some of the vents from which these igneous materials may have been discharged are found along the watershed between Liddesdale and Teviotdale in Roxburghshire. The strata of Carboniferous age are found in three areas: (1) between Sanquhar and Kirkconnel, (2) at Closeburn near Thornhill, (3) in the district between Liddesdale and Ruthwell. In the first two instances (Sanquhar and Thornhill) the Carboniferous sediments lie in hollows worn out of the old Silurian tableland. In the Sanquhar basin the strata belong to the Coal Measures, and include several valuable coal-seams which are probably the southern prolongations of the members of this division in Ayrshire. At the S.E. limit of the Sanquhar Coalfield there are patches of the Carboniferous Limestone series, but towards the N. these are overlapped by the Coal Measures which thus rest directly on the Silurian platform. At Closeburn and Barjarg there are beds of marine limestone, associated with sandstones and shales which probably represent marine bands in the Carboniferous Limestone series. The most important development of Carboniferous strata occurs between Liddesdale and Ruthwell. In the valleys of the Liddel and the Esk the following zones are represented which are given in ascending order: (1) The Whita Sandstone, (2) the Cementstone group, (3) the Fell Sandstones, (4) the Glencartholm volcanic group, (5) Marine limestone group with Coal seams, (6) Millstone Grit, (7) Rowanburn coal group, (8) Byreburn coal group, (9) Red Sandstones of Canonbie yielding plants characteristic of the Upper Coal Measures. The coal-seams of the Rowanburn field have been chiefly wrought, and in view of their exhaustion bores have been sunk to prove the coals beneath the red sandstone of upper Carboniferous age. From a palaeontological point of view the Glencartholm volcanic zone is of special interest, as the calcareous shale associated with the tuffs has yielded a large number of new species of fishes, decapod crustaceans, phyllopods and scorpions. The Triassic rocks rest unconformably on all older formations within the county. In the tract along the Solway Firth they repose on the folded and eroded edges of the Carboniferous strata, and when traced westwards to the Dumfries basin they rest directly on the Silurian platform. They occur in five areas, (1) between Annan and the mouth of the Esk, (2) the Dumfries basin, (3) the Thornhill basin, (4) at Lochmaben and Corncockle Moor, (5) at Moffat. The strata consist of breccias, false-bedded sandstones and marls, the sandstones being extensively quarried for building purposes. In the sandstones of Corncockle Moor reptilian footprints have been obtained. In the Thornhill basin there is a thin zone of volcanic rocks at the base of this series which are evidently on the horizon of the lavas beneath the Mauchline sandstones in Ayrshire. In the Sanquhar basin there are small outliers of lavas probably of this age and several vents filled with agglomerate from which these igneous materials in the Thornhill basin may have been derived. There are several striking examples of basalt dikes of Tertiary age, one having been traced from the Lead Hills south-east by Moffat, across Eskdalemuir to the English border.

Climate and Industries.—The climate is mild, with a mean yearly temperature of 48° F. (January, 38.5°; July, 59.5°), and the average annual rainfall is 53 ins. Towards the middle of the 18th century farmers began to raise stock for the south, and a hundred years later 20,000 head of heavy cattle were sent annually to the English markets. The Galloways, which were the breed in vogue at first, have been to a large extent replaced by shorthorns and Ayrshire dairy cattle. Sheep breeding, of later origin, has attained to remarkable dimensions, the walks in the higher hilly country being given over to Cheviots, and the richer pasture of the low-lying farms being reserved for half-bred lambs, a cross of Cheviots and Leicesters or other long-woolled rams. Pig-feeding, once important, has declined before the imports of bacon from foreign countries. Horse-breeding is pursued on a considerable scale. Grain crops, of which oats are the principal, show a downward tendency. Arable farms range from 100 acres to 300 acres, and pastoral from 300 to 3000 acres.

In general the manufactures are only of local importance and mostly confined to Dumfries and a few of the larger towns. Langholm is famous for its tweeds; breweries and distilleries are found at Annan, Sanquhar and elsewhere; some shipping is carried on at Annan and Dumfries; and the salmon fisheries of the Nith and Annan and the Solway Firth are of value.

Communications.—The Glasgow & South-Western railway from Glasgow to Carlisle runs through Nithsdale, practically following the course of the river, and lower Annandale to the Border. The Caledonian railway runs through Annandale, throwing off at Beattock a small branch to Moffat, at Lockerbie a cross-country line to Dumfries, and at Kirtlebridge a line that ultimately crosses the Solway to Bowness. From Dumfries westwards there is communication with Castle Douglas, Kirkcudbright, Newton Stewart, Stranraer and Portpatrick. The North British railway sends a short line to Langholm from Riddings Junction in Cumberland, giving access to Carlisle and, by the Waverley route, to Edinburgh.

There is also coach service between various points, as from Dumfries to New Abbey and Dalbeattie, and from Langholm to Eskdalemuir.

Population and Government.—The population in 1891 was 74,245, and in 1901, 72,571, when there were 176 persons who spoke Gaelic and English. The chief towns are Annan (pop. in 1901, 4309), Dumfries (14,444), Langholm (3142), Lockerbie (2358) and Moffat (2153). The county returns one member to parliament. Dumfries, the county town, Annan, Lochmaben and Sanquhar are royal burghs; Dumfries forms a sheriffdom with the shires of Kirkcudbright and Wigtown, and there is a resident sheriff-substitute at Dumfries, who sits also at Annan, Langholm and Lockerbie. The shire is under school-board jurisdiction, and some of the public schools earn grants for higher education. The county council and most of the borough councils give the bulk of the "residue" grant to the county committee on secondary education, which is thus enabled, besides assisting building schemes, to subsidize high schools, to provide bursaries and apparatus, and to carry on science and technical classes, embracing agriculture, dairying (at Kilmarnock Dairy school) and practical chemistry. There are academies at Dumfries, Annan, Moffat and other centres.

History.—The British tribe which inhabited this part of Scotland was called by the Romans Selgovae. They have left many signs of their presence, such as hill forts in the north, stone circles (as in Dunscore and Eskdalemuir), camps (Dryfesdale), tumuli and cairns (Closeburn), and sculptured stones (Dornock). The country around Moffat especially is rich in remains. At Holywood, near Dumfries, there stand the relic of the grove of sacred oaks from which the place derived its name, and a stone circle known locally as the Twelve Apostles. In the parish church of Ruthwell (pron. Rivvel: the "rood, or cross, well") is preserved an ancient cross which tells in Runic characters the story of the Crucifixion. There are traces of the Roman roads which ran by Dalveen Pass into Clydesdale and up the Annan to Tweeddale, and at Birrens is one of the best-preserved examples of a Roman camp. Roman altars, urns and coins are found in many places. Upon the withdrawal of the Romans, the Selgovae were conquered by Scots from Ireland, who, however, fused with the natives. The Saxon conquest of Dumfriesshire does not seem to have been thorough, the people of Nithsdale and elsewhere maintaining their Celtic institutions up to the time of David I.

As a Border county Dumfriesshire was the scene of stirring deeds at various epochs, especially in the days of Robert Bruce. Edward I. besieged Carlaverock Castle, and the factions of Bruce (who was lord of Annandale), John Comyn and John Baliol were at constant feud. The Border clans, as haughty and hot-headed as the Gaels farther north, were always at strife. There is record of a bloody fight in Dryfesdale in 1593, when the Johnstones slew 700 Maxwells, and, overtaking the fugitives at Lockerbie, there massacred most of the remnant. These factions embroiled the dalesmen until the 18th century. The highlands of the shire afforded retreat to the persecuted Covenanters, who, at Sanquhar, published in 1680 their declaration against the king, anticipating the principles of the "glorious Revolution" by several years. Prince Charles Edward's ambition left the shire comparatively untouched, for the Jacobite sentiment made little appeal to the people.

Dumfriesshire is inseparably connected with the name of Robert Burns, who farmed at Ellisland on the Nith for three years, and spent the last five years of his life at Dumfries. Thomas Carlyle was born at Ecclefechan, in a house still standing, and was buried beside his parents in the kirkyard of the old Secession church (now the United Free). His farm of Craigenputtock was left to Edinburgh University in order to found the John Welsh bursaries in classics and mathematics.

See W. M'Dowall, *History of the Burgh of Dumfries* (Edinburgh, 1887); Sir Herbert Maxwell, *Dumfries and Galloway* (Edinburgh and London, 1897); J. Macdonald and J. Barbour, *Birrens and its Antiquities* (Dumfries, 1897); Sir William Fraser, *The Book of Carlaverock* (Edinburgh, 1873); *The Douglas Book* (Edinburgh, 1885); *The Annandale Book* (Edinburgh, 1894); G. Neilson, *Annandale under the Bruces* (Annan, 1887); C.T. Ramage, *Drumlanrig Castle and the Douglases* (Dumfries, 1876).

DÜMICHEN, JOHANNES (1833-1894), German Egyptologist, was born near Grossglogau. He studied philology and theology in Berlin and Breslau. Subsequently he became a pupil of Lepsius and Brugsch, and devoted himself to the study of Egyptian inscriptions. He travelled widely in Egypt, and published his results in a number of

important books. In 1872 he was chosen professor of Egyptology at Strassburg. The value of his work consists not only in the stores of material which he collected, but also in the success with which he dealt with many of the problems raised by the inscriptions.

Among his works are *Bauurkunde des Tempels von Dendera* (1865); *Geographische Inschriften altagyptischer Denkmaler* (4 vols., 1865-1885); *Altagyptische Kalenderinschriften* (1866); *Altagypt. Tempelinschriften* (2 vols., 1867); *Historische Inschriften altagypt. Denkmaler* (2 vols., 1867-1869); *Baugeschichte und Beschreibung des Denderatempels* (Strassburg, 1877); *Die Oasen der libyschen Wüste* (1878); *Die kalendarischen Opferfestlisten von Medinet-Habu*(1881); *Gesch. des alten Äegypten* (1878-1883); *Der Grabpalast des Patuamenap in der thebanischen Nekropolis* (1884-1894).

DÜMMLER, ERNST LUDWIG (1830-1902), German historian, the son of Ferdinand Dümmler (1777-1846), a Berlin bookseller, was born in Berlin, on the 2nd of January 1830. He studied at Bonn under J.W. Löbell (1786-1863), under L. von Ranke and W. Wattenbach, and his doctor's dissertation, *De Arnulfo Francorum rege* (Berlin, 1852), was a notable essay. He entered the faculty at Halle in 1855, and started an historical *Seminar*. In 1858 he became professor extraordinary, in 1866 full professor. In 1875 he became a member of the revised committee directing the *Monumenta Germaniae historica*, himself undertaking the direction of the section *Antiquitates*, and in 1888 became president of the central board in Berlin. This was an official recognition of Dümmler's leading position among German historians. In addition to numerous critical works and editions of texts, he published *Piligrim von Passau und das Erzbistum Lorch* (1854), *Über die älteren Slawen in Dalmatien* (1856), *Das Formelbuch des Bischofs Salomo III. von Konstanz* (1857) and *Anselm der Peripatetiker* (1872). But his great work was the *Geschichte des ostfränkischen Reiches* (Berlin, 1862-1865, in 2 vols.; 2nd ed. 1887-1888, in 3 vols.). In conjunction with Wattenbach he completed the *Monumenta Alcuiniana* (Berlin, 1873), which had been begun by Philipp Jaffé, and with R. Köpke he wrote *Kaiser Otto der Grosse* (Leipzig, 1876). He edited the first and second volumes of the *Poëtae latini aevi Carolini* for the *Monumenta Germaniae historica* (Berlin, 1881-1884). Dümmler died in Berlin on the 11th of September 1902.

His son, Ferdinand (1859-1896), who won some reputation as an archaeologist and philologist, was professor at the university of Basel from 1890 until his death on the 15th of November 1896.

DUMONT, the name of a family of prominent French artists. François Dumont (1688-1726), a sculptor, best known for his figures in the church of Saint Sulpice, Paris, was the brother of the painter Jacques Dumont,[1] known as "le Romain" (1701-1781), whose chief success was gained with a great allegorical composition for the Paris *hôtel-de-ville* in 1761. François's son Edme (1720-1775), the latter's son Jacques Edme (1761-1844), and the last-named's son Augustin Alexander (1801-1884) were also famous sculptors.

See G. Vattier, *Une Famille d'artistes* (1890).

1 Not to be confounded with his contemporary Jean Joseph Dumons (1687-1779), sometimes called Dumont, best known for his designs for the Aubusson tapestries.

DUMONT, ANDRÉ HUBERT (1809-1857), Belgian geologist, was born at Liége on the 15th of February 1809. His first work was a masterly *Mémoire* on the geology of the province of Liége published in 1832. A few years later he became professor of mineralogy and geology and afterwards rector in the university of Liége. His attention was now given to

the mineralogical and stratigraphical characters of the geological formations in Belgium—and the names given by him to many subdivisions of Cretaceous and Tertiary ages have been adopted. His *Mémoire sur les terrains ardennais et rhénan de l'Ardenne, du Brabant et du Condroz* (1847-1848) is notable for the care with which the mineral characters of the strata were described, but the palaeontological characters were insufficiently considered, and neither the terms "Silurian" nor "Devonian" were adopted. During twenty years he laboured at the preparation of a geological map of Belgium (1849). He spared no pains to make his work as complete as possible, examining on foot almost every area of importance in the country. Journeying to the more southern parts of Europe, he investigated the shores of the Bosphorus, the mountains of Spain and other tracts, and gradually gathered materials for a geological map of Europe: a work of high merit which was "one of the first serious attempts to establish on a larger scale the geological correlation of the various countries of Europe." The Geological Society of London awarded him in 1840 the Wollaston medal. He died at Liége on the 28th of February 1857.

See Memoir by Major-General J.E. Portlock in *Address to Geol. Soc.* (London, 1858).

DUMONT, FRANÇOIS (1751-1831), French miniature painter, was born at Lunéville (Meurthe), and was left an orphan when quite young, with five brothers and sisters to support. He was for a while a student under Jean Girardet, and then, on the advice of a Lunéville Academician, Madame Coster, set up a studio for himself. In 1784 he journeyed to Rome, returning after four years' careful study, and in 1788 was accepted as an Academician and granted an apartment in the Louvre. He married the daughter of Antoine Vestier, the miniature painter, and had two sons, Aristide and Bias, both of whom became painters. He was one of the three greatest miniature painters of France, painting portraits of Louis XVI. and Marie Antoinette, Louis XVIII. and Charles X., and of almost all the important persons of his day. His own portrait was engraved both by Audouin and by Tardieu. He resided the greater part of his life in Paris, and there he died. A younger brother, known as Tony Dumont, was also a miniature painter, a pupil of his brother, a frequent exhibitor and the recipient of a medal from the Academy in 1810. Each artist signed with the surname only, and there is some controversy concerning the attribution to each artist of his own work. Tony was an expert violinist and delighted in painting portraits of persons who were playing upon the violin. Many of Dumont's finest paintings came into the collection of Mr J. Pierpont Morgan, but others are in the Louvre, presented by the heir of Bias Dumont. The work of both painters is distinguished by breadth, precision and a charming scheme of colouring, and the unfinished works of the elder brother are amongst some of the most beautiful miniatures ever produced.

See *The History of Portrait Miniatures*, by G.C. Williamson (London, 1904); also the privately printed *Catalogue of the Collection of Miniatures of Mr J. Pierpont Morgan*, vol. iv.

(G. C. W.)

DUMONT, JEAN (d. 1726), French publicist, was born in France in the 17th century, the precise date being unknown. He followed the profession of arms; but, not obtaining promotion so rapidly as he expected, he quitted the service and travelled through different parts of Europe. He stopped in Holland with the intention of publishing an account of his travels. But in the interval, at the request of his bookseller, he wrote and published several pamphlets, which were eagerly sought after, owing to the unceremonious manner in which he treated the ministry of France. This freedom having deprived him of all hope of employment in his own country, he thought of forming a permanent establishment in that where he resided, and accordingly commenced a course of lectures on public law. The project succeeded far beyond his expectations; and some useful compilations which he published about the same period made him favourably known in other countries. The emperor appointed him his historiographer, and some time afterwards conferred on him the title of baron de Carlscroon. He died at Vienna in 1726, at an advanced age.

The following is a list of his publications:—(1) *Voyages en France, en Italie, en Allemagne, à Malte, et en Turquie* (Hague, 1699, 4 vols. 12mo); (2) *Mémoires politiques pour servir à la parfaite intelligence de l'histoire de la Paix de Ryswick* (Hague, 1699, 4 vols. 12mo); (3) *Recherches modestes des causes de la présente guerre, en ce qui concerne les Provinces Unies* (1713, 12mo); (4) *Recueil de traités d'alliance, de pai, et de commerce entre les rois, princes, et états, depuis la Paix de Münster* (Amsterdam, 1710, 2 vols. 12mo); (5) *Soupirs de l'Europe à la vue du projet de paix contenu dans la harangue de la reine de la Grande-Bretagne* (1712, 12mo); (6) *Corps universel diplomatique du droit des gens, contenant un recueil des traités de paix, d'alliance, &c., faits en Europe, depuis Charlemagne jusqu'à présent* (Amsterdam, 1626, and following years, 8 vols. fol., continued after Dumont's death by J. Rousset); and (7) *Batailles gagnées par le Prince Eugène de Savoie* (Hague, 1723). Dumont was also the author of *Lettres historiques contenant ce qui se passe de plus important en Europe* (12mo). This periodical, which was commenced in 1692, two volumes appearing annually, Dumont conducted till 1710, from which time it was continued by Basnage and others until 1728. The earlier volumes are much prized.

DUMONT, PIERRE ÉTIENNE LOUIS (1759-1829), French political writer, was born on the 18th of July 1759 at Geneva, of which his family had been citizens of good repute from the days of Calvin. He was educated for the ministry at the college of Geneva, and in 1781 was chosen one of the pastors of the city. The political troubles which disturbed Geneva in 1782, however, suddenly turned the course of his life. He belonged to the liberals or democrats, and the triumph of the aristocratic party, through the interference of the courts of France and Sardinia, made residence in his native town impossible, though he was not among the number of the proscribed. He therefore went to join his mother and sisters at St Petersburg. In this he was probably influenced in part by the example of his townsman Pierre Lefort, the first tutor, minister, and general of the tsar. At St Petersburg he was for eighteen months pastor of the French church. In 1785 he removed to London, Lord Shelburne, then a minister of state, having invited him to undertake the education of his sons. It was at the house of Lord Shelburne, now 1st marquess of Lansdowne, where he was treated as a friend or rather member of the family, that he became acquainted with many illustrious men, amongst others Fox, Sheridan, Lord Holland and Sir Samuel Romilly. With the last of these he formed a close and enduring friendship, which had an important influence on his life and pursuits.

In 1788 Dumont visited Paris with Romilly. During a stay of two months in that city he had almost daily intercourse with Mirabeau, and a certain affinity of talents and pursuits led to an intimacy between two persons diametrically opposed to each other in habits and in character. On his return from Paris Dumont made the acquaintance of Jeremy Bentham. Filled with admiration for the genius of Bentham, Dumont made it one of the chief objects of his life to recast and edit the writings of the great English jurist in a form suitable for the ordinary reading public. This literary relationship was, according to Dumont's own account, one of a somewhat peculiar character. All the fundamental ideas and most of the illustrative material were supplied in the manuscripts of Bentham; Dumont's task was chiefly to abridge by striking out repeated matter, to supply lacunae, to secure uniformity of style, and to improve the French. The following works of Bentham were published under his editorship: *Traité de législation civile et pénale* (1802), *Théorie des peines et des récompenses* (1811), *Tactique des assemblées législatives* (1815), *Traité des preuves judiciaires* (1823) and *De l'organization judiciaire et de la codification* (1828).

In the summer of 1789 Dumont went to Paris. The object of the journey was to obtain through Necker, who had just returned to office, an unrestricted restoration of Genevese liberty, by cancelling the treaty of guarantee between France and Switzerland, which prevented the republic from enacting new laws without the consent of the parties to this treaty. The proceedings and negotiations to which this mission gave rise necessarily brought Dumont into connexion with most of the leading men in the Constituent Assembly, and made him an interested spectator, sometimes even a participator, indirectly, in the events of the French Revolution. The same cause also led him to renew his acquaintance with Mirabeau, whom he found occupied with his duties as a deputy, and with the composition of his journal, the *Courier de Provence*. For a time Dumont took an active and very efficient part in the conduct of this journal, supplying it with reports as well as original articles, and also furnishing Mirabeau with speeches to be delivered or rather read in the assembly, as related

in his highly instructive and interesting posthumous work entitled *Souvenirs sur Mirabeau* (1832). In fact his friend George Wilson used to relate that one day, when they were dining together at a *table d'hôte* at Versailles, he saw Dumont engaged in writing the most celebrated paragraph of Mirabeau's address to the king for the removal of the troops. He also reported such of Mirabeau's speeches as he did not write, embellishing them from his own stores, which were inexhaustible. But this co-operation soon came to an end; for, being attacked in pamphlets as one of Mirabeau's writers, he felt hurt at the notoriety thus given to his name in connexion with a man occupying Mirabeau's peculiar position, and returned to England in 1791.

In 1801 he travelled over various parts of Europe with Lord Henry Petty, afterwards 3rd marquess of Lansdowne, and on his return settled down to the editorship of the works of Bentham already mentioned. In 1814 the restoration of Geneva to independence induced Dumont to return to his native place, and he soon became the leader of the supreme council. He devoted particular attention to the judicial and penal systems of his native state, and many improvements on both are due to him. He died at Milan when on an autumn tour on the 29th of September 1829.

DUMONT D'URVILLE, JULES SÉBASTIEN CÉSAR (1790-1842), French navigator, was born at Condé-sur-Noireau, in Normandy, on the 23rd of May 1790. The death of his father, who before the revolution had held a judicial post in Condé, devolved the care of his education on his mother and his maternal uncle, the Abbé de Croizilles. Failing to pass the entrance examination for the École Polytechnique, he went to sea in 1807 as a novice on board the "Aquilon." During the next twelve years he gradually rose in the service, and added a knowledge of botany, entomology, English, German, Spanish, Italian and even Hebrew and Greek to the professional branches of his studies. In 1820, while engaged in a hydrographic survey of the Mediterranean, he was fortunate enough to recognize the Venus of Milo (Melos) in a Greek statue recently unearthed, and to secure its preservation by the report he presented to the French ambassador at Constantinople. A wider field for his energies was furnished in 1822 by the circumnavigating expedition of the "Coquille" under the command of his friend Duperrey; and on its return in 1825 his services were rewarded by promotion to the rank of *capitaine de frégate*, and he was entrusted with the control of a similar enterprise, with the especial purpose of discovering traces of the lost explorer La Pérouse, in which he was successful. The "Astrolabe," as he renamed the "Coquille," left Toulon on the 25th of April 1826, and returned to Marseilles on the 25th of March 1829, having traversed the South Atlantic, coasted the Australian continent from King George's Sound to Port Jackson, charted various parts of New Zealand, and visited the Fiji Islands, the Loyalty Islands, New Caledonia, New Guinea, Amboyna, Van Diemen's Land, the Caroline Islands, Celebes and Mauritius. Promotion to the rank of *capitaine de vaisseau* was bestowed on the commander in August 1829; and in August of the following year he was charged with the delicate task of conveying the exiled king Charles X. to England. His proposal to undertake a voyage of discovery to the south polar regions was discouraged by Arago and others, who criticized the work of the previous expedition in no measured terms; but at last, in 1837, all difficulties were surmounted, and on the 7th of September he set sail from Toulon with the "Astrolabe" and its convoy "La Zélée." On the 15th of January 1838 they sighted the Antarctic ice, and soon after their progress southward was blocked by a continuous bank, which they vainly coasted for 300 m. to the east. Returning westward they visited the South Orkney Islands and part of the New Shetlands, and discovered Joinville Island and Louis Philippe Land, but were compelled by scurvy to seek succour at Talcahuano in Chile. Thence they proceeded across the Pacific and through the Asiatic archipelago, visiting among others the Fiji and the Pelew Islands, coasting New Guinea, and circumnavigating Borneo. In 1840, leaving their sick at Hobart Town, Tasmania, they returned to the Antarctic region, and on the 21st of the month were rewarded by the discovery of Adélie Land, which D'Urville named after his wife, in 140° E. The 6th of November found them at Toulon. D'Urville was at once appointed *contre-amiral*, and in 1841 he received the gold medal of the Société de Géographie. On the 8th of May 1842 he was killed, with his wife and son, in a railway accident near Meudon.

His principal works are—*Enumeratio plantarum quas in insulis Archipelagi aut littoribus Ponti Euxini*, &c. (1822); *Voyage de la corvette "l'Astrolabe," 1826-1829* (Paris, 1830-1835),

and *Voyage au pôle sud et dans l'Océanie, 1837-1840* (Paris, 1842-1854), in each of which his scientific colleagues had a share; *Voyages autour du monde; résumé général des voyages de Magellan*, &c. (Paris, 1833 and 1844). An island (also called Kairu) off the north coast of New Guinea, and a cape on the same coast, bear the name of D'Urville.

DUMORTIERITE, a mineral described in 1881 by M.F. Gonnard, who named it after Eugène Dumortier, a palaeontologist of Lyons, France. It is essentially a basic aluminium borosilicate, belonging to the orthorhombic system; it occurs usually in fibrous forms, of smalt-blue, greenish-blue, lavender or almost black colour, and exhibits strong pleochroism. According to W.T. Schaller (*Amer. Journ. Sci.*, 1905 (iv.), 19, p. 211) a purple colour may be due to the presence of titanium. Analyses of some specimens point to the formula $(SiO_4)_3Al(AlO)_7(BO)H$, which, written in this form, explains the analogy with andalusite and the alteration into muscovite. Dumortierite occurs in gneiss at Chaponost, near Lyons, and at a few other European localities; it is found also in the United States, being known from near New York City, from Riverside and San Diego counties, California, and from Yuma county, Arizona. The last-named locality yields the mineral in some quantity in the form of dense fibres embedded in quartz, to which it imparts a blue colour. The mineral aggregate is polished as an ornamental stone, rather resembling lapis-lazuli.

DUMOULIN, CHARLES [Molinaeus] (1500-1566), French jurist, was born in Paris in 1500. He began practice as an advocate before the parlement of Paris. Dumoulin turned Calvinist, and when the persecution of the Protestants began he went to Germany, where for a long time he taught law at Strassburg, Besançon and elsewhere. He returned to France in 1557. Dumoulin had, in 1552, written *Commentaire sur l'édit du roi Henri II sur les petites dates*, which was condemned by the Sorbonne, but his *Conseil sur le fait du concile de Trente* created a still greater stir, and aroused against him both the Catholics and the Calvinists. He was imprisoned by order of the parlement until 1564. It was as a jurist that Dumoulin gained his great reputation, being regarded by his contemporaries as the "prince of jurisconsults." His remarkable erudition and breadth of view had a considerable effect on the subsequent development of French law. He was a bitter enemy of feudalism, which he attacked in his *De feudis* (Paris, 1539). Other important works were his commentaries on the customs of Paris (Paris, 1539, 1554; Frankfort, 1575; Lausanne, 1576), valuable as the only commentary on those in force in 1510, and the *Extricatio labyrinthi dividui et individui*, a treatise on the law of surety.

A collected edition of Dumoulin's works was published in Paris in 1681 (5 vols.).

DUMOURIEZ, CHARLES FRANÇOIS (1739-1823), French general, was born at Cambray in 1739. His father was a commissary of the royal army, and educated his son most carefully in various branches of learning. The boy continued his studies at the college of Louis-le-Grand, and in 1757 began his military career as a volunteer in the campaign of Rossbach. He received a commission for good conduct in action, and served in the later German campaigns of the Seven Years' War with distinction; but at the peace he was retired as a captain, with a small pension and the cross of St Louis. Dumouriez then visited Italy and Corsica, Spain and Portugal, and his memorials to the duc de Choiseul on Corsican affairs led to his re-employment on the staff of the French expeditionary corps sent to the island, for which he gained the rank of lieutenant-colonel. After this he became a member of the *Secret du roi*, the secret service under Louis XV., where his fertility of diplomatic resource had full scope. In 1770 he was sent on a mission into Poland, where in addition to his political business he organized a Polish militia. The fall of Choiseul brought about his recall,

and somewhat later he was imprisoned in the Bastille, where he spent six months, occupying himself with literary pursuits. He was then removed to Caen, where he was detained until the accession of Louis XVI.

Upon his release in 1774 he married his cousin Mlle de Broissy, but he was neglectful and unfaithful, and in 1789 the pair separated, the wife taking refuge in a convent. Meanwhile Dumouriez had devoted his attention to the internal state of his own country, and amongst the very numerous memorials which he sent in to the government was one on the defence of Normandy and its ports, which procured him in 1778 the post of commandant of Cherbourg, which he administered with much success for ten years. He became *maréchal de camp* in 1788; but his ambition was not satisfied, and at the outbreak of the Revolution, seeing the opportunity for carving out a career, he went to Paris, where he joined the Jacobin Club. The death of Mirabeau, to whose fortunes he had attached himself, was a great blow to him; but, promoted to the rank of lieutenant-general and commandant of Nantes, his opportunity came after the flight to Varennes, when he attracted attention by offering to march to the assistance of the Assembly. He now attached himself to the Girondist party, and on the 15th of March 1792 was appointed minister of foreign affairs. He was mainly responsible for the declaration of war against Austria (April 20), and the invasion of the Low Countries was planned by him. On the dismissal of Roland, Clavière and Servan (June 13), he took the latter's post of minister of war, but resigned it two days later on account of the king's refusal to come to terms with the Assembly, and went to join the army of Marshal Lückner. After the *émeute* of August 10 and Lafayette's flight he was appointed to the command of the "Army of the Centre," and at the same moment the Coalition assumed the offensive. Dumouriez acted promptly. His subordinate Kellermann repulsed the Prussians at Valmy (September 20, 1792), and he himself severely defeated the Austrians at Jemappes (November 6). Returning to Paris, he was received with a popular ovation; but he was out of sympathy with the extremists in power, his old-fashioned methodical method of conducting war exposed him to the criticism of the ardent Jacobins, and a defeat would mean the end of his career. Defeat coming to him at Neerwinden in January 1793, he ventured all on a desperate stroke. Arresting the commissaries of the Convention sent to inquire into his conduct, he handed them over to the enemy, and then attempted to persuade his troops to march on Paris and overthrow the revolutionary government. The attempt failed, and Dumouriez, with the duc de Chartres (afterwards King Louis Philippe) and his brother the duc de Montpensier, fled into the Austrian camp.

He now wandered from country to country, occupied in ceaseless intrigues with Louis XVIII., or for setting up an Orleanist monarchy, until in 1804 he settled in England, where the government conferred on him a pension of £1200 a year. He became a valuable adviser to the War Office in connexion with the struggle with Napoleon, though the extent to which this went was only known in public many years later. In 1814 and 1815 he endeavoured to procure from Louis XVIII. the bâton of a marshal of France, but was refused. He died at Turville Park, near Henley-on-Thames, on the 14th of March 1823. His memoirs were published at Hamburg in 1794. An enlarged edition, *La Vie et les mémoires du Général Dumouriez*, appeared at Paris in 1823. Dumouriez was also the author of a large number of political pamphlets.

See A. von Boguslawski, *Das Leben des Generals Dumouriez* (Berlin, 1878-1879); *Revue des deux mondes* (15th July, 1st and 15th August 1884); H. Welschinger, *Le Roman de Dumouriez* (1890); A. Chuquet, *La Première Invasion, Valmy, La Retraite de Brunswick, Jemappes, La Trahison de Dumouriez* (Paris, 1886-1891); A. Sorel, *L'Europe et la Révolution française* (1885-1892); J. Holland Rose and A.M. Broadley, *Dumouriez and the Defence of England* (1908); E. Daudet, *La Conjuration de Pichegru et les complots royalistes du midi et du l'est, 1795-1797* (Paris, 1901).

DUMP. (1) (Of obscure origin; corresponding in form and possibly connected with the word, are the Mid. Dutch *domp*, mist or haze, and the Ger. *dumpf*, dull or dazed), a state of wonder, perplexity or melancholy. The word thus occurs particularly in the plural, in such phrases as "doleful dumps." It was also formerly used for a tune, especially one of a mournful kind, a dirge. (2) (Connected with "dumpy," but appearing later than that word, and also of obscure origin), something short and thick, and hence used of many objects such as a lead counter or medal, of a coin formerly used in Australia, formed by punching a

circular piece out of a Spanish dollar, and of a short thick bolt used in shipbuilding. (3) (Probably of Norse origin, cf. Nor. *dumpa*, and Dan. *dumpe*, meaning “to fall” suddenly, with a bump), to throw down in a heap, and hence particularly applied to the depositing of any large quantity of material, to the shooting of rubbish, or tilting a load from a cart. It is thus used of the method of disposal of the masses of gravel, &c., disintegrated by water in the hydraulic method of gold mining. A “dump” or “dumping-ground” is thus the place where such waste material is deposited. The use of the term “dumping” in the economics of international trade has come into prominence in the tariff reform controversy in the United Kingdom. It is sometimes used loosely of the importing of foreign goods at prices below those ruling in the importing country; but strictly the term is applied to the importing, at a price below the cost of production, of the surplus of manufactures of a foreign country over and above what has been disposed of in its home market. The ability to sell such a surplus in a foreign market below the cost of production depends on the prices of the home market being artificially sustained at a sufficiently high level by a monopoly or by a tariff or by bounties. An essential factor in the operation of “dumping” is the lessening of the whole cost of production by manufacture on a large scale.

DUNASH, the name of two Jewish scholars of the 10th century.

1. Dunash Ben Labraṭ, grammarian and poet, belonged to the brilliant circle attracted to Cordova by Ḥasdai, and took a large share in promoting the Jewish “Golden Age” under the Moors in Andalusia. Dunash not only helped in the foundation of a school of scientific philology, but adapted Arabian metres to Hebrew verse, and thereby gave an impulse to the neo-Hebraic poetry, which reached its highest level in Spain.

2. Dunash Ibn Tamim was, like the preceding, a leader in the critical study of language among Arabic-speaking Jews. Professor Bacher says of him: “In the history of Hebrew philology, Ibn Tamim ranks as one of the first representatives of the systematic comparison of Hebrew and Arabic.” The philological researches of the 10th century were closely associated with the Spanish-Moorish culture of the period.

(I. A.)

DUNBAR, GEORGE (1774-1851), English classical scholar and lexicographer, was born at Coldingham in Berwickshire. In early life he followed the humble profession of gardening, but, having been permanently injured by an accident, devoted himself to the study of the classics. When about thirty years of age, he settled in Edinburgh, where he obtained a tutorship in the family of Lord Provost Fettes. In 1807 he succeeded Andrew Dalzel as professor of Greek in the university. Dunbar held his appointment till his death on the 6th of December 1851. Although a man of great energy and industry, Dunbar did not produce anything of permanent value. He deserves mention, however, for his Greek-English and English-Greek lexicon (1840), on the compilation of which he spent eight years. Although now superseded, it was the best work of its kind that had appeared in England.

The little that is known of Dunbar’s life will be found in the *Caledonian Mercury* (8th of December 1851).

DUNBAR, PAUL LAURENCE (1872-1906), American author, of negro descent, was born in Dayton, Ohio, on the 27th of June 1872. He graduated (1891) from the Dayton high school, had a varied experience as elevator boy, mechanic and journalist, and in 1897-1898 held a position on the staff of the Library of Congress, resigning in December 1898 to devote himself to literary work. He died of consumption at his home in Dayton on the 8th of

February 1906. His poetry was brought to the attention of American readers by William Dean Howells, who wrote an appreciative introduction to his *Lyrics of Lowly Life* (1896). Subsequently Dunbar published eleven other volumes of verse, three novels and five collections of short stories. Some of his short stories and sketches, especially those dealing with the American negro, are charming; they are far superior to his novels, which deal with scenes in which the author is not so much at home. His most enduring work, however, is his poetry. Some of this is in literary English, but the best is in the dialect of his people. In it he has preserved much of their very temperament and outlook on life, usually with truth and freshness of feeling, united with a happy choice of language and much lyrical grace and sweetness, and often with rare humour and pathos. These poems of the soil are a distinct contribution to American literature, and entitle the author to be called pre-eminently the poet of his race in America.

See *Life and Works of Paul Laurence Dunbar* (Naperville, Ill., 1907), with a biography by L.K. Wiggins.

DUNBAR, WILLIAM (*c.* 1460-*c.* 1520), Scottish poet, was probably a native of East Lothian. This is assumed from a satirical reference in the *Flyting of Dunbar and Kennedie*, where, too, it is hinted that he was a member of the noble house of Dunbar. His name appears in 1477 in the Register of the Faculty of Arts at St Andrews, among the Determinants or Bachelors of Arts, and in 1479 among the masters of the university. Thereafter he joined the order of Observantine Franciscans, at St Andrews or Edinburgh, and proceeded to France as a wandering friar. He spent a few years in Picardy, and was still abroad when, in 1491, Bothwell's mission to secure a bride for the young James IV. reached the French court. There is no direct evidence that he accompanied Blackadder, archbishop of Glasgow, on a similar embassy to Spain in 1495. On the other hand, we know that he proceeded with that prelate to England on his more successful mission in 1501. Dunbar had meanwhile (about 1500) returned to Scotland, and had become a priest at court, and a royal pensioner. His literary life begins with his attachment to James's household. All that is known of him from this date to his death about 1520 is derived from the poems or from entries in the royal registers of payments of pension and grants of livery. He is spoken of as the Rhymer of Scotland in the accounts of the English privy council dealing with the visit of the mission for the hand of Margaret Tudor, rather because he wrote a poem in praise of London, than because, as has been stated, he held the post of laureate at the Scottish court. In 1511 he accompanied the queen to Aberdeen and commemorated her visit in verse. Other pieces such as the *Orisoun* ("Quhen the Gouernour past in France"), apropos of the setting out of the regent Albany, are of historical interest, but they tell us little more than that Dunbar was alive. The date of his death is uncertain. He is named in Lyndsay's *Testament and Complaynt of the Papyngo* (1530) with poets then dead, and the reference precedes that to Douglas who had died in 1522. He certainly survived his royal patron. We may not be far out in saying that he died about 1520.

Dunbar's reputation among his immediate successors was considerable. By later criticism, stimulated in some measure by Scott's eulogy that he is "unrivalled by any which Scotland has produced," he has held the highest place among the northern makars. The praise, though it has been at times exaggerated, is on the whole just, certainly in respect of variety of work and mastery of form. He belongs, with James I., Henryson and Douglas, to the Scots Chaucerian school. In his allegorical poems reminiscences of the master's style and literary habit are most frequent. Yet, even there, his discipleship shows certain limitations. His wilder humour and greater heat of blood give him opportunities in which the Chaucerian tradition is not helpful, or even possible. His restlessness leads us at times to a comparison with Skelton, not in respect of any parallelism of idea or literary craftsmanship, but in his experimental zeal in turning the diction and tuning the rhythms of the chaotic English which only Chaucer's genius had reduced to order. The comparison must not, however, be pushed too far. Skelton's work carries with it the interest of attempt and failure. Dunbar's command of the medium was more certain. So that while we admire the variety of his work, we also admire the competence of his effort.

One hundred and one poems have been ascribed to Dunbar. Of these at least ninety are generally accepted as his: of the eleven attributed to him it would be hard to say that they should not be considered authentic. Most doubt has clung to his verse tale *The Freiris of*

Berwik.

Dunbar's chief allegorical poems are *The Goldyn Targe* and *The Thrissil and the Rois*. The motif of the former is the poet's futile endeavour, in a dream, to ward off the arrows of Dame Beautee by Reason's "scheld of gold." When wounded and made prisoner, he discovers the true beauty of the lady: when she leaves him, he is handed over to Heaviness. The noise of the ship's guns, as the company sails off, wakes the poet to the real pleasures of a May morning. Dunbar works on the same theme in a shorter poem, known as *Beauty and the Prisoner*. *The Thrissil and the Rois* is a prothalamium in honour of James IV. and Margaret Tudor, in which the heraldic allegory is based on the familiar beast-parliament.

The greater part of Dunbar's work is occasional—personal and social satire, complaints (in the style familiar in the minor verse of Chaucer's English successors), orisons and pieces of a humorous character. The last type shows Dunbar at his best, and points the difference between him and Chaucer. The best specimen of this work, of which the outstanding characteristics are sheer whimsicality and topsy-turvy humour, is *The Ballad of Kynd Kittok*. This strain runs throughout many of the occasional poems, and is not wanting in odd passages in Dunbar's contemporaries; and it has the additional interest of showing a direct historical relationship with the work of later Scottish poets, and chiefly with that of Robert Burns. Dunbar's satire is never the gentle funning of Chaucer: more often it becomes invective. Examples of this type are *The Satire on Edinburgh*, *The General Satire*, the *Epitaph on Donald Owre*, and the powerful vision of *The Dance of the Sevin Deidlie Synnis*. In the *Flyting of Dunbar and Kennedie*, an outstanding specimen of a favourite northern form, analogous to the continental *estrif*, or *tenzone*, he and his rival reach a height of scurrility which is certainly without parallel in English literature. This poem has the additional interest of showing the racial antipathy between the "Inglis"-speaking inhabitants of the Lothians and the "Scots" or Gaelic-speaking folk of the west country.

There is little in Dunbar which may be called lyrical, and little of the dramatic. His *Interlud of the Droichis* [*Dwarf's*] *part of the Play*, one of the pieces attributed to him, is supposed to be a fragment of a dramatic composition. It is more interesting as evidence of his turn for whimsicality, already referred to, and may for that reason be safely ascribed to his pen. If further selection be made from the large body of miscellaneous poems, the comic poem on the physician Andro Kennedy may stand out as one of the best contributions to medieval Goliardic literature; *The Two Mariit Wemen and the Wedo*, as one of the richest and most effective *pastiches* in the older alliterative style, then used by the Scottish Chaucerians for burlesque purposes; *Done is a battell on the Dragon Blak*, for religious feeling expressed in melodious verse; and the well-known *Lament for the Makaris*. The main value of the last is historical, but it too shows Dunbar's mastery of form, even when dealing with lists of poetic predecessors.

The chief authorities for the text of Dunbar's poems are:— (a) the Asloan MS. (*c.* 1515); (b) the Chepman and Myllar Prints (1508) preserved in the Advocates' library, Edinburgh; (c) Bannatyne MS. (1568) in the same; (d) the Maitland Folio MS. (*c.* 1570-1590) in the Pepysian library, Magdalene College, Cambridge. Some of the poems appear in the Makculloch MS. (before 1500) in the library of the university of Edinburgh; in MS. Cotton Vitellius A. xvi., appendix to Royal MSS. No. 58, and Arundel 285, in the British Museum; in the Reidpath MS. in the university library of Cambridge; and in the Aberdeen Register of Sasines. The first complete edition was published by David Laing (2 vols., Edinburgh, 1834) with a supplement (Edinburgh, 1865). This has been superseded by the Scottish Text Society's edition (ed. John Small, Aeneas J.G. Mackay and Walter Gregor, 3 vols., Edinburgh, 1893), and by Dr Schipper's 1 vol. edition (Vienna; Kais. Akad. der Wissenschaften, 1894). The editions by James Paterson (Edinburgh, 1860) and H.B. Baildon (Cambridge, 1907) are of minor value. Selections have been frequently reprinted since Ramsay's *Ever-Green* (1724) and Hailes's *Ancient Scottish Poems* (1817). For critical accounts see Irving's *History of Scottish Poetry*, Henderson's *Vernacular Poetry of Scotland*, Gregory Smith's *Transition Period*, J.H. Millar's *Literary History of Scotland*, and the *Cambridge History of English Literature*, vol. ii. (1908). Professor Schipper's *William Dunbar, sein Leben und seine Gedichte* (with German translations of several of the poems), appeared at Berlin in 1884.

(G. G. S.)

DUNBAR (Gaelic, "the fort on the point"), a royal, municipal and police burgh, and

seaport of Haddingtonshire, Scotland. Pop. (1901) 3581. It is situated on the southern shore of the entrance to the Firth of Forth, 29¼ m. E. by N. of Edinburgh by the North British railway. Dunbar is said to have the smallest rainfall in Scotland and is a favourite summer resort. The ruins of the castle, and the remains of the Grey Friars' monastery, founded in 1218, at the west end of the town, and Dunbar House in High Street, formerly a mansion of the Lauderdales, but now used as barracks, are of historic interest. The parish church, a fine structure in red sandstone, the massive tower of which, 107 ft. high, is a landmark for sailors, dates only from 1819, but occupies the site of what was probably the first collegiate church in Scotland, and contains the large marble monument to Sir George Home, created earl of Dunbar and March by James VI. in 1605. Among other public buildings are the town hall, assembly rooms, St Catherine's hall, the Mechanics' institute and library.

There are two harbours, difficult of access owing to the number of reefs and sunken rocks. Towards the cost of building the eastern or older harbour Cromwell contributed £300. The western or Victoria harbour is a refuge for vessels between Leith Roads and the Tyne. On the advent of steam the shipping declined, and even the herring fishery, which fostered a large curing trade, has lost much of its prosperity. The industries are chiefly those of agricultural-implement making, rope-making, brewing and distilling, but a considerable business is done in the export of potatoes. Dunbar used to form one of the Haddington district group of parliamentary burghs, but its constituency was merged in that of the county in 1885.

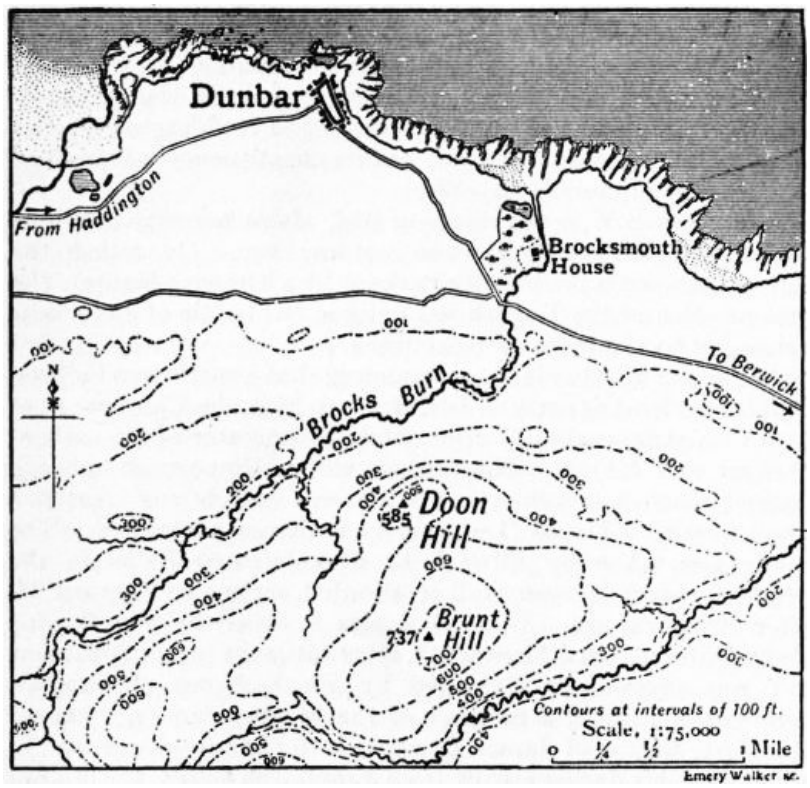
About 4 m. S.W. is the village of Biel, where, according to some authorities, William Dunbar the poet was born. One mile to the S.E. of the town is Broxmouth Park (or Brocksmouth House), the first position of the English left wing in the battle of 1650, now belonging to the duke of Roxburghe.

The site of Dunbar is so commanding that a castle was built on the cliffs at least as early as 856. In 1070 Malcolm Canmore gave it to Cospatric, earl of Northumberland, ancestor of the earls of Dunbar and March. The fortress was an important bulwark against English invasion, and the town—which was created a royal burgh by David II.—grew up under its protection. The castle was taken by Edward I., who defeated Baliol in the neighbourhood in 1296, and it afforded shelter to Edward II. after Bannockburn. In 1336 it was besieged by the English under William, Lord Montacute, afterwards 1st earl of Salisbury, but was successfully defended by Black Agnes of Dunbar, countess of March, a member of the Murray family. Joanna Beaufort, widow of James I., chose it for her residence, and in 1479, after his daring escape from Edinburgh Castle, the duke of Albany concealed himself within its walls, until he contrived to sail for France. In 1567 Mary made Bothwell keeper of the castle, and sought its shelter herself after the murder of Rizzio and again after her flight from Borthwick Castle. When she surrendered at Carberry Hill the stronghold fell into the hands of the regent Moray, by whom it was dismantled in 1568, but its ruins are still a picturesque object on the hill above the harbour.

The Battle of Dunbar was fought on the 3rd (13th) of September 1650 between the English army under Oliver Cromwell and the Scots under David Leslie, afterwards Lord Newark. It took place about 3 m. S.E. of the centre of the town, where between the hills and the sea coast there is a plain about 1 m. wide, through the middle of which the main road from Dunbar to Berwick runs. The plain and the road are crossed at right angles by the course of the Brocksburn, or Spott Burn, which at first separated the hostile armies. Rising from the right bank of the Brock is Doon Hill (650 ft.), which overlooks the lower course of the stream and indeed the whole field. For the events preceding the battle, see Great Rebellion.

Cromwell, after a war of manœuvre near Edinburgh, had been compelled by want of supplies to withdraw to Dunbar; Leslie pursued and took up a position on Doon Hill, commanding the English line of retreat on Berwick. The situation was more than difficult for Cromwell. Some officers were for withdrawing by sea, but the general chose to hold his ground, though his army was enfeebled by sickness and would have to fight on unfavourable terrain against odds of two to one. Leslie, however, who was himself in difficulties on his post among the bare hills, and was perhaps subjected to pressure from civil authorities, descended from the heights on the 2nd of September and began to edge towards his right, in order first to confront, and afterwards to surround, his opponent. The cavalry of his left wing stood fast, west of Doon Hill, as a pivot of manœuvre, the northern face of Doon (where the ground rises from the burn at an average slope of fifteen degrees and is even steeper near the summit) he left unoccupied. The centre of infantry stood on the forward slope of the long spur which runs east from Doon, and beyond them, practically on the plain, was the bulk of the Scottish cavalry. In the evening Cromwell drew up his army, under 11,000 effective men, along the ravine, and issued orders to attack the Scots at dawn of the 3rd

(13th). The left of the Scots was ineffective, as was a part of their centre of foot on the upper part of the hillside, and the English commander proposed to deal with the remainder. Before dawn the English advanced troops crossed the ravine, attacked Doon, and pinned Leslie's left; under cover of this the whole army began its manœuvre. The artillery was posted on the Dunbar side of the burn, directly opposite and north of Doon, the infantry and cavalry crossed where they could, and formed up gradually in a line south of and roughly parallel to the Berwick road, the extreme left of horse and foot, acting as a reserve, crossed at Brocksmouth House on the outer flank. The Scots were surprised in their bivouacs, but quickly formed up, and at first repulsed both the horse and the foot. But ere long Cromwell himself arrived with his reserve, and the whole English line advanced again. The fresh impulse enabled it to break the Scottish cavalry and repulse the foot, and Leslie's line of battle was gradually rolled up from right to left. In the words of an English officer, "The sun appearing upon the sea, I heard Nol say, 'Now let God arise, and let His enemies be scattered,' and following us as we slowly marched I heard him say, 'I profess they run.'" Driven into the broken ground, and penned between Doon Hill and the ravine, the Scots were indeed helpless. "They routed one another after we had done their work on their right wing," says the same officer. Ten thousand men, including almost the whole of the Scottish foot, surrendered, and their killed numbered three thousand. Few of the English were killed. "I do not believe," wrote Cromwell, "that we have lost twenty men."



The account of the battle of Dunbar here followed is that of C.H. Firth, for which see his *Cromwell*, pp. 281 ff. and references there given. For other accounts see Carlyle, *Cromwell's Letters and Speeches*, letter cxl.; Hoenig, *Cromwell*; Baldock, *Cromwell as a Soldier*; and Gardiner, *Hist. of the Commonwealth and Protectorate*, vol. i.

DUNBLANE, a police burgh of Perthshire, Scotland, on the left bank of Allan Water, a tributary of the Forth, 5 m. N. by W. of Stirling by the Caledonian railway. Pop. (1901) 2516. It is a place of great antiquity, with narrow streets and old-fashioned houses. The leading industry is the manufacture of woollens. The cathedral is situated by the side of the river, and was one of the few ecclesiastical edifices that escaped injury at the hands of the Reformers. The first church is alleged to have been erected by Blane, a saint of the 7th century, but the cathedral was founded by David I. in 1141, and almost entirely rebuilt about 1240 by Bishop Clemens. Excepting the tower, which is Early Norman and was probably

incorporated from the earlier structure, the building is of the Early Pointed style. It consists of a nave (130 ft. long, 58 ft. wide, 50 ft. high), aisles, choir (80 ft. long by 30 ft. wide), chapter-house and tower. Ruskin considered that there was “nothing so perfect in its simplicity” as the west window, the design of which resembles a leaf. After the decline of episcopacy the building was neglected for a long period, but the choir, which contains some carved oak stalls of the 16th century, was restored in 1873, and the nave roofed and restored in 1892-1895, under the direction of Sir Rowand Anderson, the architect. From the time of the Reformation the choir had been used as the parish church, but since its restoration the whole cathedral has been devoted to this purpose. The new oak roof is emblazoned with the arms of the Scottish and later British monarchs, and of the old earls of Strathearn. Several members of the families of Strathearn and Strathallan were buried in the cathedral, and three stones of blue marble in the floor of the choir are supposed to mark the graves of Lady Margaret Drummond (b. 1472), mistress of James IV., and her two sisters, daughters of Lord Drummond, who were mysteriously poisoned in 1501. An ancient Celtic cross, 6½ ft. high, stands in the north-western corner of the nave. Robert Leighton was the greatest of the bishops of Dunblane, and held the see from 1661 to 1670. The library of 1500 volumes which he bequeathed to the clergy of the diocese is housed in a building with an outside stair, standing near the cathedral, and the Bishop’s Walk by the river also perpetuates his memory. Of the bishop’s palace only a few ruins remain. The battlefield of Sheriffmuir is about 2½ m. E. of the town. A mile and a half S. of Dunblane is the estate of Keir which belonged to Sir William Stirling-Maxwell, the historian and art critic. The duke of Leeds derives the title of one of his viscounties from Dunblane.

DUNCAN, the name of two Scottish kings.

Duncan I. (d. 1040) was a son of Crinan or Cronan, lay abbot of Dunkeld, and became king of the Scots in succession to his maternal grandfather, Malcolm II., in 1034, having previously as *rex Cumbrorum* ruled in Strathclyde. His accession was “the first example of inheritance of the Scottish throne in the direct line.” Duncan is chiefly known through his connexion with Macbeth, which has been immortalized by Shakespeare. The feud between these two princes originated probably in a dispute over the succession to the throne; its details, however, are obscure, and the only fact which can be ascertained with any certainty is that Duncan was slain by Macbeth in 1040. Two of Duncan’s sons, Malcolm III. Canmore and Donald V. Bane, were afterwards kings of the Scots.

Duncan II. (d. 1094) was a son of Malcolm III. and therefore a grandson of Duncan I. For a time he lived as a hostage in England and became king of the Scots after driving out his uncle, Donald Bane, in 1093, an enterprise in which he was helped by some English and Normans. He was killed in the following year.

See W.F. Skene, *Celtic Scotland* (1876-1880), and A. Lang, *History of Scotland*, vol. i. (1900).

DUNCAN, ADAM DUNCAN, 1st Viscount (1731-1804), British naval commander, was born on the 1st of July 1731, at Lundie, in Forfarshire, Scotland. After receiving the rudiments of his education at Dundee, he was in 1746 placed under Captain Haldane, of the “Shoreham” frigate, and in 1749 he became a midshipman in the “Centurion.” In 1755 he was appointed second lieutenant of the “Norwich,” but on the arrival of that ship in America, whither, with the rest of Keppel’s squadron, it had convoyed General Braddock’s forces, he was transferred to the “Centurion.” Once again in England, he was promoted to be second lieutenant of the “Torbay,” and after three years on the home station he assisted in the attack on the French settlement of Goree, on the African coast, in which he was slightly wounded. He returned to England as first lieutenant of the “Torbay”; and in 1759 was made a commander, and in 1761 a post-captain. His vessel, the “Valiant” (74), was Commodore Keppel’s flag-ship in the expedition against Belle-Ile en Mer in that year, and also in 1762, when it took an important part in the capture of Havana. In 1778, on the recommencement

of war with France, Captain Duncan was appointed to the “Suffolk” (74), whence before the close of the year he removed to the “Monarch” (74), one of the Channel Fleet. On the 16th of January 1780, in an action off Cape St Vincent, between a Spanish squadron under Don Juan de Langara and the British fleet under Sir George Rodney, Captain Duncan in the “Monarch” was the first to engage the enemy; and in 1782, as captain of the “Blenheim” (90), he took part in Lord Howe’s relief of Gibraltar. From the rank of rear-admiral of the blue, received in 1789, he was gradually promoted until, in 1799, he became admiral of the white. In February 1795 he hoisted his flag as commander-in-chief of the North Sea fleet, appointed to harass the Batavian navy. Towards the end of May 1797, though, in consequence of the widespread mutiny in the British fleet, he had been left with only the “Adamant” (50), besides his own ship the “Venerable” (74), Admiral Duncan proceeded to his usual station off the Texel, where lay at anchor the Dutch squadron of fifteen sail of the line, under the command of Vice-Admiral de Winter. From time to time he caused signals to be made, as if to the main body of a fleet in the offing, a stratagem which probably was the cause of his freedom from molestation until, in the middle of June, reinforcements arrived from England. On the 3rd of October the admiral put into Yarmouth Roads to refit and victual his ships, but, receiving information early on the 9th that the enemy was at sea, he immediately hoisted the signal for giving him chase. On the morning of the 11th de Winter’s fleet, consisting of 4 seventy-fours, 7 sixty-fours, 4 fifty-gun ships, 2 forty-four-gun frigates, and 2 of thirty-two guns, besides smaller vessels, was sighted lying about 9 m. from shore, between the villages of Egmont and Camperdown. The British fleet numbered 7 seventy-fours, 7 sixty-fours, 2 fifties, 2 frigates, with a sloop and several cutters, and was slightly superior in force to that of the Dutch. Shortly after mid-day the British ships, without waiting to form in order, broke through the Dutch line, and an engagement commenced which, after heavy loss on both sides, resulted in the taking by the British of eleven of the enemy’s vessels. When the action ceased the ships were in nine fathoms water, within 5 m. of a lee shore, and there was every sign of an approaching gale. So battered were the prizes that it was found impossible to fit them for future service, and one of them, the “Delft,” sank on her way to England. In recognition of this victory, Admiral Duncan was, on the 21st of October, created Viscount Duncan of Camperdown and baron of Lundie, with an annual pension of £3000 to himself and the two next heirs to his title. The earldom of Camperdown was created for his son Robert (1785-1859) in 1831, and is still in the possession of his descendants. In 1800 Lord Duncan withdrew from naval service. He died on the 4th of August 1804.

See Charnock, *Biog. Nav.* (1794-1796); Collins, *Peerage of England*, p. 378 (1812); W. James, *Naval History of Great Britain* (1822); Yonge, *History of the British Navy*, vol. i. (1863); Earl of Camperdown, *Admiral Duncan* (1898), vol. xvi. of the Navy Record Soc. Publications, contains the logs of the ships engaged in the battle of Camperdown.

DUNCAN, PETER MARTIN (1824-1891), English palaeontologist, was born on the 20th of April 1824 at Twickenham, and was educated partly at the local grammar school and partly in Switzerland. Having entered the medical department of King’s College, London, in 1842, he obtained the degree of M.B. (Lond.) in 1846, and then acted for a short time as assistant to a doctor at Rochester. Subsequently he practised at Colchester (1848-1860), and during this period he served for a year as mayor of the city. Returning to London in 1860 he practised for a few years at Blackheath, and then gave his time entirely to scientific research, first in botany, and later in geology and palaeontology. His attention was directed especially to fossil corals, and in 1863 he contributed to the Geological Society of London the first of a series of papers on the fossil corals of the West Indian Islands in which he not only described the species, but discussed their bearings on the physical geography of the Tertiary period. Corals from various parts of the world and from different geological formations were subsequently dealt with by Duncan, and he came to be regarded as a leading authority on these fossils. He prepared also for the Palaeontographical Society (1866-1872) an important work on British fossil corals, as a supplement to the monograph by Henri Milne-Edwards and Jules Haime. He was elected F.R.S. in 1868. In 1870 he was chosen professor of geology at King’s College. He was president of the Geological Society (1876-1877), and in 1881 was awarded the Wollaston medal. In addition to papers on fossil corals, he dealt with some of the living forms, also with the Echinoidea and other groups, recent and fossil. He edited the six volumes of Cassell’s *Natural History* (1877, &c.). He died

at Gunnersbury on the 28th of May 1891.

DUNCAN, THOMAS (1807-1845), Scottish portrait and historical painter, was born at Kinclaven, in Perthshire. He was educated at the Perth Academy, and began the study of the law, but abandoned it for art. Beginning under the instruction of Sir William Allan, he early attained distinction as a delineator of the human figure; and his first pictures established his fame so completely, that at a very early age he was appointed professor of colouring, and afterwards of drawing, in the Trustees' Academy of Edinburgh. In 1840 he painted one of his finest pictures, "Prince Charles Edward and the Highlanders entering Edinburgh after the Battle of Prestonpans," which secured his election as an associate of the Royal Academy in 1843. In the same year he produced his picture of "Charles Edward asleep after Culloden, protected by Flora MacDonald," which, like many other of his works, has been often engraved. In 1844 appeared his "Cupid" and his "Martyrdom of John Brown of Priesthill." His last work was a portrait of himself, now in the National Gallery in Edinburgh. He particularly excelled in his portraits of ladies and children. He died in Edinburgh on the 25th of May 1845.

DUNCE, a slow or stupid person, one incapable of learning. The word is derived from the name of the great schoolman, John Duns Scotus, whose works on logic, theology and philosophy were accepted text-books in the universities from the 14th century. "Duns" or "Dunsman" was a name early applied by their opponents to the followers of Duns Scotus, the Scotists, and hence was equivalent to one devoted to sophistical distinctions and subtleties. When, in the 16th century, the Scotists obstinately opposed the "new learning," the term "duns" or "dunce" became, in the mouths of the humanists and reformers, a term of abuse, a synonym for one incapable of scholarship, a dull blockhead.

DUNCKER, MAXIMILIAN WOLFGANG (1811-1886), German historian and politician, eldest son of the publisher Karl Duncker, was born at Berlin on the 15th of October 1811. He studied at the universities of Bonn and Berlin till 1834, was then accused of participation in the students' societies, which the government was endeavouring to suppress, and was condemned to six years' imprisonment, afterwards reduced to six months. He had already begun his labours as a historian, but after serving his sentence in 1837, found himself debarred till 1839 from completing his course at Halle, where in 1842 he obtained a professorship. Elected to the National Assembly at Frankfort in 1848, he joined the Right Centre party, and was chosen reporter of the projected constitution. He sat in the Erfurt assembly in 1850, and in the second Prussian chamber from 1849 to 1852. During the crisis in Schleswig and Holstein in 1850 he endeavoured in person to aid the duchies in their struggles. An outspoken opponent of the policy of Manteuffel, he was refused promotion by the Prussian government, and in 1857 accepted the professorship of history at Tubingen. In 1859, however, he was recalled to Berlin as assistant in the ministry of state in the Auerswald cabinet, and in 1861 was appointed councillor to the crown prince. In 1867 he became director of the Prussian archives, with which it was his task to incorporate those of Hanover, Hesse and Nassau. He retired on the 1st of January 1875, and died at Ansbach on the 21st of July 1886. Duncker's eminent position among German historians rests mainly on his *Geschichte des Alterthums* (1st ed., 1852-1857); 5th ed. in 9 vols., 1878-1886; (English translation by Evelyn Abbott, 1877-1882). He edited, with J.G. Droysen, *Preussische Staatsschriften*, *Politische Correspondenz Friedrichs des Grossen*, and *Urkunden und Actenstucke zur Geschichte des Kurfursten Friedrich Wilhelm von Brandenburg*. To the period of his political activity belong *Zur Geschichte der deutschen Reichsversammlung in*

Frankfurt (1849); *Heinrich von Gagern* (1850), in the series of *Manner der Gegenwart*; and the anonymous *Vier Monate auswartiger Politik* (1851). His other works include *Origines Germanicae* (1840); the lectures *Die Krisis der Reformation* (1845) and *Feudalitat und Aristokratie* (1858); *Aus der Zeit Friedrichs des Grossen und Friedrich Wilhelms III. Abhandlungen zur preussischen Geschichte* (1876); followed after his death by *Abhandlungen aus der griechischen Geschichte* and *Abhandlungen aus der neueren Geschichte* (1887).

DUNCKLEY, HENRY (1823-1896), English journalist, was born at Warwick on the 24th of December 1823. Educated at the Baptist college at Accrington, Lancashire, and at Glasgow University, he became in 1848 minister of the Baptist church at Salford, Lancashire. Here he closely investigated the educational needs of the working-classes, embodying the results of his inquiries in an essay, *The Glory and the Shame of Britain* (1851), which gained a prize offered by the Religious Tract Society. In 1852 he won the Anti-Corn-law League's prize with an essay on the results of the free-trade policy, published in 1854 under the title *The Charter of the Nations*. In 1855 he abandoned the ministry to edit the *Manchester Examiner and Times*, a prominent Liberal newspaper, in charge of which he remained till 1889. For twenty years he wrote, over the signature "Verax," weekly letters to the Manchester papers; those on *The Crown and the Cabinet* (1877) and *The Crown and the Constitution* (1878) evoked so much enthusiasm that a public subscription was set on foot to present the writer with a handsome testimonial for his public services. In 1878 Dunckley, who had often declined to stand for parliament, was elected a member of the Reform Club in recognition of his services to the Liberal party, and in 1883 he was made an LL.D. by Glasgow University. He died at Manchester on the 29th of June 1896.

DUNCOMBE, SIR CHARLES (*c.* 1648-1711), English politician, was a London apprentice, who became a goldsmith and a banker; he amassed great wealth in his calling and was chosen an alderman of the city of London in 1683. Duncombe's parliamentary career began in 1685, when he was elected member of parliament for Hedon, and he was afterwards one of the representatives of Yarmouth in the Isle of Wight and of Downton in Wiltshire. He was made receiver of the customs, and upon the flight of James II. from England in 1688 refused to forward to him the sum of £1500 as requested; accordingly his name alone was excepted from the pardon issued by the exiled king in 1692. A strong Tory, Duncombe held for a short time the office of receiver of the excise, and in this capacity he profited slightly by a transaction over some exchequer bills which had been falsely endorsed. Consequently he was imprisoned by the House of Commons, and expelled from parliament; and having been released by order of the House of Lords, where his friends were more powerful, he was again imprisoned by the Commons. Tried before the court of king's bench he was found "not guilty" on two occasions and the matter was allowed to drop. Duncombe made three unsuccessful attempts to enter parliament as member for the city of London, and then represented Downton a second time from 1702 until his death. In 1699 he was knighted, and in 1709 he served as lord mayor of London. Upon retiring from business in 1695 Duncombe caused some stir by giving the representatives of the duke of Buckingham a high price for an estate at Helmsley in Yorkshire, where he built a magnificent house.

He died at his residence at Teddington on the 9th of April 1711, and much of his great wealth passed to his sister, Ursula, wife of Thomas Browne, who took the name of Duncombe. Ursula's great-grandson, Charles Duncombe (1764-1841), was created Baron Feversham in 1826, and in 1868 his grandson, William Ernest, the 3rd baron (b. 1829), was made earl of Feversham. Sir Charles Duncombe's nephew, Anthony Duncombe (*c.* 1695-1763), who was made a baron in 1747, left an only daughter, Anne (1757-1829), who married Jacob Pleydell-Bouverie, 2nd earl of Radnor, by whom she was the ancestress of the succeeding earls of Radnor.

A celebrated member of the Duncombe family was Thomas Slingsby Duncombe (1796-1861), a Radical politician, who was member of parliament for Hertford from 1826 to 1832 and for Finsbury from 1834 until his death. Duncombe defended Lord Durham's administration of Canada; he sought to obtain the release of John Frost and other Chartists, whose immense petition he presented to parliament in 1842; and he interested himself in the affairs of Charles II., the deposed duke of Brunswick. He showed a practical sympathy with Mazzini, whose letters had been opened by order of the English government, by urging for an inquiry into this occurrence; and also with Kossuth. He died at Lancing on the 13th of November 1861.

See *Life and Correspondence of T.S. Duncombe*, edited by T.H. Duncombe (1868).

DUNDALK, a seaport of Co. Louth, Ireland, in the north parliamentary division, on the Castletown river near its mouth in Dundalk Bay. Pop. of urban district (1901), 13,076. It is an important junction on the Great Northern railway, by the main line of which it is 54 m. N. from Dublin. The company has its works here, and a line diverges to the north-west of Ireland. Dundalk is connected with the port of Greenore (for Holyhead) by a line owned by the London & North-Western railway company of England. The parish church is an old and spacious edifice with a curious wooden steeple covered with copper; and the Roman Catholic chapel is a handsome building in the style of King's College chapel, Cambridge. There are ruins of a Franciscan priory, with a lofty tower. Adjacent to the town are several fine parks and demesnes. Until 1885 a member was returned to parliament. A brisk trade, chiefly in agricultural and dairy produce, is carried on, and the town contains some manufactories. Distilling and brewing are the principal industrial works, and there are besides a flax and jute-spinning mill, salt works, &c. The port is the seat of a considerable trade, mainly in agricultural produce and live stock. It is also the centre of a sea-fishery district and of salmon fisheries. Dundalk was a borough by prescription, and received charters from Edward III. and successive monarchs. Edward Bruce, having invaded Ireland from Scotland in 1315, proceeded south from his landing-place in Antrim, ravaging as he came, to Dundalk, which he stormed, and proclaimed himself king here. In this neighbourhood, too, he was defeated and killed by the English under Sir John de Bermingham in 1318, and at Faughart near Dundalk, near the ruined church of St Bridget, he is buried.

DUNDEE, JOHN GRAHAM OF CLAVERHOUSE, Viscount (*c.* 1649-1689), Scottish soldier, was the elder son of Sir William Graham and Lady Madeline Carnegie. Of his youth little record has been kept; but in the year 1665 he became a student at the university of St Andrews. His education was upon the whole good, as appears from the varied and valuable correspondence of his later years. Young Graham was destined for a military career; and after about four years he proceeded abroad as a volunteer in the service of France. In 1673 or 1674 he went to Holland, and obtained a cornetcy, and he was soon raised to the rank of captain, as a reward for having saved the life of the prince of Orange at the battle of Seneff. A few years later, being disappointed in his hopes of obtaining a regiment, Graham resigned his commission. In the beginning of 1677 he returned to England, bearing, it is said, letters of strong recommendation from the prince to Charles II. and the duke of York. In 1678 he became a lieutenant, and soon afterwards captain of a troop, in the regiment commanded by his relative the marquis of Montrose. The task before him was the suppression of the Covenanters' rebellion. To this he brought, over and above the feelings of romantic loyalty and the cavalier spirit, which in his case was free from its usual defects, a hatred of the Covenanters which was based largely on his hero-worship of the great Montrose. Further, his uncompromising disposition and unmistakable capacity at once marked him out as a leader upon whom the government could rely. But the difficulties of his task, the open or secret hostility of the whole people, and the nature and extent of the country he was required to watch, were too great for the leader of a small body of cavalry, and in spite of his vigorous and energetic action, Graham accomplished but little. He entered, however, upon

his occupation with zest, and interpreted consistently the orders he received. There is evidence, also, that his efforts were appreciated at headquarters in his appointment, jointly with the laird of Earlshall, his subaltern, to the office of sheriff-depute of Dumfries and Annandale in March 1679, with powers—specially narrated in his commission—anent "separation," conventicles, "disorderly baptisms and marriages," and the like.

For some years thereafter the position of Graham was in the highest degree difficult and delicate. In the midst of enemies, and in virtue of the most erroneous but direct orders of his government, he combined the functions of soldier, spy, prosecutor and judge. Shortly after the murder of Archbishop Sharp (1679), he was summoned to increased activity. There were reports of rebels gathering near Glasgow, and Graham went in pursuit. On the 1st of June, the Covenanters being in a well-protected position upon the marshy ground of Drumclog, Graham advanced to the attack. Hindered by the ground, he had to wait till the impatience of his adversaries induced them to commence an impetuous attack. The charge of the Covenanters routed the royal cavalry, who turned and fled, Graham himself having a narrow escape. This was the only regular engagement he had with the Covenanters. The enthusiasm raised by this victory was the beginning of a serious and open rebellion.

On the 22nd of June Graham was present at the battle of Bothwell Bridge, at the head of his own troop. Immediately thereafter he was commissioned to search the south-western shires for those who had taken part in the insurrection. In this duty he seems to have been engaged till the early part of 1680, when he disappears for a time from the record of these stringent measures. The wide powers given to him by his commission were most sparingly used, and the gravest accusation made against him in reference to this period is that he was a robber.

He was, in any case, an advocate of rigorous measures, and his own systematic and calculated terrorism, directed principally against the ringleaders, proved far more efficacious than the irregular and haphazard brutalities of other commanders. During these months he was despatched to London, along with Lord Linlithgow, to influence the mind of Charles II. against the indulgent method adopted by Monmouth with the extreme Covenanting party. The king seems to have been fascinated by his loyal supporter, and from that moment Graham was destined to rise in rank and honours. Early in 1680 he obtained a royal grant of the barony of the outlawed Macdougal of Freuch, and the grant was after some delay confirmed by subsequent orders upon the exchequer in Scotland. In April 1680 it appears that his roving commission had been withdrawn by the privy council. He is thus free from all concern with the severe measures which followed the Sanquhar Declaration of the 22nd of June 1680.

The turbulence occasioned by the passing of the Test Act of 1681 required to be quelled by a strong hand; and in the beginning of the following year Graham was again commissioned to act in the disaffected districts. In the end of January he was appointed to the sheriffships of Wigtown, Dumfries, Kirkcudbright and Annandale. He retained his commission in the army—the pernicious combination of his offices being thus repeated. He appears further to have had powers of life and death in virtue of a commission of justiciary granted to him about the same time. These powers he exercised strictly and in conformity with the tenor of his orders, which were not more severe than he himself desired. He quartered on the rebels, rifled their houses, and, to use his own words, "endeavoured to destroy them by eating up their provisions." The effect of his policy, if we believe his own writ, is not overstated as

"Death, desolation, ruin and decay."

The result of a bitter quarrel between Graham and Sir John Dalrymple, who, with many others of the gentry, was far from active in the execution of the government's orders, confirmed his prestige. Graham was acquitted by the privy council of the charges of exaction and oppression preferred against him, and Sir John condemned to fine and imprisonment for interference with his proceedings. In December 1682 Graham was appointed colonel of a new regiment raised in Scotland. He had still greater honours in view. In January 1683 the case of the earl of Lauderdale, late Maitland of Hatton, was debated in the House of Lords. Maitland was proprietor of the lands and lordship of Dundee and Dudhope, and the decree of the Lords against him was in March 1683 issued for the sum of £72,000. Graham succeeded in having part of the property of the defaulter transferred to him by royal grant, and in May he was nominated to the privy council of Scotland.

Shortly afterwards Claverhouse was appointed to be present at the sittings of the Circuit Court of Justiciary in Stirling, Glasgow, Dumfries and Jedburgh, recently instituted for the imposition of the test and the punishment of rebels. Several were sentenced to death.

During the rest of the year he attended the meetings of council, in which he displayed the spirit of an obedient soldier rather than that of a statesman capable of independent views. There is, however, one record of his direct and efficacious interference. He declared decisively against the proposal to let loose the Highland marauders upon the south of Scotland.

In June 1684 he was again at his old employment—the inspection of the southern shires; and in August he was commissioned as second in command of the forces in Ayr and Clydesdale to search out the rebels. By this time he was in possession of Dudhope, and on the 10th of June he married Lady Jean, daughter of William, Lord Cochrane. As constable of Dundee he recommended the remission of extreme punishment in the case of many petty offences. He issued from his retirement to take part in a commission of lieutenancy which perambulated the southern districts as a criminal court; and in the end of the year he was again in the same region on the occasion of disturbances in the town of Kirkcudbright.

Shortly after the death of Charles II. (February 1685) Graham incurred a temporary disgrace by his deposition from the office of privy councillor; but in May he was reinstated, although his commission of justiciary, which had expired, was not renewed.

In May 1685 he was ordered with his cavalry to guard the borders, and to scour the south-west in search of rebels. By act of privy council, a certificate was required by all persons over sixteen years of age to free them from the hazard of attack from government officials. Without that they were at once liable to be called upon oath to abjure the declaration of Renwick, which was alleged to be treasonable. While on this mission he pursued and overtook two men, one of whom, John Brown, called the “Christian carrier,” having refused the abjuration oath, was shot dead. The order was within the authorized powers of Graham.

In 1686 he was promoted to the rank of major-general, and had added to his position of constable the dignity of provost of Dundee. In 1688 he was second in command to General Douglas in the army which had been ordered to England to aid the falling dynasty of the Stuarts.

His influence with James II. was great and of long standing, and amid the hurry of events in this critical time he was created Viscount Dundee on the 12th of November 1688. Throughout the vexed journeyings of the king, Dundee is found accompanying or following him, endeavouring in vain to prompt him to make his stand in England, and fight rather than flee from the invader. At last James announced his resolve to go to France, promising that he would send Dundee a commission to command the troops in Scotland.

Dundee returned to Scotland in anticipation of the meeting of the convention, and at once exerted himself to confirm the waning resolution of the duke of Gordon with regard to holding Edinburgh Castle for the king. The convention proving hostile (March 16th, 1688), he conceived the idea of forming another convention at Stirling to sit in the name of James II., but the hesitancy of his associates rendered the design futile, and it was given up. Previous to this, on the 18th of March, he had left Edinburgh at the head of a company of fifty dragoons, who were strongly attached to his person. He was not long gone ere the news was brought to the alarmed convention that he had been seen clambering up the castle rock and holding conference with the duke of Gordon. In excitement and confusion order after order was despatched in reference to the fugitive. Dundee retired to Dudhope. On the 30th of March he was publicly denounced as a traitor, and in the latter half of April attempts were made to secure him at Dudhope, and at his residence in Glen Ogilvy. But the secrecy and speed of his movements outwitted his pursuers, and he retreated to the north.

In the few years which had elapsed since 1678 he had risen, despite the opposition of his superiors in rank, from the post of captain and the social status of a small Scottish laird to positions as a soldier and statesman and the favourite of his sovereigns, of the greatest dignity, influence and wealth. In this period he had, justly or unjustly, earned the reputation of being a cruel and ruthless oppressor. When the ruling dynasty changed, and he had himself become an outlaw and a rebel, he supported the cause of his exiled monarch with such skill and valour that his name and death are recorded as heroic.

In the Highlands his diplomatic skill was used with effect amongst the chieftains. General Hugh Mackay was now in the field against him, and a Highland chase began. The campaign resembled those of Montrose forty years earlier. The regular troops were at a great disadvantage in the wild Highland country, and Dundee, like Montrose, invariably anticipated his enemy. But, as usual, the army of the clans required the most careful management. After the first few weeks of operations, Dundee’s army melted away, and Mackay, unable to follow his opponent, retired also.

Throughout the whole of the campaign Dundee was indefatigable in his exertions with the Highland chiefs and his communications with his exiled king. To the day of his death he believed that formidable succour for his cause was about to arrive from Ireland and France. He justly considered himself at the head of the Stewart interest in Scotland, and his despatches form a record of the little incidents of the campaign, strangely combined with a revelation of the designs of the statesman. It mattered little to him that on the 24th of July a price of £20,000 had been placed upon his head. The clans had begun to reassemble; he was now in command of a considerable force, and in July both sides took the field again. A contest for the castle of Blair forced on the decision. Mackay, in his march towards that place, entered the pass of Killiecrankie, the battleground selected by Dundee and his officers. Here, on the 17th-27th of July 1689, was fought the battle of Killiecrankie (*q.v.*). The Highlanders were completely victorious, but their leader, in the act of encouraging his men, was pierced beneath the breastplate by a bullet of the enemy, and fell dying from his horse. Dundee asked "How goes the day?" of a soldier, who replied, "Well for King James, but I am sorry for your lordship." The dying general replied, "If it goes well for him, it matters the less for me." Dundee was conveyed to the castle of Blair, where he died on the night of the battle. Within an hour or two of his death he wrote a short account of the engagement to King James. The battle, disastrous as it was to the government forces, was in reality the end of the insurrection, for the controlling and commanding genius of the rebellion was no more. The death of Dundee, in the mist and the confusion of a cavalry charge, formed the subject of numerous legends, the best known of which is the long prevalent tradition that he was invulnerable to all bullets and was killed by a silver button from his own coat.

See Mark Napier, *Memorials and Letters of Graham of Claverhouse* (1859-1862); Bannatyne Club, *Letters of the Viscount Dundee* (1826); C.S. Terry, *John Graham of Claverhouse, Viscount Dundee*; and authorities quoted in *Dict. Nat. Biogr.*, *s.v.* "Graham of Claverhouse."

DUNDEE, a royal, municipal and police burgh, county of a city, and seaport of Forfarshire, Scotland. Pop. (1891) 153,587; (1901) 161,173. It lies on the north shore of the Firth of Tay, 59¼ m. N. by E. of Edinburgh by the North British railway via the Forth and Tay bridges. The Caledonian railway finds access to the city by way of Perth, which is distant about 22 m. W. by S. The general disposition of the town is from east to west, with a frontage on the water of 4 m. The area northwards that has already been built over varies in depth from half a mile to nearly 2½ m. (from Esplanade Station to King's Cross). The city rises gradually from the river to Dundee Law and Balgay Hill. Since the estuary to the E. of Tay bridge is 1½ m. wide, and the commodious docks—in immediate contact with the river at all stages of the tide—are within 12 m. of the sea, the position of the city eminently adapts it to be the emporium of a vast trade by land and sea. But its prosperity is due in a far greater measure to its manufactures of jute and linen—of which it is the chief seat in the United Kingdom—than to its shipping.

Public Buildings.—The town-hall, built in 1734 from the designs of Robert Adam, stands in High Street. It is surmounted by a steeple 140 ft. high, carrying a good peal of bells, and beneath it is a piazza. The old Town Cross, a shaft 15 ft. high, bearing a unicorn with the date of 1586, once stood in High Street also, but was re-erected within the enclosure on the S.W. of Town Churches (see below). Albert Square, with statues of Robert Burns, George Kinloch, the first member for Dundee in the Reform Parliament (both by Sir John Steell), and James Carmichael (1776-1853), inventor of the fan-blast (by John Hutchison, R.S.A.), contains several good buildings, among them the Royal Exchange in Flemish Pointed (erected in 1853-1856), the Eastern Club-house, and the Albert Institute, founded in memory of the prince consort. The last, built mainly from designs by Sir Gilbert Scott, is one of the most important edifices in the city, since it embraces the art gallery, free library, reference library, museum and several halls. On the north side of the building is the seated figure, in bronze, of Queen Victoria, on a polished red granite pedestal containing bas-reliefs of episodes in Her Majesty's life, the work of Harry Bates, A.R.A. The custom house, near the docks, is in Classical style and dates from 1843. The Sheriff Court buildings and Police Chambers, a structure of Grecian design, with a bold portico, was erected in 1864-1865. The halls used for great public meetings are the Volunteer Drill Hall in Parker Square, and

Kinnaird Hall in Bank Street. Of the newer streets, Commercial, Reform, Whitehall, Bank and Lindsay contain many buildings of good design and the principal shops. In Bank Street are the offices of the *Dundee Advertiser*, the leading newspaper in the north-east of Scotland; and in Lindsay Street the headquarters of the *Dundee Courier*. In Dock Street stands the Royal Arch, an effective structure, erected to commemorate the visit of Queen Victoria in 1844. Among places of amusement are the Theatre Royal, the People's Palace theatre, the Music Hall, the Circus and the Gymnasium. The cattle market and slaughter-houses, both on an extensive scale, are in the east end of the city, not far from Camperdown Dock. Dudhope Castle, once the seat of the Scrymgeours, hereditary constables of the burgh —one of whom (Sir Alexander) was a companion-in-arms of Wallace,—was granted by James II. to John Graham of Claverhouse. On his death it reverted to the crown, and at a later date was converted into barracks. When the new barracks at Dudhope Park were occupied, the Castle was transformed into an industrial museum. Though Dundee was once a walled town, the only relic of its walls is the East Port, the preservation of which was due to the tradition that George Wishart preached from the top of it during the plague of 1544.

Churches.—Of the many churches and chapels the most interesting is Town Churches—St Mary's, St Paul's and St Clement's, the three under one roof—surmounted by the noble square tower, 156 ft. high, called the Old Steeple, once the belfry of the church which was erected on this spot by David, earl of Huntingdon, as a thank-offering for his escape from shipwreck on the shoals at the mouth of the Tay (1193). The church perished, but the bell-tower remained and was restored in 1871-1873 by Sir Gilbert Scott. The fine Roman Catholic pro-cathedral of St Andrew's is in Early English style, and St Paul's Episcopal church, in Decorated Gothic style, with a spire 211 ft. high, from designs by Sir Gilbert Scott, was due to the zeal of Bishop Forbes (1817-1875), who transferred the headquarters of the see of Brechin to Dundee. It occupies the site of the old castle. Memorial churches commemorate the work of Robert Murray McCheyne (1813-1843) and of George Gilfillan (1813-1878), long ministers in Dundee. John Glas (1695-1773), founder of the Glasites (*q.v.*), ministered here from 1730 to 1733.

Cemeteries.—The ancient burying-ground in the centre of the city is called the Howff. It has long been closed, but contains several interesting monuments and epitaphs. Not far from it the New Cemetery was laid out in West Bell Street; to the east of Baxter Park lies the Eastern Cemetery; and the Western Cemetery was constructed in Perth Road. The most beautifully situated of all the burying-grounds, however, is the Western Necropolis, which occupies the western portion of the hill of Balgay. A bridge over the ravine connects it with Balgay Park.

Public Parks and Open Spaces.—On the N. of the city rises Dundee Law (571 ft.), the property of the Corporation, a prominent landmark, on the summit of which are traces of an old vitrified fort. The surrounding park covers 18 acres. Near the eastern boundary of the city lies Baxter Park, of 37 acres, presented to the town by Sir David Baxter (1793-1872), a leading manufacturer, and his sisters. It was laid out by Sir Joseph Paxton, and contains a statue of Sir David by Sir John Steell, erected by public subscription. In the west the finely wooded hill of Balgay was acquired in 1869 and 36 acres of the area were converted into a park. Immediately adjoining it on the north is Lochee Park, of 25 acres, given to the city in 1891 by Messrs Cox Brothers of Camperdown Works. In the extreme north lies the park of Fair Muir, of 12 acres, which was secured in 1890, and nearer to the heart of the town is Dudhope or Barrack Park, purchased in 1893. Near the north end of the Tay bridge is Magdalen Green, an old common of 17 acres, and along the shore of the estuary there runs for a distance of 2½ m. from Magdalen Point to beyond Craig Pier a promenade called the Esplanade.

Education.—University College in Nethergate, founded in 1880 by Miss Baxter of Balgavies (d. 1884) and Dr John Boyd Baxter, was opened in 1883, and united to the university of St Andrews in 1890. The affiliation was cancelled in 1895 owing to divergence of view in the governing body, but this was overcome and the college finally incorporated in 1897. The staff consists of a principal, professors and lecturers, and the curriculum, which may be taken by students of both sexes, is especially concerned with medicine and natural and applied science. The endowments exceed £250,000. Adjoining the buildings is the Technical Institute, built and endowed by Sir David Baxter and opened in 1888. In connexion with the high school, a building in the Doric style, dating from 1833, there is a museum which was endowed in 1880 by Mr William Harris. Morgan hospital, a structure in the Scots Baronial style, situated immediately to the north of Baxter Park, was founded in 1868 by John Morgan, a native of Dundee, for the board and education of a hundred boys, sons of indigent tradesmen, but was acquired by the school board and transformed into a secondary

school. Besides a high school for girls and Roman Catholic and Episcopalian schools, there are numerous efficient and thoroughly equipped board schools.

Charitable Institutions.—One of the most conspicuous buildings in the city, occupying a prominent position in the centre, is the Royal Infirmary, a fine structure in the Tudor style. On the southern face of Balgay Hill stands the Royal Victoria hospital for incurables, opened in 1889. In addition to the maternity hospital and nurses' home, there are several institutions devoted to special afflictions and diseases—among them the Blind and the Deaf and Dumb institutions, the Royal asylum, the fever hospital at King's Cross, and, in the parish of Mains—beyond the municipal boundary—the Baldovan asylum for imbeciles, founded in 1854 by Sir John Ogilvy and said to be the earliest of its kind in Scotland, besides the smallpox and cholera hospital. The large Dundee hospital adjoins the poorhouse, and an epidemic hospital has been built in the Fair Muir district. One of the convalescent homes is situated at Broughty Ferry. Among other institutions are the Royal Orphan and the Wellburn Charitable institutions, the rescue home for females, the sailors' home and Lady Jane Ogilvy's orphanage in Mains.

Trade.—Hector Boece, in his *History and Croniklis of Scotland*, thus quaintly writes of the manufactures of Dundee in the opening of the 16th century—"Dunde, the toun quhair we wer born; quhair mony virtewus and lauborius pepill ar in, making of claith." Jute is, *par excellence*, the industry of the city. Enormous quantities of the raw material—estimated at 300,000 tons a year—are imported directly from India in a fleet solely devoted to this trade, and many of the factories in Bengal are owned by Dundee merchants. Fabrics in jute range from the roughest sacking to carpets of almost Oriental beauty. Another staple industry is the linen manufacture, which is also one of the oldest, although it was not till the introduction of steam power that headway was made. Bell Mill, erected in 1806, was the first work of any importance, and the first power-loom factory dates from 1836. Now factories and mills are to be counted by the score, and the jute, hemp and flax manufactures alone employ about 50,000 hands, while the value of the combined annual output exceeds £6,000,000. Some of the works are planned on a colossal scale, and many of the buildings in respect of design and equipment are among the finest and most complete in the world. In the thriving quarter of Lochee are situated the Camperdown Linen Works, covering an immense area and employing more than 5000 hands. The chimney-stalk (282 ft. high), in the style of an Italian campanile, built of parti-coloured bricks with stone cornices, is a conspicuous feature. The chief textile products are drills, ducks, canvas (for which the British navy is the largest customer), ropes, sheetings, sackings and carpets. Dundee is also celebrated for its confectionery and preserves, especially marmalade. Among other prominent industries are bleaching and dyeing, engineering, shipbuilding, tanning, the making of boots and shoes and other goods in leather, foundries, breweries, corn and flour mills, and the construction of motor-cars.

Shipping.—By reason of its excellent docking facilities Dundee can cope with a shipping trade of the largest proportions. On the front wharves and harbour works extend for 2 m., and the docks cover an area of 35½ acres, made up thus—Earl Grey Dock, 5¼ acres; King William IV. Dock, 6¼ acres; Tidal Harbour, 4¾ acres; Victoria Dock, 10¾ acres; Camperdown Dock, 8½ acres. There are, besides, graving docks, the Ferry harbour and timber ponds. The warehouses are capacious and the ample quays equipped with steam cranes and other modern appliances. In 1898 there entered and cleared 2914 vessels of 1,390,331 tons; in 1904 the numbers were 2428 vessels of 1,227,429 tons. At the close of 1904 the registered shipping of the port was 131 vessels of 109,885 tons. Dundee is the seat of the Arctic fishery, once an important and lucrative business, but now shrunk to the most meagre dimensions in consequence of the increasing scarcity of whales and seals. There is regular communication by steamer with London, Hull, Newcastle, Liverpool and Leith, besides Rotterdam, Hamburg and other continental ports. Of the local excursions the two hours' run to Perth is the favourite summer trip.

Local Government.—Dundee returns two members to parliament. The city council consists of the lord provost, bailies and councillors. The corporation owns the gas and water supplies (the latter drawn from the loch of Lintrathen, 18 m. to the N.W.) and the electric tramcars.

History.—There appears to be some doubt as to the origin of the name of Dundee. It is extravagant to trace it to the Latin *Donum Dei*, "the gift of God," as some have done, or the Celtic *Dun Dhia*, "the hill of God." More probably it is the Gaelic *Dun Taw*, "the fort of the Tay," of which the Latin *Taodunum* is a transliteration—the derivation pointing to the fact of a Pictish settlement on the site. The earliest authentic mention of the city is in a deed of gift by David, earl of Huntingdon, younger brother of William the Lion, dated about 1200, in which it is designated as "Dunde." Shortly afterwards it was erected into a royal burgh by

William the Lion. When Edward I. visited it, however, as he did twice (in 1296 and 1303) with hostile intent, he is said to have removed its charter. Consequently Robert Bruce and successive kings confirmed its privileges and rights, and Charles I. finally granted it its great charter. Dundee played a prominent part in the War of Scottish Independence. Here Wallace finished his education, and here he slew young Selby, son of the English constable, in 1291, for which deed he was outlawed. In that year the town fell into the hands of the English, and it was whilst engaged in besieging the castle in 1297 that Wallace withdrew to fight the battle of Stirling Bridge. In their incursion into Scotland under John of Gaunt the English captured and partially destroyed the town in 1385, but retreated to meet a counter-invasion of their own country. The English seized it again for a brief space during one of the 1st earl of Hertford's devastating raids in the reign of Edward VI. Dundee bore such a prominent part in propagating the Reformed doctrines that it was styled "the Scottish Geneva." It saw more trouble at the time of the Civil War, for the marquess of Montrose sacked it in 1645, and then gave a considerable portion of it to the flames. Charles II. spent a few days in the castle after his crowning at Scone (January 1st, 1651). In the same year General Monk demanded the submission of the town to Cromwell, and on its refusal captured it after an obstinate resistance and visited it with condign punishment. More than one-sixth of the inhabitants and garrison, including its governor Lumsden, were put to the sword, and no fewer than 60 vessels were seized and filled with plunder; but the ships, says Gumble in his *Life of Monk*, "were cast away within sight of the town and that great wealth perished." In 1684 John Graham of Claverhouse—whose family derived its name from the lands of Claverhouse in the parish of Mains immediately to the north of the town—became constable, and in 1688 provost. In the same year James II. created him Viscount Dundee. Thenceforward the annals of the town cease to touch national history, save at very rare intervals. The greatest local disaster of modern times was the destruction of the first Tay bridge (see TAY).

Many interesting old documents have been preserved in the Town House, such as certain characteristic despatches from Edward I. and Edward II., the original charter of Robert Bruce, dated 1327, a papal order from Leo X., and a letter from Queen Mary, dated 1564, providing for extra-mural interments. It may be mentioned that to describe Claverhouse himself as "bonnie Dundee" is a modern invention, the old song from which Sir Walter Scott borrowed a hint for his refrain referring solely to the town.

Since the middle and particularly during the last quarter of the 19th century many of the more unsightly districts have been demolished. In the process several picturesque but insanitary buildings, narrow winding streets and unsavoury closes disappeared, along with a few structures of more or less historic interest, like the castle, the mint and numerous convents. The wholesale clearances, however, improved both the public health and the appearance of the city, some of the new thoroughfares vieing with the finest business streets of the largest commercial centres in the United Kingdom. Queen Victoria granted a charter to Dundee, dated the 25th of January 1889, erecting it to the status of a city, and since 1892 its chief magistrate has been styled lord provost.

Among men more or less eminent who were born in Dundee may be named Hector Boece (1465-1536), the historian; George Dempster of Dunnichen (1732-1818), the agriculturist, a former owner of Skibo; Thomas Dick (1774-1857), the author of *The Christian Philosopher*; Admiral Lord Duncan (1731-1804); Viscount Dundee (1643-1689); James Halyburton (1518-1589), the Scottish Reformer, who was provost of the town for thirty-three years; Sir James Ivory (1765-1842), the mathematician, who bequeathed his science library to the town, and his nephew Lord Ivory (1792-1866), the judge; Sir George Mackenzie (1636-1691), the celebrated lawyer; Sir Alexander Scrymgeour (d. 1310), Wallace's standard-bearer, and many of the Scrymgeours, his successors, who were constables of the town; James (1495-1553), John (1500-1556) and Robert Wedderburn (1510-1557), the poets, who were all concerned in the authorship or collection of the book of *Gude and Godlie Ballatis* published in 1578; Sir John Wedderburn (1599-1679), the physician; and Sir Peter Wedderburn (1616-1679), the judge. Many well-known persons lived for longer or shorter periods in the town. James Chalmers (1782-1853), the inventor of the adhesive postage stamp (1834), was a bookseller in Castle Street. George Constable of Wallace Craigie, the prototype of Jonathan Oldbuck in Sir Walter Scott's *Antiquary*, had a residence in the east end of Seagate, the house standing until about 1820. Thomas Hood's father was a native and the poet spent part of his youth in the town, his first literary effort appearing in the *Dundee Advertiser* about 1816. James Bowman Lindsay (1799-1862), electrician and philologist, carried on his experiments for many years in Dundee, where he died. Robert Nicoll (1814-1837), the poet, kept a circulating library in Castle Street; and William Thom (1798-1848), the writer of *The Rhymes of a Handloom Weaver*, was buried in the Western Cemetery.

Suburbs.—Close to the municipal boundaries on the N.W. lies Benvie, where John Playfair (1748-1819), the mathematician, was born, and which has a mineral well that once enjoyed considerable repute. Camperdown House, the seat of the earl of Camperdown, a fine building of Greek design, standing in beautiful grounds, is situated in the parish. Fowlis, 5 m. N.W., is remarkable for its church, which dates from the 15th century, but has even been assigned to the 12th. It contains a carved ambry and rood-screen (with a curious representation of the Crucifixion), decorated font, crocketed door canopy and several pictures. The ruined castle adjoining the church ultimately became a dwelling for labourers. The Dell of Balruddery is rich in geological and botanical specimens. Lundie, 3 m. farther out in the same direction, contains several lakelets, and its kirkyard is the burial-place of the earls of Camperdown. Tealing, 4 m. N. of Dundee, was the scene of the ministry of John Glas before he was deposed for heresy.

AUTHORITIES.—David Barrie, *The City of Dundee Illustrated* (Dundee, 1890); Alexander Maxwell, *Old Dundee* (Dundee, 1891); A.C. Lamb, *Dundee: its Quaint and Historic Buildings* (Dundee, 1895); A.H. Millar, *Roll of Eminent Burgesses of Dundee* (Dundee, 1887).

DUNDERLANDSDAL, a valley of northern Norway, in Nordland *amt* (county), draining south-westward from the neighbouring glaciers to the Ranenfjord (lat. 66° 20′ N.). There are deposits of iron ore, the working of which was undertaken in 1902 by the Dunderland Iron Ore Company, water-power being provided by the strong Dunderland river. There are also pyrites mines. At the mouth of the river is Mo, a considerable trading village. The valley is remarkable for several stalactite caverns in the limestone, some of the tributary streams flowing for considerable distances underground. From Mo a fine road crosses the mountains to the head-lake of the great Ume river, draining to the Baltic, and from the head of Dunderlandsdal a sequestered bridle-path runs to Saltdal on the Skjerstadfjord, with a branch through the magnificent Junkersdal.

DUNDONALD, THOMAS COCHRANE, 10TH EARL OF (1775-1860), British admiral, was born at Annsfield in Lanarkshire on the 14th of December 1775. He came of an old Scottish family, the first earl having been Sir William Cochrane (d. 1686), a soldier who was created Baron Cochrane in 1647 and earl of Dundonald in 1669. He was the son of Archibald Cochrane, 9th Earl (1749-1831), who is remembered as a most ingenious, but also most unfortunate, scientific speculator and inventor, who was before his time in suggesting and attempting new processes of alkali manufacture, and various other uses of applied science. The family was greatly impoverished owing to his losses over these schemes, but still possessed a good deal of interest. By the help of friends Thomas was provided with a commission in an infantry regiment, and at the same time put on the books of a man-of-war by his uncle, Captain A.F.I. Cochrane (1758-1832), while still a boy. He finally chose the navy, and went to sea in his uncle’s ship, the “Hind,” in 1793. He could already count nearly five years’ nominal service, an example of those naval abuses which he was to denounce (and to profit by) during a large part of his career. His promotion was rapid. He became a lieutenant in 1796. While in that rank he was led by his self-assertive temper into a quarrel with his superior, Lieutenant Philip Beaver (1766-1813), for which he was sent before a court-martial. A warning to avoid flippancy in future was, however, the worst that happened to him.

In 1800 he was appointed to the command of the “Speedy” brig, a small vessel in which he gained a great and deserved reputation as a daring and skilful officer. His capture of the Spanish frigate “El Gamo” (32) on the 6th of May 1801 was indeed a feat of unparalleled audacity. His promotion to post rank followed on the 8th of August. Though he was apt to represent himself as disliked and neglected by the admiralty, and was frequently insolent towards his superiors, he was, as a matter of fact, pretty constantly employed, and he more than justified his appointments by his activity and success as captain of the “Pallas” (32) and “Impérieuse” (38) on the ocean and in the Mediterranean. Unfortunately for himself he

secured his return to parliament as member for Honiton in 1806 and for Westminster in 1807. In the House of Commons he soon made his mark as a radical, and as a denouncer of naval abuses. But his views did not prevent him from profiting to the utmost by one very bad abuse, for he did his utmost to secure the retention of his frigate in port, in order that he might be able to attend parliament. In spite of his radical opinions he made a furious attack on the admiralty for the new prize money regulations which diminished the shares of the captains to the advantage of the men. In April 1809 he was engaged in the attack on the French squadron in the Basque Roads, which was very ill conducted by Lord Gambier. The conduct of Lord Cochrane, as he was called till the death of his father, was brilliant and was rewarded by the order of the Bath, but his aggressive temper led him into making attacks on the admiral which necessitated a court-martial on Gambier. The admiral was acquitted, and Cochrane naturally fell into disfavour with the admiralty. He was not employed again till 1813, when he was named to the command of the “Tonnant,” which was ordered for service as flagship on the coast of America. In the interval he was restlessly active in parliament in denouncing naval abuses, and was also, most disastrously for himself, led into speculations on the Stock Exchange, by which he was brought at the beginning of 1814 into pressing danger of total ruin.

At this moment a notorious fraud was perpetrated on the Stock Exchange by an uncle of his and by other persons with whom he habitually acted in his speculations. Lord Cochrane was brought to trial with the others before Lord Ellenborough on the 8th of June 1814 and all were condemned. He was sentenced to an hour in the pillory, which was remitted, and to fine and imprisonment, which were enforced. He continued to assert his innocence, and to protest that he had been unjustly condemned, but he was expelled from parliament and the order of the Bath. He was, however, almost immediately re-elected member for Westminster, but he had to serve his term (one year) of imprisonment, and, after escaping and being recaptured, he regained his liberty in 1815 on payment of the fine of £1000 to which he had been sentenced.

In 1817 he accepted the invitation of the Chileans, who were then in revolt against Spain, to take command of their naval forces, and remaining in their service until 1822 contributed largely to their success. His capture of the Spanish frigate “Esmeralda” (40) in the harbour of Callao, on the 5th of November 1820, was an achievement of signal daring. In 1823 he transferred his services to Brazil, where he helped the emperor Dom Pedro I. to shake off the yoke of Portugal; but by the end of 1825 he had fallen out with the Brazilians, and he returned to Europe. His activity was next devoted to the aid of the Greeks, then at the end of their struggle with the Turks, but he found no opportunity for distinguishing himself, and in 1828 he returned home. His efforts were now steadily directed to securing his restoration to the navy, and in this he succeeded in 1832; but though he was granted a “free pardon” he failed to obtain the new trial for which he was anxious, or to secure the arrears of pay he claimed.[1] He was restored to his place in the order of the Bath in 1847. In 1848 he was appointed to the command of the North American and West India station, which he retained till 1851. At various periods of his life he occupied himself with scientific invention. He took out patents for lamps to burn oil of tar, for the propulsion of ships at sea, for facilitating excavation, mining and sinking, for rotary steam-engines and for other purposes; and so early as 1843 he was an advocate of the employment of steam and the screw propeller in war-ships. During the Crimean War he revived his “secret war plan” for the total destruction of an enemy’s fleet, and offered to conduct in person an attack on Sevastopol and destroy it in a few hours without loss to the attacking force. This plan, the details of which have never been divulged, he had proposed so far back as 1811, and the committee which was then appointed to consider it reported on it as effective but inhuman. Lord Dundonald died in London on the 30th of October 1860, and was buried in Westminster Abbey. No one ever excelled him in daring and resource as a naval officer, but he suffered from serious defects of character, and even those who think him guiltless of the charge on which he was convicted in 1814 must feel that he had his own imprudence and want of self-command to thank for many of his misfortunes.

He was succeeded in the title by his son Thomas as 11th earl (d. 1885), and the latter by his son Douglas (b. 1852) as 12th earl, a distinguished cavalry officer who became a lieutenant-general in 1907.

The 10th earl’s *Autobiography of a Seaman* (2 vols., 1860-1861), the main source for his *Life* (1869, by his son and heir), is written with spirit, but it was composed at the end of his career when his memory was failing, and was chiefly executed by others. He also wrote *Notes on the Mineralogy, Government and Condition of the British West India Islands* (1851), and a *Narrative of Services in the Liberation of Chili, Peru and Brazil* (1858). The

whole story of his trial and of the Stock Exchange fraud for which he was condemned has been examined by Mr J.B. Atlay in *The Trial of Lord Cochrane before Lord Ellenborough* (1897).

1 In 1878, as the result of the report of a select committee of the House of Commons appointed in 1877, a grant of £5000 was made to the then Lord Cochrane "in respect of the distinguished services of his grandfather, the late earl of Dundonald."

DUNEDIN, a city of New Zealand, capital of the provincial district of Otago, and the seat of a bishop, in Taieri county. Pop (1906) 36,070, including suburbs, 56,020. It lies 15 m. from the open sea, at the head of Otago harbour, a narrow inlet (averaging 2 m. in width) on the south-eastern coast of South Island. The situation was chosen on the consideration of this harbour alone, for the actual site offered many difficulties, steep forest-clad hills rising close to the sea, and rendering reclamation necessary. The hills give the town a beautiful appearance, as the forest was allowed to remain closely embracing it, being preserved in the public ground named the Town Belt. The principal thoroughfare is comprised in Prince's Street and George Street, running straight from S.W. to N.E., and passing through the Octagon, which is surrounded by several of the principal buildings. From these streets others strike at right angles down to the harbour, while others again lead obliquely up towards the Belt, beyond which are extensive suburbs. There are several handsome commercial and banking houses. The town hall, Athenaeum and museum are noteworthy 678
buildings, the last having a fine biological collection. The university, founded in 1869, built mainly of basalt, has schools of arts, medicine, chemistry and mineralogy. It is in reality a university college, for though it was originally intended to have the power of conferring degrees, it was subsequently affiliated to the New Zealand University. The churches are numerous and some are particularly handsome; such as the First church, which overlooks the harbour, and is so named from its standing on the site of the church of the original settlers; St Paul's, Knox church and the Roman Catholic cathedral of St Joseph. Finally, one of the most striking buildings in the city is the high school (1885) with its commanding tower. The white Oamaru stone is commonly used in these buildings. The primary and secondary schools of the town are excellent, and there is a small training college for state teachers. Besides the Belt there are several parks and reserves, including botanical and acclimatization gardens, the so-called Ocean Beach, and two race-courses.

Dunedin is connected by rail with Christchurch northward and Invercargill southward, with numerous branches. Electric tramways serve the principal thoroughfares and suburbs. The most important internal industries are in wool and frozen meat. The harbour is accessible, owing to extensive dredging, to vessels drawing 19 ft., at high tide; and Dunedin is the headquarters of the coasting services of the Union Steamship Co. Port Chalmers, however (9 m. N.E. by rail) though incapacitated by its site from growing into a large town, is more readily accessible for shipping, and has extensive piers and a graving dock. Dunedin is governed by a mayor and corporation, and most of its numerous suburbs are separate municipalities.

The colony of Otago (from a native word meaning ochre, which was found here and highly prized by the Maoris as a pigment for the body when preparing for battle) was founded as the chief town of the Otago settlement by settlers sent out under the auspices of the lay association of the Free Church of Scotland in 1848. The discovery of large quantities of gold in Otago in 1861 and the following years brought prosperity, a great "rush" of diggers setting in from Australia. Gold-dredging, in the hands of rich companies, remains a primary source of wealth in the district.

DUNES,[1] or Dunkirk Dunes, Battle of, was fought near Dunkirk on the 24th of May (3rd of June) 1658, between the French and English army under the command of Marshal Turenne and the Spanish army under Don Juan of Austria and the prince of Condé. The severest part

of the fighting was borne by the English contingents on either side. Six thousand English infantry under General Lockhart were sent by Cromwell to join the army of Turenne, and several Royalist corps under the command of the duke of York (afterwards James II.) served in the Spanish forces. The object of the Spaniards was to relieve Dunkirk, which Turenne was besieging, and the complete victory of the French and English caused the speedy surrender of the fortress.

1 For the word “dune” see Down.

DUNFERMLINE, ALEXANDER SETON, 1st Earl of (*c.* 1555-1622), was the fourth son of George, 5th Lord Seton, and younger brother of Robert, 1st earl of Winton. He was sent as a boy to Rome, where he studied at the Jesuits’ College with a view to becoming a priest. He turned, however, to the study of law, and after some years’ residence in France was called to the bar about 1577. He was suspected of Romanist leanings by the officials of the Scottish kirk, and was temporarily deprived of the priory of Pluscardine, which had been granted to him by his god-mother, Queen Mary. In 1583 he accompanied his father, Lord Seton, on an embassy to Henry III. of France. His promotion was now rapid: he was made extraordinary lord of session in 1586 as prior of Pluscardine, ordinary lord of session in 1588 as lord Urquhart, judge in 1593, lord president of the court session in 1598, Baron Fyvie in 1597 and chancellor in 1604. In 1595 he was one of the commission formed by James VI. to control the royal finance. The eight commissioners were known from their number as the Octavians, and were relieved of their functions about two years later. Urquhart’s continued influence was, however, assured, in spite of the animosity of the kirk, by his appointment as lord provost of Edinburgh of nine successive years. He showed considerable independence in his relations with James VI., and dissuaded him from his intention of forming a standing army in readiness to enforce his claims to the English crown. He was entrusted with the care of Prince Charles, afterwards Charles I., after the king’s departure for England, and arranged the details of the union between Scotland and England. He became chancellor of Scotland in 1604, and on the 4th of March 1605 he was created earl of Dunfermline. He died at Pinkie House, near Musselburgh, on the 16th of June 1622.

His son Charles, 2nd earl of Dunfermline (*c.* 1608-1672), was the offspring of his third marriage with Margaret Hay, sister of John, 1st earl of Tweeddale. He signed the National Covenant and was one of the leaders of the Presbyterian party, but as one of the “Engagers” of 1648 he was prevented from holding any public office, and after the execution of Charles I. he joined Charles II. on the continent. He was made privy councillor at the Restoration, extraordinary lord of session and lord of the articles in 1667, and in 1671 lord privy seal. He died in May 1672. The earldom was then held successively by his sons Alexander (d. 1675) and James; but at the latter’s death, at St Germains on the 26th of December 1694, the title became extinct.

See G. Seton, *Memoir of Alex. Seton, first Earl of Dunfermline* (1882); and Sir Robert Douglas, *Scots Peerage*, vol. ii. (1906, edited by Sir J.B. Paul).

DUNFERMLINE, JAMES ABERCROMBY, 1st Baron (1776-1858), third son of General Sir Ralph Abercromby, was born on the 7th of November 1776. He was called to the bar at Lincoln’s Inn in 1801, and became a commissioner in bankruptcy, and subsequently steward for the estates of the 5th duke of Devonshire. In 1807 he was chosen member of parliament for the borough of Midhurst, and in 1812 was returned for Calne by the influence of the 3rd marquess of Lansdowne. He attached himself to the Whigs, but his chief interest was reserved for Scottish questions, and on two occasions he sought to change the method of electing representatives to parliament for the city of Edinburgh. When the Whigs under George Canning came into power in 1827, Abercromby was made judge-advocate-general, and became chief baron of the exchequer of Scotland in 1830, when he resigned his seat in parliament. This office was abolished in 1832, and Abercromby received a pension of £2000

a year, and was sent as member for Edinburgh to the reformed parliament. After being an unsuccessful candidate for the office of speaker he joined the cabinet of Earl Grey in 1834 as master of the mint. Again a candidate for the speakership in the new parliament of 1835, Abercromby was elected to this office after an exceptionally keen contest by a majority of ten votes. As speaker he was not very successful in quelling disorder, but he introduced several important reforms in the management of private bills. Resigning his office in May 1839 he was created Baron Dunfermline of Dunfermline, and granted a pension of £4000 a year. He continued his interest in the affairs of Edinburgh, and was one of the founders of the United Industrial school. He died at Colinton House, Midlothian, on the 17th of April 1858, and was succeeded in the title by his only son, Ralph. His wife was Marianne, daughter of Egerton Leigh of West Hall, High Leigh, Cheshire. He wrote a life of his father, Sir Ralph Abercromby, which was published after his death (Edinburgh, 1861).

See Spencer Walpole, *History of England* (London, 1890); *Greville Memoirs*, edited by H. Reeve (London, 1896); Lord Cockburn's *Journal* (Edinburgh, 1874).

DUNFERMLINE (Gaelic, "the fort on the crooked linn"), a royal, municipal and police burgh of Fifeshire, Scotland. Pop. (1891) 22,157; (1901) 25,250. It is situated on high ground 3 m. from the shore of the Firth of Forth, with two stations on the North British railway—Lower Dunfermline 16¾ m., and Upper Dunfermline 19¼ m. N.W. of Edinburgh, via the Forth Bridge. The town is intersected from north to south by Pittencrieff Glen, a deep, picturesque and tortuous ravine, from which the town derives its name and at the bottom of which flows Lyne Burn.

The history of Dunfermline goes back to a remote period, for the early Celtic monks known as Culdees had an establishment here; but its fame and prosperity date from the marriage of Malcolm Canmore and his queen Margaret, which was solemnized in the town in 1070. The king then lived in a tower on a mound surrounded on three sides by the glen. A fragment of this castle still exists in Pittencrieff Park, a little west of the later palace. Under the influence of Queen Margaret in 1075 the foundations were laid of the Benedictine priory, which was raised to the rank of an abbey by David I. Robert Bruce gave the town its charter in 1322, though in his *Fife: Pictorial and Historical* (ii. 223), A.H. Millar contends that till the confirming charter of James VI. (1588) all burghal privileges were granted by the abbots.

In the 18th century Dunfermline impressed Daniel Defoe as showing the "full perfection of decay," but it is now one of the most prosperous towns in Scotland. Its staple industry is the manufacture of table linen. The weaving of damask was introduced in 1718 by James Blake, who had learned the secret of the process in the workshops at Drumsheugh near Edinburgh, to which he gained admittance by feigning idiocy; and since that date the linen trade has advanced by leaps and bounds, much of the success being due to the beautiful designs produced by the manufacturers. Among other industries that have largely contributed to the welfare of the town are dyeing and bleaching, brass and iron founding, tanning, machine-making, brewing and distilling, milling, rope-making and the making of soap and candles, while the collieries in the immediate vicinity are numerous and flourishing.

The town is well supplied with public buildings. Besides the New Abbey church, the United Free church in Queen Anne Street founded by Ralph Erskine, and the Gillespie church, named after Thomas Gillespie (1708-1774), another leader of the Secession movement, possess some historical importance. Erskine is commemorated by a statue in front of his church and a sarcophagus over his grave in the abbey churchyard; Gillespie by a marble tablet on the wall above his resting-place within the abbey. The Corporation buildings, a blend of the Scots Baronial and French Gothic styles, contain busts of several Scottish sovereigns a statue of Robert Burns, and Sir Noel Paton's painting of the "Spirit of Religion." Other structures are the County buildings, the Public, St Margaret's, Music and Carnegie halls, the last in the Tudor style, Carnegie public baths, high school (founded in 1560), school of science and art, and two hospitals. Several distinguished men have been associated with Dunfermline. Robert Henryson (1430-1506), the poet, was long one of its schoolmasters. John Row (1568-1646), the Church historian, held the living of Carnock, 3 m. to the E., and David Ferguson (d. 1598) who made the first collection of Scottish proverbs (not published till 1641), was parish minister; Robert Gilfillan (1798-1850), the poet, and Sir Joseph Noel Paton (1821-1901), painter and poet—whose father was a designer of patterns

for the damask trade—were all born here. Andrew Carnegie (b. 1837), however, is in a sense the most celebrated of all her sons, as he is certainly her greatest benefactor. He gave to his birthplace the free library and public baths, and, in 1903, the estate of Pittencrieff Park and Glen, rich in historical associations as well as natural charm, together with bonds yielding £25,000 a year, in trust for the maintenance of the park, the support of a theatre for the production of plays of the highest merit, the periodical exhibitions of works of art and science, the promotion of horticulture among the working classes and the encouragement of technical education in the district. The town is governed by a provost, bailies and council, and, with Stirling, Culross, Inverkeithing and Queensferry (the Stirling group), combines in returning a member to parliament.

Dunfermline Abbey is one of the most important remains in Scotland. Excepting Iona it has received more of Caledonia's royal dead than any other place in the kingdom. Within its precincts were buried Queen Margaret and Malcolm Canmore; their sons Edgar and Alexander I., with his queen; David I. and his two queens; Malcolm IV.; Alexander III., with his first wife and their sons David and Alexander; Robert Bruce, with his queen Elizabeth and their daughter Matilda; and Annabella Drummond, wife of Robert III. and mother of James I. Bruce's heart rests in Melrose, but his bones lie in Dunfermline Abbey, where (after the discovery of the skeleton in 1818) they were reinterred with fitting pomp below the pulpit of the New church. In 1891 the pulpit was moved back and a monumental brass inserted in the floor to indicate the royal vault. The tomb of St Margaret and Malcolm, within the ruined walls of the Lady chapel, was restored and enclosed by command of Queen Victoria. During the winter of 1303 the court of Edward I. was held in the abbey, and on his departure next year most of the buildings were burned. When the Reformers attacked the abbey church in March 1560, they spared the nave, which served as the parish church till the 19th century, and now forms the vestibule of the New church. This edifice, in the Perpendicular style, opened for public worship in 1821, occupies the site of the ancient chancel and transepts, though differing in style and proportions from the original structure. The old building was a fine example of simple and massive Norman, as the nave testifies, and has a beautiful doorway in its west front. Another rich Norman doorway was exposed in the south wall in 1903, when masons were cutting a site for the memorial to the soldiers who had fallen in the South African War. A new site was found for this monument in order that the ancient and beautiful entrance might be preserved. The venerable structure is maintained by the commissioners of woods and forests, and private munificence has provided several stained-glass windows. Of the monastery there still remains the south wall of the refectory, with a fine window. The palace, a favourite residence of many of the kings, occupying a picturesque position near the ravine, was of considerable size, judging from the south-west wall, which is all that is left of it. Here James IV., James V. and James VI. spent much of their time, and within its walls were born three of James VI.'s children—Charles I., Robert and Elizabeth. After Charles I. was crowned he paid a short visit to his birthplace, but the last royal tenant of the palace was Charles II., who occupied it just before the battle of Pitreavie (20th of July 1650), which took place 3 m. to the south-west, and here also he signed the National League and Covenant.

See A.H. Millar's *Fife: Pictorial and Historical* (2 vols., 1895); and Sheriff Æneas Mackay's *History of Fife and Kinross* (1896).

DUNGANNON, a market town of Co. Tyrone, Ireland, in the east parliamentary division, on an acclivity 8 m. W. of the south-western shore of Lough Neagh. Pop. of urban district (1901) 3694. It is 103 m. N.N.W. from Dublin by the Great Northern railway, and a branch line runs thence to Cookstown. The only public buildings of note are the parish church, with an octagonal spire, and a royal school founded in 1614 and settled in new buildings at the end of the 18th century; it is now managed by the county Protestant Board of Education. Linens, muslin and coarse earthenware are manufactured, tanning is prosecuted, and there is trade in corn and timber. The early history of the place is identified with the once powerful family of the O'Neills, whose chief residence was here, and a large rath or earthwork north of the town was the scene of the inauguration of their chiefs, but of the castle and abbey founded by this family there are no remains. In Dungannon the independence of the Irish parliament (to which the town returned two members) was proclaimed in 1782. The town was formerly corporate, and was a parliamentary borough

returning one member to the Imperial parliament until 1885.

DUNGARPUR, a native state of India, in the Rajputana agency, in the extreme south of Rajputana. A large portion is hilly, and inhabited by Bhils. Its area is 1447 sq. m. In 1901 the total population was 100,103, showing an increase of 2% in the decade. The revenue is £15,100, and the tribute £2276. An annual fair is held at Baneswar. Kherwara is the headquarters of the Mewar Bhil corps.

The chiefs of Dungarpur, who bear the title of maharawal, are descended from Mahup, eldest son of Karan Singh, chief of Mewar in the 12th century, and claim the honours of the elder line of Mewar. Mahup, disinherited by his father, took refuge with his mother's family, the Chauhans of Bagar, and made himself master of that country at the expense of the Bhil chiefs. The town of Dungarpur (pop. 6094 in 1901), the capital of the state, was founded towards the end of the 14th century by his descendant Rawal Bir Singh, who named it after Dungaria, an independent Bhil chieftain whom he had caused to be assassinated. After the death of Rawal Udai Singh of Bagar at the battle of Khanua in 1527, his territories were divided into the states of Dungarpur and Banswara, the name of Bagar being still often applied to the tract covered by these states. Dungarpur fell under the sway of the Moguls and Mahrattas in turn, and was taken under British protection by treaty in 1818.

DUNGARVAN, a market town and seaport of Co. Waterford, Ireland, in the west parliamentary division, 28½ m. W.S.W. from Waterford by the Waterford and Mallow branch of the Great Southern & Western railway. Pop. of urban district (1901) 4850. It is situated on the south coast, on the Bay of Dungarvan, at the mouth of the Colligan, which divides the town into two parts, connected by a bridge of a single arch. The eastern suburb is called Abbeyside, where the remains of an ancient keep, erected by the M'Graths, still exist, together with portions of an Augustinian friary, founded by the same family in the 14th century and incorporated with a Roman Catholic chapel. In the main portion of the town a part of the keep of a castle of King John remains. Brewing is carried on, and there are woollen mills. The exports consist chiefly of agricultural produce. Dungarvan was incorporated in the 15th century, was represented by two members in the Irish parliament until the Union, and returned a member to the Imperial parliament until 1885. It was fortified with walls by John when the castle was built. A story is told that Cromwell spared the town from bombardment owing to the wit of a woman who drank his health at the town-gate.

DUNGENESS, a promontory of the south coast of England, in the south of Kent, near the town of Lydd. It is a low-lying broad bank of shingle, forming the seaward apex of the great level of the Romney Marshes. Its seaward accretion is estimated at 6 ft. annually. Its formation is characteristic, consisting of a series of ridges forming a succession of curves from a common centre. It is unique, however, among the great promontories of the south coast of England, the accretion of gravel banks falling into deep water contrasting with the cliff-bound headlands of the North Foreland, Beachy Head and the Lizard, and with the low eroded Selsey Bill, off which the sea is shallow. A lighthouse (50° 55′ N., 0° 58′ E.) stands on the ness, which has been the scene of many shipwrecks, and has been lighted since the time of James I. There are also here Lloyds' signalling station, coast-guard stations, and the terminus of a branch of the South-Eastern & Chatham railway.

The name Dungeness has also been applied elsewhere; thus the point on the north side of the eastern entrance to Magellan Strait is so called, and there is a town of Dungeness near a

promontory on the coast of Washington, U.S.A. (Strait of Juan de Fuca).

DUNGEON, the prison in a castle keep, so called because the Norman name for the latter is donjon (*q.v.*), and the dungeons or prisons (*q.v.*) are generally in its lowest storey. (See KEEP.)

DUNKELD, a town of Perthshire, Scotland, on the left bank of the Tay, 15½ m. N.W. of Perth by the Highland railway. Pop. (1901) 586. The river is crossed by a bridge of seven arches which was designed by Thomas Telford in 1805 and opened in 1808. The town lies in the midst of luxuriant trees, and the noble sweep of the Tay, the effectively situated bridge, the magnificent grounds of Dunkeld House, and the protecting mountains combine to give it a very romantic appearance. The town hall is the principal modern building, and the fountain erected in Market Square to the memory of the 6th duke of Atholl (d. 1864) occupies the site of the old cross.

As early as 729—some authorities fix the date a hundred and fifty years before—the Culdees possessed a monastery at Dunkeld, which was converted into a cathedral by David I. in 1127. This structure stood until the Reformation, when it was unroofed and suffered to fall into ruin. The building consists of the nave (120 ft. long, 60 ft. wide, 40 ft. high), aisles (12 ft. wide), choir, chapter-house and tower. The nave is the most beautiful portion. The Pointed arches rest upon pillars, possibly Norman, and above them, below the Decorated clerestory windows, is a series of semicircular arches with flamboyant tracery, a remarkable feature. The choir, founded by Bishop William Sinclair (d. 1337), has been repaired, and serves as the parish church, a blue marble slab in the floor marking the bishop’s grave. The chapter-house, adjoining the choir, was built by Bishop Thomas Lauder (1395-1481) in 1469, and the vault beneath is the burial-place of the Atholl Murrays. Lauder also began the tower, completed in 1501. In the porch of the church is the most interesting of the extant old tombs, namely, the recumbent effigy of Alexander Stewart, the Wolf of Badenoch (1343-1405; the inscription refers his death to 1394, but this is said to be an error). The most famous of the Bishops was Gavin Douglas (1474-1522), translator of the *Aeneid*. One of the most heroic exploits in the annals of warfare is associated with the cathedral. Shortly after the battle of Killiecrankie (1689), the Cameronian regiment, enrolled in the same year (afterwards the 26th Foot), was despatched to hold Dunkeld prior to another invasion of the Highlands. It was under the command of Colonel William Cleland (b. 1661), a poet of some merit. On the 26th of August a force of 5000 Highlanders suddenly appearing, Cleland posted his men in the church and behind the wall of the earl of Atholl’s mansion. Still flushed with their victory under Dundee, and animated by bitterest hatred of their Whiggamore foes, the Highlanders assaulted the position of the Covenanters, who were 1200 strong, with the most desperate valour. Sustained by their enthusiasm, however, the recruits displayed equal courage, and, at the end of four hours’ stubborn fighting, their defence was still intact. Fearing lest victory, even if won, might be purchased too dearly, the Highlanders gradually withdrew. While leading a sortie Cleland was shot dead, and was buried in the churchyard.

Adjoining the cathedral is Dunkeld House, a seat of the duke of Atholl, the grounds of which are estimated to contain 50 m. of walks and 30 m. of drives. On the lawn near the cathedral stand two of the earliest larches grown in Great Britain, having been introduced from Tirol by the 2nd duke in 1738. The 4th duke planted several square miles of the estate with this tree, of which he had made a special study.

A mile south of Dunkeld, on the left bank of the Tay, is the village of Birnam (pop. 389), where Sir John Everett Millais, the painter, made his summer residence. It lies at the foot of Birnam Hill (1324 ft.), once covered with a royal forest that has been partly replaced by plantations. The oak and sycamore in front of Birnam House, the famed twin trees of Birnam, are believed to be more than 1000 years old, and to be the remnant of the wood of Birnam which Shakespeare immortalized in *Macbeth*. The Pass of Birnam, where the river

narrows, was the path usually taken by the Highlanders in their forays. In the vicinity are the castles of Murthly, one a modern mansion in the Elizabethan style, erected about 1838 from designs by James Gillespie Graham (1777-1855), and the other the old castle, still occupied, which was occasionally used as a hunting-lodge by the Scottish kings.

At Little Dunkeld, almost opposite to Dunkeld, the Bran joins the Tay, after a run of 11 m. from its source in Loch Freuchie. It is celebrated for its falls about 2 m. from the mouth. The upper fall is known as the Rumbling Bridge from the fact that the stream pours with a rumbling noise through a deep narrow gorge in which a huge fallen rock has become wedged, forming a rude bridge or arch. Inver, near the mouth of the Bran, was the birthplace of the two famous fiddlers, Niel Gow (1727-1807) and his son Nathaniel (1766-1831).

DUNKIRK (Fr. *Dunkerque*), a seaport of northern France, capital of an arrondissement in the department of Nord, on the Straits of Dover, 53 m. N.W. of Lille on the Northern railway. Pop. (1906) 35,767. Dunkirk is situated in the low but fertile district of the Wateringues. It lies, amidst a network of canals, immediately to the west and south of its port, which disputes with Bordeaux the rank of third in importance in France. The populous suburbs of Rosendaël and St Pol-sur-Mer lie respectively to the east and west of the town; to the north-east is the bathing resort of Malo-les-Bains. The streets of Dunkirk are wide and well paved, the chief of them converging to the square named after Jean Bart (born at Dunkirk in 1651), whose statue by David d'Angers stands at its centre. Close to the Place Jean Bart rises the belfry (290 ft. high) which contains a fine peal of bells and also serves as a signalling tower. It was once the western tower of the church of St Eloi, from which it is now separated by a street. St Eloi, erected about 1560 in the Gothic style, was deprived of its first two bays in the 18th century; the present façade dates from 1889. The chapel of Notre-Dame des Dunes possesses a small image, which is the object of a well-known pilgrimage. The chief civil buildings are a large Chamber of Commerce, including the customs and port services, and a fine modern town hall. Dunkirk is the seat of a sub-prefect; its public institutions include tribunals of first instance and of commerce, a board of trade-arbitrators, an exchange, a branch of the Bank of France and a communal college; and it has a school of drawing, architecture and music, a library and a rich museum of paintings. Dunkirk forms with Bergues, Bourbourg and Gravelines a group of fortresses enclosed by inundations and canals. A chain of forts to the eastward is designed to facilitate the deployment of an army, concentrated within the fortified region, towards the Belgian frontier.

The harbour of Dunkirk (see Dock) is approached by a fine natural roadstead entered on the east and west, and protected on the north by sand-banks. From the roadstead, entrance is by a channel into the outer harbour, which communicates with seven floating basins about 115 acres in area and is accessible to the largest vessels. The port is provided with four dry docks and a gridiron, and its quays exceed 5 m. in length. Its commerce is much facilitated by the system of canals which bring it into communication with Belgium, the coal-basins of Nord and Pas-de-Calais, the rich agricultural regions of Flanders and Artois, and the industrial towns of Lille, Armentières, Roubaix, Tourcoing, Valenciennes, &c. The roadstead is indicated by lightships and the entrance channel to the port by a lighthouse which, at an altitude of 193 ft., is visible at a distance of 19 m.

Dunkirk annually despatches a fleet to the Icelandic cod-fisheries, and takes part in the herring and other fisheries. It imports great quantities of wool from the Argentine and Australia, and is in regular communication with New York, London and the chief ports of the United Kingdom, Brazil and the far East. Besides wool, leading imports are jute, cotton, flax, timber, petroleum, coal, pitch, wine, cereals, oil-seeds and oil-cake, nitrate of soda and other chemical products, and metals. The principal exports are sugar, coal, cereals, wool, forage, cement, chalk, phosphates, iron and steel, tools and metal-goods, thread and vegetables. The average annual value of the imports for the years 1901-1905 was £23,926,000 (£22,287,000 for 1896-1900), of exports £6,369,000 (£4,481,000 for 1896-1900). The industries include the spinning of jute, flax, hemp and cotton, iron-founding, brewing, and the manufacture of machinery, fishing-nets, sailcloth, sacks, casks, and soap. There are also saw- and flour-mills, petroleum refineries and oil-works. Ship-building is carried on, and the preparation of fish and cod-liver oil occupies many hands.

Dunkirk is said to have originated in a chapel founded by St Eloi in the 7th century, round which a small village speedily sprang up. In the 10th century it was fortified by Baldwin III., count of Flanders; together with that province it passed successively to Burgundy, Austria and Spain. In the 15th, 16th and 17th centuries its possession was disputed by French and Spaniards. In 1658 Turenne's victory of the Dunes (*q.v.*) gave it into the hands of the French and it was ceded to England. After the Restoration, Charles II., being in money difficulties, sold it to the French king Louis XIV., who fortified it. By the terms of the peace of Utrecht (1713) the fortifications were demolished and its harbour filled up, a sacrifice demanded by England owing to the damage inflicted on her shipping by Jean Bart and other corsairs of the port. In 1793 it was besieged by the English under Frederick Augustus, duke of York, who was compelled to retire after the defeat of Hondschoote.

See A. de St Leger, *La Flandre maritime et Dunkerque* (Paris, 1900).

DUNKIRK, a city and a port of entry of Chautauqua county, New York, U.S.A., on the S. shore of Lake Erie, 40 m. S.W. of Buffalo. Pop. (1890) 9416; (1900) 11,616, of whom 3338 were foreign-born; (1910 census) 17,221. The city is served by the Pennsylvania, the Erie, the Lake Shore & Michigan Southern, the New York, Chicago & St Louis, and the Dunkirk, Allegheny Valley & Pittsburg railways, by the electric line of the Buffalo & Lake Erie Traction Co., and by several lines of freight and passenger steamships. Dunkirk is attractively situated high above the lake, and has several parks, including Point Gratiot and Washington; in the city are the Dunkirk free library, the Brooks Memorial hospital (1891), and St Mary's academy. The city lies in an agricultural and grape-growing region, and has a fine harbour and an extensive lake trade; the manufactures include locomotives, radiators, lumber, springs, shirts, axes, wagons, steel, silk gloves and concrete blocks. The value of factory products increased from $5,225,996 in 1900 to $9,909,260 in 1905, or 89.6%. Large numbers of food-fish are caught in the lake. The municipality owns and operates the water works and the electric lighting plant. Dunkirk was first settled about 1805. It was incorporated as a village in 1837, and was chartered as a city in 1880.

DUNLOP, JOHN COLIN (1785-1842), Scottish man of letters, was born on the 30th of December 1785. In 1816 he became sheriff of Renfrewshire, and retained this office until his death at Edinburgh, on the 26th of January (according to others, in February) 1842. The work by which he is best known, and which will always hold an honourable place in English literature, is his *History of Fiction* (1814; new edition, 1888, with notes by H. Wilson, in Bohn's "Standard Library"). In spite of the somewhat contemptuous notices in *Blackwood's Magazine* (September 1824) and the *Quarterly Review* (July 1815), it may be pronounced the best book on the subject in English. F. Liebrecht, by whom it was translated into German (1851) with valuable notes, describes it as the only work of its kind. Dunlop was also the author of *A History of Roman Literature* (1823-1828), and of *Memoirs of Spain during the Reigns of Philip IV. and Charles II.* (1834).

DUNMORE, a borough of Lackawanna county, Pennsylvania, U.S.A., adjoining Scranton on the N.E. and about 20 m. N.E. of Wilkesbarre. Pop. (1890) 8315; (1900) 12,583, of whom 3103 were foreign-born; (1910 census) 17,615. It is served by the Erie, the Delaware, Lackawanna & Western, and the Lackawanna & Wyoming Valley (electric) railways. Its chief industry is the mining of anthracite coal; the principal establishments are railway repair shops, which in 1905 gave employment to 48.9% of all wage-earners engaged in manufacturing. Among the borough's manufactures are stoves and furnaces, malt liquors and silk. Dunmore is the seat of the state oral school for the deaf. The town was first settled

in 1783 and was incorporated in 1862. Its growth was accelerated by the establishment here, in 1863, of the shops of the railway from Pittston to Hawley built in 1849-1850 by the Pennsylvania Coal Company. Dunmore became a station of the Scranton post office in 1902.

DUNMOW (properly GREAT DUNMOW), a market town in the Epping (W.) parliamentary division of Essex, England, on the river Chelmer, 40 m. N.E. by N. from London on a branch of the Great Eastern railway. Pop. (1901) 2704. The church of St Mary is Decorated and Perpendicular. The town was corporate from the 16th century until 1886. Roman remains have been discovered. Two miles E. is the village of LITTLE DUNMOW, formerly the seat of a priory, remarkable for the custom of presenting a flitch of bacon to any couple who could give proof that they had spent the first year of married life in perfect harmony, and had never at any moment wished they had tarried. In place of the monastic judicature a jury of six bachelors and six maidens appear in the 16th century. A rhyming oath, quoted by Fuller, 682
was taken. The institution of this strange matrimonial prize—which had its parallel at Whichanoure (or Wichnor) in Staffordshire, at St Moleine in Brittany, and apparently also at Vienna—appears to date from the reign of John. The first instance of its award recorded is in 1445, and there are a few others. But there are references which suggest its previous award in *Piers Plowman* and Chaucer. The Chaucerian couplet conveys the idea of an award to a patient husband, without reference to the wife. A revival of the custom was effected in 1855 by Harrison Ainsworth, author of the novel *The Flitch of Bacon*, but the scene of the ceremony was transferred to the town hall of Great Dunmow. It has since been maintained in altered form. (For details see Chambers's *Book of Days*, ii. 748-751; and W. Andrews, *History of the Dunmow Flitch of Bacon Customs*, 1877.) Close to Little Dunmow is Felsted (*q.v.*) or Felstead; and Easton Lodge (with a railway station), a seat of the earl of Warwick, is in the vicinity.

DUNNE, FINLEY PETER (1867-), American journalist and humorist, was born, of Irish descent, in Chicago, Illinois, on the 10th of July 1867. After a public school education he became a newspaper reporter (1885); he was city editor of the Chicago *Times* (1891-1892), a member of the editorial staff of the Chicago *Evening Post* and of the Chicago *Times-Herald* (1892-1897), and editor of the Chicago *Journal* (1897-1900). In 1900 he removed to New York city. Although for several years he had been contributing humorous sketches in Irish brogue to the daily papers, he did not come into prominence until he wrote for the Chicago *Journal* a series of satirical observations and reflections attributed to an honest Irish-American, Martin Dooley, the shrewd philosopher of Archey Road, on social and political topics of the day. These were widely copied by the press of America and England. The first published collection, *Mr Dooley in Peace and in War* (1898), was followed by several others, similar in subject-matter and method, including *Mr Dooley in the Hearts of his Countrymen* (1899), *Mr Dooley's Philosophy* (1900), *Mr Dooley's Opinions* (1901), *Observations by Mr Dooley* (1902), and *Dissertations by Mr Dooley* (1906). These books made their author widely known as the creator of a delightfully original character, and as a humorist of shrewd insight. In 1906 he became associate editor of the *American Magazine*.

DUNNOTTAR CASTLE, a ruined stronghold, on the east coast of Kincardineshire, Scotland, about 2 m. S. of Stonehaven. It stands on a rock 160 ft. high, with a summit area of 4 acres, and surrounded on three sides by the sea. It is accessible from the land by a winding path leading across a deep chasm, to the outer gate in a wall of enormous thickness. It is supposed that a fortress stood here since perhaps the 7th century, but the existing castle dates from 1392, when it was begun by Sir William Keith (d. 1407), great

marischal of Scotland. The keep and chapel are believed to be the oldest structures, most of the other buildings being two centuries later. It was the residence of the earls marischal and was regarded as impregnable. Here the seventh earl entertained Charles II. before the battle of Worcester. When Cromwell became Protector, the Scottish regalia were lodged in the castle for greater security, and, in 1651, when the Commonwealth soldiers laid successful siege to it, they were saved by a woman's wit. Mrs Granger, wife of the minister of Kinneff, a parish about 6 m. to the S., was allowed to visit the wife of the governor, Ogilvy of Barras, and when she rode out she was spinning lint on a distaff. The crown was concealed in her lap, and the distaff consisted of the sword and sceptre. The regalia were hidden beneath the flagstones in the parish church, whence they were recovered at the Restoration. In 1685 the castle was converted into a Covenanters' prison, no fewer than 167 being confined in a dungeon, called therefrom the Whigs' Vault. On the attainder of George, tenth and last marischal, for his share in the earl of Mar's rising in 1715 the castle was dismantled (1720).

DUNOIS, JEAN, Count of (1403-1468), commonly called the "Bastard of Orleans," a celebrated French commander, was the natural son of the duke of Orleans (brother of Charles VI.) and Mariette d'Enghien, Madame de Canny. He was brought up in the house of the duke, and in the company of his legitimate sons, and it appears that he was present at the battle of Beaugé in 1421 and Verneuil in 1424. His earliest feat of arms was the surprise and rout in 1427 of the English, who were besieging Montargis—the first successful blow against the English power in France following a long series of French defeats. In 1428 he defended Orleans with the greatest spirit, and enabled the place to hold out until the arrival of Joan of Arc, when he shared with her the honour of defeating the enemy there in 1429. He then accompanied Joan to Reims and shared in the victory of Patay. After her death he raised the siege of Chartres and of Lagny (1432) and engaged in a series of successful campaigns which ended in his triumphal entry into Paris on the 13th of April 1436. He continued to carry on the war against the English, and gradually drove them to the northward, though his work was to some extent interrupted by the civil disorders of the time, in which he played a conspicuous part. Finally in 1450 he completed the reconquest of northern France, and in 1451 he attacked them in Guienne, taking among other towns Bordeaux, which the English had held for three hundred years, and Bayonne. After the expulsion of the English he was constantly engaged in the highest diplomatic and military missions. In 1465 he joined the league of revolted princes, but, assuming the function of negotiator, he was after a time reinstated in his offices. Dunois was thenceforward in the greatest favour with the court. He died on the 24th of November 1468.

DUNOON, a police and municipal burgh of Argyllshire, Scotland, on the western shore of the Firth of Clyde, opposite to Gourock. Pop. (1901) 6779. Including Kirn and Hunter's Quay, it presents a practically continuous front of seaside villas. The mildness of its climate and the beauty of its situation have made it one of the most prosperous watering-places on the west coast. The principal buildings are the parish church, well-placed on a hill overlooking the pier, convalescent homes, Cottage and Victoria fever hospitals, and the town house. On a conical hill above the pier stand the remains of Dunoon Castle, the hereditary keepership of which was conferred by Robert Bruce on the family of Sir Colin Campbell of Loch Awe, an ancestor of the duke of Argyll. It was visited by Queen Mary in 1563, and in 1643 was the scene of the massacre of the Lamonts by the Campbells. The grounds have been laid out as a recreation garden. Near the hill stands the modern castle. Facing the pier a statue was erected in 1898 of Mary Campbell, Burns's "Highland Mary," who was a native of Dunoon. The town itself is of modern growth, having been a mere fishing village at the beginning of the 19th century. There is frequent communication daily by steamer with the railway piers at Craigendoran and Gourock, and Glasgow merchants are thus enabled to reside here all the year round. Hunter's Quay is the yachting headquarters, the Royal Clyde Yacht Club's house adjoining the pier. Kilmun, on the northern shore of Holy Loch, a portion

of the parish of Dunoon and Kilmun, contains the ruins of a Collegiate chapel founded in 1442 by Sir Duncan Campbell of Loch Awe and used as the burial-ground of the Argyll family.

DUNROBIN CASTLE, a seat of the duke of Sutherland, picturesquely situated on the north-eastern shore of Dornoch Firth, Sutherlandshire, Scotland, about 2 m. N.E. of Golspie, with a private station on the Highland railway. The name is said to have originally meant the fort of Raffu, the “law-man,” or crown agent for the district in 1222, but it was renamed out of compliment to Robert (or Robin), 6th earl of Sutherland, who died in 1389. The ancient portion, dating from the end of the 13th century, was a square structure with towers at the corners, but in 1856 there was added a wing, a main north-eastern tower, and front, with numerous bartizan turrets, and dormer windows in the roof. The stately entrance porch recalls that of Windsor Castle, and the interior is designed and decorated on a sumptuous scale. In April 1746 George Mackenzie, the 3rd earl of Cromarty, thinking that Prince Charles Edward had prevailed at Culloden, seized the castle in his interests, but the Sutherland militia surrounded the building and captured the earl in an apartment which was afterwards called the Cromartie room. The beautiful gardens contain a wealth of trees, which grow with remarkable luxuriance for the latitude of 58° N. The 3rd duke of Sutherland erected a museum in the grounds in which are many specimens of the antiquities of the shire, such as querns, stone tools and weapons, silver brooches and the like, found in brochs and elsewhere. There is a graceful waterfall in Dunrobin glen, through which flows Golspie Burn, near the left bank of which are remains of Pictish towers. About 1 m. N.W. of Golspie rises Ben Bhragie (1256 ft.), crowned by a colossal statue of the 1st duke of Sutherland, by Chantrey.

DUNS, a police burgh and county town of Berwickshire, Scotland. Pop. (1901) 2206. It is situated 44 m. E.S.E. of Edinburgh by road, with a station on the branch line of the North British railway from Reston to St Boswells. The principal buildings are the town-hall, county buildings, corn exchange, mechanics’ institute and the public library. There is a woollen mill, and stock sales are held at frequent intervals. The alternative spelling of Dunse seems to have been in vogue from 1740 till 1882. It was on Duns Law (700 ft.) that the Covenanters, under Alexander Leslie, were encamped in 1639, and the Covenanters’ Stone on the top of the hill has been enclosed to preserve it from relic-hunters. Duns castle, adjoining the town on the W., includes the Tower erected by Thomas Randolph, earl of Moray (d. 1332), and about 3 m. S.W. is the village of Polwarth.

DUNSINANE, a peak of the Sidlaw Hills, in the parish of Collace, Perthshire, Scotland, 8 m. N.E. of Perth. It is 1012 ft. high, and commands a fine view of the Carse of Gowrie and the valley of the Tay. Its chief claim to mention, however, is due to its association with Birnam Wood (about 12 m. N.W.) in two well-known passages in Shakespeare’s *Macbeth*. An old fort on the summit, of which faint traces are still discernible, is traditionally called Macbeth’s Castle.

DUNS SCOTUS, JOHN (1265 or 1275-1308), one of the foremost of the schoolmen. His

birthplace has been variously given as Duns in Berwickshire, Dunum (Down) in Ulster, and Dunstane in Northumberland, but there is not sufficient evidence to settle the question. He joined the Franciscan order in early life, and studied at Merton College, Oxford, of which he is said to have been a fellow. He became remarkably proficient in all branches of learning, but especially in mathematics. When his master, William Varron, removed to Paris in 1301, Duns Scotus was appointed to succeed him as professor of philosophy, and his lectures attracted an immense number of students. Probably in 1304 he went to Paris, in 1307 he received his doctor's degree from the university, and in the same year was appointed regent of the theological school. His connexion with the university was made memorable by his defence of the doctrine of the Immaculate Conception, in which he displayed such dialectical ingenuity as to win for himself the title *Doctor Subtilis*. The doctrine long continued to be one of the main subjects in dispute between the Scotists and the Thomists, or, what is almost the same thing, between the Franciscans and the Dominicans. The university of Paris was so impressed by his arguments, that in 1387 it formally condemned the Thomist doctrine, and a century afterwards required all who received the doctor's degree to bind themselves by an oath to defend the doctrine of the Immaculate Conception. In 1308 Duns Scotus was sent by the general of his order to Cologne, with the twofold object of engaging in a controversy with the Beghards and of assisting in the foundation of a university; according to some, his removal was due to jealousy. He was received with enthusiasm by the inhabitants but died suddenly (it was said, of apoplexy) on the 8th of November in the same year. There was also a tradition that he had been buried alive.

His philosophical position was determined, or at least very greatly influenced, by the antagonism between the Dominicans and the Franciscans. Further, while the genius of Aquinas was constructive, that of Duns Scotus was destructive; Aquinas was a philosopher, Duns a critic. The latter has been said to stand to the former in the relation of Kant to Leibnitz. In the matter of Universals, Duns was more of a realist and less of an eclectic than Aquinas. Theologically, the Thomistic system approximates to pantheism, while that of Scotus inclines distinctly to Pelagianism. The doctrine of the Immaculate Conception was the great subject in dispute between the two parties; it was strenuously opposed by Aquinas, and supported by Duns Scotus, although not without reserve. There were, however, differences of a wider and deeper kind. In opposition to Aquinas, who maintained that reason and revelation were two independent sources of knowledge, Duns Scotus held that there was no true knowledge of anything knowable apart from theology as based upon revelation. In conformity with this principle he denied that the existence of God was capable of being proved, or that the nature of God was capable of being comprehended. He therefore rejected as worthless the ontological proof offered by Aquinas. Another chief point of difference with Aquinas was in regard to the freedom of the will, which Duns Scotus maintained absolutely. He reconciled free-will and necessity by representing the divine decree not as temporarily antecedent, but as immediately related to the action of the created will. He maintained, in opposition to Aquinas, that the will was independent of the understanding, that only will could affect will. From this difference as to the nature of free-will followed by necessary consequence a difference with the Thomists as to the operation of divine grace. In ethics the distinction he drew between natural and theological virtues is common to him with the rest of the schoolmen. (Cf. AQUINAS.) Duns Scotus strongly upheld the authority of the church, making it the ultimate authority on which that of Scripture depends. (See also SCHOLASTICISM.)

The most important of his works consisted of questions and commentaries on the writings of Aristotle, and on the *Sentences* of Lombard, the so-called *Opus Oxoniense* or *Anglicanum*. Complete works, edited by Luke Wadding (13 vols., Lyons, 1639) and at Paris (26 vols., 1891-1895). There is an edition of his *De modis significandi* or *Grammatica speculativa*, the first attempt to investigate the general laws of language, by F.M. Fernández García (Quaracchi, Florence, 1902).

On Duns Scotus generally, see life by Wadding in vol. i. of the works (full, however, of legendary absurdities); J. Müller, *Biographisches über Duns Scotus* (progr., Cologne, 1881); W.J. Townsend, *The Great Schoolmen* (1881); K. Werner, *Die Scholastik des späteren Mittelalters*, i. (1881); J.M. Rigg, in *Dictionary of National Biography*. On his theology: C. Frassen, *Scotus Academicus* (1744, new edition, 1900); Hieronymus de Montefortino (Jerome de Fortius), *Scoti summa theologica* (1728-1738, new edition, 1900); L.F.O. Baumgarten-Crusius, *De theologia Scoti* (1826); R. Seeberg, *Die Theologie des J. Duns Scotus* (1900), and in Herzog-Hauck, *Realencyklopädie für protestantische Theologie* (1898), with bibliog. refs; F. Morin, *Dictionnaire de philosophie et de théologie scolastiques* [= J.P. Migne, *Troisième encyclopédie théologique*, xxi., xxii., 1857]; C.R. Hagenbach, *History of Doctrines* (Eng. tr., ii., 1880). On his philosophy: E. Pluzanski, *Essai sur la philosophie de Duns Scot* (1887); A. Schmid, *Die Thomistische und Scotistische Gewissheitlehre* (1859); M.

Schneid, *Die Körperlehre des J. Duns Scotus*—its relation to Thomism and Atomism (1879); P. Minges, “Ist Duns Scotus Indeterminist?” in *Beiträge zur Geschichte der Philosophie des Mittelalters*, Bd. v. Heft 4 (1905); W. Kahl, *Die Lehre vom Primat des Willens bei Augustinus, Duns Scotus, und Descartes* (1886).

DUNSTABLE, a municipal borough and market town in the southern parliamentary division of Bedfordshire, England, 37 m. N.W. of London, on branches of the Great Northern and London & North-Western railways. Pop. (1901) 5157. It lies at an elevation of about 500 ft. on the bleak northward slope of the Chiltern Hills. The church of St Peter and St Paul is a fine fragment of the church of the Augustinian priory founded by Henry I. in 1131. The building was cruciform, but only the west front and part of the nave remain. The front has a large late Norman portal of four orders, with rich Early English arcading above; the nave arcade is ornate Norman. The original triforium is transformed into a clerestory, the original clerestory being lost. The north-west tower has a Perpendicular upper portion, but the south-west tower is destroyed. The church contains various monuments of the 18th century. Foundations of a palace of Henry I. are traceable near the church. The main part of the town extends for a mile along the broad straight Roman road, Watling Street; the high road from Luton to Tring, which crosses it in the centre of the town, representing the ancient Icknield Way. The chief industry is straw hat manufacture; there are also printing, stationery and engineering works. The borough is under a mayor, 4 aldermen, and 12 councillors. Area, 453 acres.

There may have been a Romano-British village on this site on the Watling Street. Dunstable (*Dunestaple*, *Donestaple*) first appears as a royal borough in the reign of Henry I., who, according to tradition, on account of the depredations of robbers, cleared the forest where Watling Street and the Icknield Way met, and encouraged his subjects to settle there by various grants of privileges. He endowed the priory by charter with the lordship of the manor and borough, which it retained till its dissolution in 1536-1537. The Dunstable Annals deal exhaustively with the history of the monastery and town in the 13th century. In 1219 the prior secured the right of holding a court there for all crown pleas and of sitting beside the justices itinerant, and this led to serious collision between the monks and burgesses. The body of Queen Eleanor rested here for a night on its journey to Westminster, and a cross, of which there is now no trace, was subsequently erected in the market-place. At Dunstable Cranmer held the court which, in 1533, declared Catherine of Aragon’s marriage invalid. At the dissolution a plan was set on foot for the creation of a new bishopric from the spoils of the religious houses, which was to include Bedfordshire and Buckinghamshire with Dunstable as cathedral city. The scheme was never realized, though plans for the cathedral were actually drawn up.

From the earliest time Dunstable has been an agricultural town. The Annals abound with references to the prices and comparative abundance or scarcity of the two staple products, wool and corn. The straw hat manufacture has flourished since the 18th century. Henry I. granted a market held twice a week, and a three days’ fair on the feast of St Peter ad Vincula. John made a further grant of a three days’ fair from the 10th of May. A market is still held weekly, also fairs in May and August correspond to these grants. Dunstable had also a gild merchant and was affiliated to London. In 1864 the town was made a municipal borough by royal charter.

DUNSTAFFNAGE, a ruined castle of Argyllshire, Scotland, 3 m. N.N.E. of Oban. It is situated on a platform of conglomerate rock forming a promontory at the south-west of the entrance to Loch Etive and is surrounded on three sides by the sea. It dates from the 13th century, occupying the site of the earlier stronghold in which was kept the Stone of Destiny prior to its removal to Scone (*q.v.*) in 843. The castle is a quadrangular structure of great strength, with rounded towers at three of the angles, and has a circumference of about 400 ft. The walls are 60 ft. high and 10 ft. thick, affording a safe promenade, which commands a

splendid view. Brass cannon recovered from wrecked vessels of the Spanish Armada are mounted on the walls. In 1308 Robert Bruce captured the fortress from the original owners, the MacDougalls, and gave it to the Campbells. It was garrisoned at the period of the Jacobite rebellions of 1715 and 1745, fell into decay early in the 19th century, and is now the property of the crown, the duke of Argyll being hereditary keeper. The adjoining chapel, in a very ruinous state, was the burial-place of the Campbells of Dunstaffnage.

There are other interesting places on Loch Etive, an arm of the sea, measuring 19¼ m. in length and from ⅛ m. to fully 1 m. in width. Near the mouth, where the lake narrows to a strait, are the rapids which Ossian called the Falls of Lora, the ebbing and flowing tides, as they rush over the rocky bar, creating a roaring noise audible at a considerable distance. In the parish of Ardchattan, on the north shore, stands the beautiful ruin of St Modan's Priory, founded in the 13th century for Cistercian monks of the order of Vallis Caulium. It is said that Robert Bruce held within its walls the last parliament in which the Gaelic language was used. On the coast of Loch Nell, or Ardmucknish Bay, is the vitrified fort of Beregonium, not to be confounded with Rerigonium (sometimes miscalled Berigonium) on Loch Ryan in Wigtownshire—a town of the Novantae Picts, identified with Innermessan. The confusion has arisen through a textual error in an early edition of Ptolemy's *Geography*.

DUNSTAN, SAINT (924 or 925-988),[1] English archbishop, entered the household of King Æthelstan when still quite a boy. Here he soon excited the dislike of his young companions, who procured his banishment from the court. He now took refuge with his kinsman Alphege, bishop of Winchester, whose persuasion, seconded by a serious illness, induced him to become a monk. Æthelstan's successor, Edmund, recalled him to the court and made him one of his counsellors. Through the machinations of enemies he was again expelled from the royal presence; but shortly afterwards Edmund revoked the sentence and made him abbot of Glastonbury. His successor Edred showed him greater favour still. On the accession of Edwig, however, in 955, Dunstan's fortunes underwent a temporary eclipse. Having offended the influential Ælfgifu, he was outlawed and compelled to flee to Flanders. But in 957 the Mercians and Northumbrians revolted and chose Edgar as their king. The new king at once recalled Dunstan, who was made a bishop. At first apparently he was without a see; but that of Worcester falling vacant, he was appointed to fill it. In 959 he received the bishopric of London as well. In the same year Edwig died and Edgar became sole king, Dunstan shared his triumph, and was appointed archbishop of Canterbury. On Edgar's death in 975 the archbishop's influence secured the crown for his elder son Edward. But with the accession of Æthelred in 979 Dunstan's public career came to an end. He retired to Canterbury, and died on the 19th of May 988.

Dunstan is of more importance as a lay than as an ecclesiastical statesman. The great church movement of his time—the reformation of English monasticism on Benedictine lines—found in him a sympathizer, but in no sense an active participant. But as a secular statesman he occupies a high place. He guided the state successfully during the nine years' reign of the invalid Edred. Through that of Edgar, he was the king's chief minister and most trusted adviser; and to him a great share in its glories must be assigned.

See *Memorials of St Dunstan*, edited by W. Stubbs (London, 1874); *Anglo-Saxon Chronicle*, edited by C. Plummer (Oxford, 1892-1899).

1 The date of Dunstan's birth here given is that given in the Anglo-Saxon chronicle and hitherto accepted. In an appendix to the *Bosworth Psalter*, edited by Mr Edmund Bishop and Abbot Gasquet (1908), Mr Leslie A. St L. Toke gives reason to believe that the date must be set back at least as early as 910.

DUNSTER, a market town in the Western parliamentary division of Somersetshire, England, 1½ m. from the shore of the Bristol Channel, on the Minehead branch of the Great Western railway. Pop. (1901) 1182. Its streets, sloping sharply, contain many old houses. On

an eminence stands the ancient castle, entered by a gateway of the 13th century. There are portions of later date, but still ancient, in the main building, but it has been considerably modernized as a residence. The church of St George has Norman portions, but the building is in the main Perpendicular. The fine tower in this style is characteristic of this part of England. There are traces of monastic buildings near the church, for it belonged to a Benedictine house of early Norman foundation. The church is cruciform and the altar stands beneath the eastern lantern arch, a fine rood screen separating off the choir, which was devoted to monastic use, while the nave was kept for the parishioners, in consequence of a dispute between the vicar and the monastery in 1499. The Yarn Market, a picturesque octagonal building with deep sloping roof, in the main street, dates from *c.* 1600, and is a memorial of Dunster's former important manufacture of cloth.

There were British, Roman and Saxon settlements at Dunster (*Torre Dunestorre*, *Dunester*), fortified against the piracies of the Irish Northmen. The Saxon fort of Alaric was replaced by a Norman castle built by William de Mohun, first lord of Dunster, who founded the priory of St George. Before 1183, Dunster had become a mesne borough, owned by the de Mohuns until the 14th century when it passed to the Luttrells, the present owners. Reginald de Mohun granted the first charter between 1245 and 1247, which diminished fines and tolls, limited the lord's "mercy," and provided that the burgesses should not against their will be made bailiffs or farmers of the seaport. John de Mohun granted other charters in 1301 and 1307. Dunster was only represented in parliament in conjunction with Minehead, one of its tithings being part of that borough. Representation began in 1562, and was lost in 1832. Feudal in origin, Dunster's later importance was commercial, and the port had a considerable wool, corn and cattle trade with Ireland. During the middle ages the Friday market and fair in Whit week, granted by the first charter, were centres for the sale of yarn and cloth called "Dunsters," made in the town. The market day is still Friday. The manufacture of cloth had disappeared, the harbour is silted up, and there is no special local industry.

See Sir H.C. Maxwell Lyte, *Dunster and its Lords* (1882); *Victoria County History, Somerset*, vol. ii.

DUNTOCHER (Gaelic, "The Fort of ill hap"), a town on Dalmuir Burn, Dumbartonshire, Scotland, 9 m. from Glasgow. Pop. (1901) 2122. The district contains coal, limestone and ironstone, but there is not much mining. Many of the inhabitants are employed at the Singer factory in Kilbowie and at the Clyde Trust yards in Dalmuir. There are considerable Roman remains in the neighbourhood. Antoninus' Wall passed immediately to the south; the burn is crossed by a bridge alleged to be of Roman origin (which at least is doubtful); subterranean remains indicate a Roman structure; a Roman camp has been traced, and the vicinity has yielded a number of altars, urns, vases, coins and tablets, which are now in the custody of Glasgow University.

DUNTON, JOHN (1659-1733), English bookseller and author, was born at Graffham, in Huntingdonshire, on the 4th of May 1659. His father, grandfather and great-grandfather had all been clergymen. At the age of fifteen he was apprenticed to Thomas Parkhurst, bookseller, at the sign of the Bible and Three Crowns, Cheapside, London. Dunton ran away at once, but was soon brought back, and began to "love books." During the struggle which led to the Revolution, Dunton was the treasurer of the Whig apprentices. He became a bookseller at the sign of the Raven, near the Royal Exchange, and married Elizabeth Annesley, whose sister married Samuel Wesley. His wife managed his business, so that he was left free in a great measure to follow his own eccentric devices. In 1686, probably because he was concerned in the Monmouth rising, he visited New England, where he stayed eight months selling books and observing with interest the new country and its inhabitants. Dunton had become security for his brother's debts, and to escape the creditors he made a short excursion to Holland. On his return to England, he opened a new shop in

the Poultry in the hope of better times. Here he published weekly the *Athenian Mercury* which professed to answer all questions on history, philosophy, love, marriage and things in general. His wife died in 1697, and he married a second time; but a quarrel about property led to a separation; and being incapable of managing his own affairs, he spent the last years of his life in great poverty. He died in 1733. He wrote a great many books and a number of political squibs on the Whig side, but only his *Life and Errors of John Dunton* (1705), on account of its naïveté, its pictures of bygone times, and of the literary history of the period, is remembered. His letters from New England were published in America in 1867.

DÜNTZER, JOHANN HEINRICH JOSEPH (1813-1901), German philologist and historian of literature, was born at Cologne on the 12th of July 1813. After studying philology and especially ancient classics and Sanskrit at Bonn and Berlin (1830-1835), he took the degree of doctor of philosophy and established himself in 1837 at Bonn as *Privat docent* for classical literature. He had already, in his Goethes *Faust in seiner Einheit und Ganzheit* (1836) and *Goethe als Dramatiker* (1837), advocated a new critical method in interpreting the German classics, which he wished to see treated like the ancient classics. He subsequently turned his attention almost exclusively to the poets of the German classical period, notably Goethe and Schiller. Düntzer's method met with much opposition and he consequently failed to obtain the professorship he coveted. In 1846 he accepted the post of librarian at the Roman Catholic gymnasium in Cologne, where he died on the 16th of December 1901. Düntzer was a painstaking and accurate critic, but lacking in inspiration and finer literary taste; consequently his work as a biographer and commentator has, to a great extent, been superseded and discredited.

Among his philological writings may be mentioned *Die Lehre von der lateinischen Wortbildung* (1836); *Die Deklination der indogermanischen Sprachen* (1839); *Homer und der epische Kyklos* (1839); *Die homerischen Beiworter des Gotter- und Menschengeschlechts* (1859). Of his works on the German classical poets, especially Goethe, Schiller and Herder, the following are particularly worthy of note, *Erlauterungen zu den deutschen Klassikern* (1853-1892); *Goethes Prometheus und Pandora* (1850); *Goethes Faust* (2 vols., 1850-1851; 2nd ed. 1857); *Goethes Gotz und Egmont* (1854); *Aus Goethes Freundeskreise* (1868); *Abhandlungen zu Goethes Leben und Werken* (2 vols., 1885); *Goethes Tagebucher der sechs ersten weimarischen Jahre* (1889); *Goethes Leben* (1880; 2nd ed. 1883; Engl. transl. by T. Lyster, London, 1884); *Schillers Leben* (1881); *Schiller und Goethe; Übersicht und Erlauterung zum Briefwechsel zwischen Schiller und Goethe* (1859); *Herders Reise nach Italien* (1859); *Aus Herders Nachlass* (3 vols., 1856-1857), and further, *Charlotte von Stein* (1874).

DUNWICH, a village in the Eye parliamentary division of Suffolk, England, on the coast between Southwold and Aldeburgh, 5 m. S.S.W. of Southwold. Pop. (1901) 157. This was in Anglo-Saxon days the most important commercial centre and port of East Anglia. It was probably a Romano-British site. The period of its highest dignity was the Saxon era, when it was called Dommocceaster and Dunwyk. Early in the 7th century, when Sigebert became king of East Anglia, Dunwich was chosen his capital and became the nursery of Christianity in Eastern Britain. A bishopric was founded (according to Bede in 630, while the Anglo-Saxon chronicle gives 635), the name of the first bishop being Felix. Sigebert's reign was notable for his foundation of a school modelled on those he had seen in France; it was probably at Dunwich, but formed the nucleus of what afterwards became the university of Cambridge. By the middle of the 11th century (*temp.* Edward the Confessor) Dunwich was declining, as it had already suffered from an evil which later caused its total ruin, namely the inroads of the sea on the unstable coast. At the Norman Conquest the manor was granted to Robert Malet; but the history of the place remains blank until the reign of Henry II., when it re-emerged into prosperity. In 1173 the sight of its strength caused Robert earl of Leicester to despair of besieging it. The town received a charter from King John. In the reign of Edward I. it is recorded to have possessed 36 ships and "barks," trading to the

North Seas, Iceland and elsewhere, with 24 fishing boats, besides maintaining 11 ships of war. But early in the reign of Edward III. the attacks of the sea began to make headway again. In 1347 over 400 houses were destroyed. In 1570, after a terrible storm, appeal was made to Elizabeth, who parsimoniously granted money obtained by the sale of lead and other materials from certain neighbouring churches. But the doomed town was gradually engulfed, and now the only outward evidence of the old wealthy port is the ruined fragment of the church of All Saints, overhanging a low cliff, which, as it crumbles, exposes the coffins and bones in the former churchyard, the greater part of which has disappeared. A small white flower growing wild among the ruins is called the Dunwich Rose, and is traditionally said to have been planted and cultivated by monks. Many relics have been discovered by excavation, and even from beneath the waves. Until 1832 Dunwich returned 2 members to parliament.

DUOVIRI, less correctly DUUMVIRI (from Lat. *duo* two, and *vir*, man), in ancient Rome, the official style of two joint magistrates. Such pairs of magistrates were appointed at various periods of Roman history both in Rome itself and in the colonies and municipia. (1) *Duumviri iuri* (*iure*) *dicundo*, municipal magistrates, whose chief duties were concerned with the administration of justice. Sometimes there were four of these magistrates (*Quattuorviri*). (2) *Duumviri quinquennales*, also municipal officers, not to be confused with the above, who were elected every fifth year for one year to exercise the function of the censorship which was in abeyance for the intervening four years. (3) *Duumviri sacrorum*, officers who originally had charge of the Sibylline books; they were afterwards increased to ten (*decemviri sacris faciundis*), and in Sulla's time to fifteen (*quindecimviri*). (4) *Duumviri aedi locandae*, originally officers specially appointed to supervise the erection of a temple. There were also *duumviri aedi dedicandae*. (5) *Duumviri navales*, extraordinary officers appointed *ad hoc* for the equipping of a fleet. Originally chosen by consuls or dictator, they were elected by the people after 311 B.C. (Livy ix. 30; xl. 18; xli. 1). (6) *Duumviri perduellionis*, the earliest criminal court for trying offences against the state (see TREASON: *Roman Law*). (7) *Duumviri viis extra urbem purgandis*, subordinate officers under the aediles, whose duty it was to look after those streets of Rome which were outside the city walls. Apparently in 20 B.C., certainly by 12 B.C., their duties were transferred to the *Curatores viarum*. From at least as early as 45 B.C. (cf. the Lex Iulia Municipalis) the streets of the city were superintended by *Quattuorviri viis in urbe purgandis*, later called *Quattuorviri viarum purgandarum*.

See Fiebiger and Liebenam in Pauly-Wissowa, *Realencyc.* v. pt. 2.

DUPANLOUP, FÉLIX ANTOINE PHILIBERT (1802-1878), French ecclesiastic, was born at St Félix in Savoy on the 3rd of January 1802. In his earliest years he was confided to the care of his brother, a priest in the diocese of Chambéry. In 1810 he was sent to a *pensionnat ecclésiastique* at Paris. Thence he went to the seminary of St Nicolas de Chardonnel in 1813, and was transferred to the seminary of St Sulpice at Paris in 1820. In 1825 he was ordained priest, and was appointed vicar of the Madeleine at Paris. For a time he was tutor to the Orleans princes. He became the founder of the celebrated academy at St Hyacinthe, and received a letter from Gregory XVI. eulogizing his work there, and calling him *Apostolus juventutis*. His imposing height, his noble features, his brilliant eloquence, as well as his renown for zeal and charity, made him a prominent feature in French life for many years. Crowds of persons attended his addresses, on whom his energy, command of language, powerful voice and impassioned gestures made a profound impression. When made bishop of Orleans in 1849, he pronounced a fervid panegyric on Joan of Arc, which attracted attention in England as well as France. Before this he had been sent by Archbishop Affre to Rome, and had been appointed Roman prelate and protonotary apostolic. For thirty years he remained a notable figure in France, doing his utmost to arouse his countrymen from religious indifference. In ecclesiastical policy his views were moderate; thus he opposed the definition of the dogma of papal infallibility both before and during the Vatican council, but was among the first to accept the dogma when decreed. He was a distinguished educationist

who fought for the retention of the Latin classics in the schools and instituted the celebrated catechetical method of St Sulpice. Among his publications are *De l'éducation* (1850), *De la haute éducation intellectuelle* (3 vols., 1866), *Œuvres choisies* (1861, 4 vols.); *Histoire de Jésus* (1872), a counterblast to Renan's *Vie de Jésus*. He died on the 11th of October 1878.

See *Life* by F. Lagrange (Eng. tr. by Lady Herbert, London, 1885).

DUPERRON, JACQUES DAVY (1556-1618), French cardinal, was born at St Lô, in Normandy, on the 15th of November 1556. His father was a physician, who on embracing the doctrines of the Reformation became a Protestant minister, and to escape persecution settled at Bern, in Switzerland. Here Jacques Davy received his education, being taught Latin and mathematics by his father, and learning Greek and Hebrew and the philosophy then in vogue. Returning to Normandy he was presented to the king by Jacques of Matignon; after he had abjured Protestantism, being again presented by Philip Desportes, abbot of Tiron, as a young man without equal for knowledge and talent, he was appointed reader to the king. He was commanded to preach before the king at the convent of Vincennes, when the success of his sermon on the love of God, and of a funeral oration on the poet Ronsard, induced him to take orders. On the death of Mary queen of Scots he was chosen to pronounce her eulogy. On the death of Henry III., after having supported for some time the cardinal de Bourbon, the head of the league against the king, Duperron became a faithful servant of Henry IV., and in 1591 was created by him bishop of Evreux. He instructed Henry in the Catholic religion; and in 1594 was sent to Rome, where with Cardinal d'Ossat (1536-1604) he obtained Henry's absolution. On his return to his diocese, his zeal and eloquence were largely instrumental in withstanding the progress of Calvinism, and among others he converted Henry Sponde, who became bishop of Pamiers, and the Swiss general Sancy. At the conference at Fontainebleau in 1600 he argued with much eloquence and ingenuity against Du Plessis Mornay (1549-1623). In 1604 he was sent to Rome as *chargé d'affaires de France*; when Clement VIII. died, he largely contributed by his eloquence to the election of Leo XI. to the papal throne, and, on the death of Leo twenty-four days after, to the election of Paul V. While still at Rome he was made a cardinal, and in 1606 became archbishop of Sens. After the death of Henry IV. he took an active part in the states-general of 1614, when he vigorously upheld the ultramontane doctrines against the Third Estate. He died in Paris on the 6th of September 1618.

See *Les Diverses Œuvres de l'illustrissime cardinal Duperron* (Paris, 1622); Pierre Féret, *Le Cardinal Duperron* (Paris, 1877).

DUPIN, ANDRÉ MARIE JEAN JACQUES (1783-1865), commonly called Dupin the Elder, French advocate, president of the chamber of deputies and of the Legislative Assembly, was born at Varzy, in Nièvre, on the 1st of February 1783. He was educated by his father, who was a lawyer of eminence, and at an early age he became principal clerk of an attorney at Paris. On the establishment of the *Académie de Législation* he entered it as pupil from Nièvre. In 1800 he was made advocate, and in 1802, when the schools of law were opened, he received successively the degrees of licentiate and doctor from the new faculty. He was in 1810 an unsuccessful candidate for the chair of law at Paris, and in 1811 he also failed to obtain the office of advocate-general at the court of cassation. About this time he was added to the commission charged with the classification of the laws of the empire, and, after the interruption caused by the events of 1814 and 1815, was charged with the sole care of that great work. When he entered the chamber of deputies in 1815 he at once took an active part in the debates as a member of the Liberal Opposition, and strenuously opposed the election of the son of Napoleon as emperor after his father's abdication. At the election after the second restoration Dupin was not re-elected. He defended with great intrepidity the principal political victims of the reaction, among others, in conjunction with Nicolas Berryer, Marshal Ney; and in October 1815 boldly published a tractate entitled *Libre Défense des accusés*. In 1827 he was again elected a member of the chamber of deputies and in 1830 he

voted the address of the 221, and on the 28th of February he was in the streets exhorting the citizens to resistance. At the end of 1832 he became president of the chamber, which office he held successively for eight years. On Louis Philippe's abdication in 1848 Dupin introduced the young count of Paris into the chamber, and proposed him as king with the duchess of Orleans as regent. This attempt failed, but Dupin submitted to circumstances, and, retaining the office of *procureur-général*, his first act was to decide that justice should henceforth be rendered to the "name of the French people." In 1849 he was elected a member of the Assembly, and became president of the principal committee—that on legislation. After the *coup d'état* of the 2nd of December 1851 he still retained his office of *procureur-général*, and did not resign it until effect was given to the decrees confiscating the property of the house of Orleans. In 1857 he was offered his old office by the emperor, and accepted it, explaining his acceptance in a discourse, a sentence of which may be employed to describe his whole political career. "I have always," he said, "belonged to France and never to parties." He died on the 8th of November 1865. Among Dupin's works, which are numerous, may be mentioned *Principia Juris Civilis*, 5 vols. (1806); *Mémoires et plaidoyers de 1806 au 1er Janvier 1830*, in 20 vols.; and *Mémoires ou souvenirs du barreau*, in 4 vols. (1855-1857).

His brother, François Pierre Charles Dupin (1784-1873), wrote several geometrical works, treating of descriptive geometry after the manner of Monge, and of the theory of curves.

DU PIN, LOUIS ELLIES (1657-1719), French ecclesiastical historian, came of a noble family of Normandy, and was born at Paris on the 17th of June 1657. When ten years old he entered the college of Harcourt, where he graduated M.A. in 1672. He afterwards became a pupil of the Sorbonne, and received the degree of B.D. in 1680 and that of D.D. in 1684. About this time he conceived the idea of his *Bibliothèque universelle de tous les auteurs ecclésiastiques*, the first volume of which appeared in 1686. The liberty with which he there treated the doctrines of the Fathers aroused ecclesiastical prejudice, and the archbishop of Paris condemned the work. Although Du Pin consented to a retractation, the book was suppressed in 1693; he was, however, allowed again to continue it on changing its title by substituting *nouvelle* for *universelle*. He was subsequently exiled to Châtellerault as a Jansenist, but the sentence of banishment was repealed on a new retractation. In 1718 he entered into a correspondence with William Wake, archbishop of Canterbury, with a view to a union of the English and Gallican churches; being suspected of projecting a change in the dogmas of the church, his papers were seized in February 1719, but nothing incriminating was found. The same zeal for union induced him, during the residence of Peter the Great in France, and at that monarch's request, to draw up a plan for uniting the Greek and Roman churches. He died at Paris on the 6th of June 1719.

Du Pin was a voluminous author. Besides his great work (Paris, 1686-1704, 58 vols. 8vo; Amsterdam, 19 vols. 4to; in the last of which he gives much autobiographical information), mention may be made of *Bibliothèque universelle des historiens* (2 vols., 1707); *L'Histoire de l'église en abrégé* (1712); and *L'Histoire profane depuis le commencement du monde jusqu'à présent* (4 vols., 1712).

DUPLEIX, JOSEPH FRANÇOIS (1697-1763), governor-general of the French establishment in India, the great rival of Clive (*q.v.*), was born at Landrecies, France, on the 1st of January 1697. His father, François Dupleix, a wealthy farmer-general, wished to bring him up as a merchant, and, in order to distract him from his taste for science, sent him on a voyage to India in 1715 on one of the French East India Company's vessels. He made several voyages to America and India, and in 1720 was named a member of the superior council at Pondicherry. He displayed great business aptitude, and, in addition to his official duties, made large ventures on his own account, and acquired a fortune. In 1730 he was made superintendent of French affairs in Chandernagore, the town prospering under his energetic administration and growing into great importance. His reputation procured him in 1742 the

appointment of governor-general of all French establishments in India. His ambition now was to acquire for France vast territories in India; and for this purpose he entered into relations with the native princes, and adopted a style of oriental splendour in his dress and surroundings. The British took the alarm. But the danger to their settlements and power was partly averted by the bitter mutual jealousy which existed between Dupleix and La Bourdonnais, French governor of the isle of Bourbon. When Madras capitulated to the French in 1764, Dupleix opposed the restoration of the town to the British, thus violating the treaty signed by La Bourdonnais. He then sent an expedition against Fort St David (1747), which was defeated on its march by the nawab of Arcot, the ally of the British. Dupleix succeeded in gaining over the nawab, and again attempted the capture of Fort St David, but unsuccessfully. A midnight attack on Cuddalore was repulsed with great loss. In 1748 Pondicherry was besieged by the British; but in the course of the operations news arrived of the peace concluded between the French and the British at Aix-la-Chapelle. Dupleix next entered into negotiations which had for their object the subjugation of southern India, and he sent a large body of troops to the aid of two claimants of the sovereignty of the Carnatic and the Deccan. The British were engaged on the side of their rivals. After temporary successes the scheme failed. Dupleix was a great organizer, but did not possess the genius for command in the field that was shown by Clive. The conflicts between the French and the British in India continued till 1754, when the French government, anxious to make peace, sent out to India a special commissioner with orders to supersede Dupleix and, if necessary, to arrest him. These orders were carried out with needless harshness, what survived of Dupleix's work was ruined at a blow, and he himself was compelled to embark for France on the 12th of October 1754. He had spent his private fortune in the prosecution of his public policy; the company refused to acknowledge the obligation; and the government would do nothing for a man whom they persisted in regarding as an ambitious and greedy adventurer. The greatest of French colonial governors died in obscurity and want on the 10th of November 1763. In 1741 he had married Jeanne Albert, widow of one of the councillors of the company, a woman of strong character and intellect, known to the Hindus as Joanna Begum, who proved of great use to her husband in his negotiations with the native princes. She died in 1756, and two years later he married again.

See Tibulle Hamont, *Dupleix, d'après sa correspondance inédite* (Paris, 1881); H. Castonnet, *Dupleix, ses expéditions et ses projets* (Paris, 1888) and *La Chute de Dupleix* (Angers, 1888); G.B. Malleson, *Dupleix* (Rulers of India series, 1890); and E. Guérin, *Dupleix* (1908).

DUPONT, PIERRE (1821-1870), French song-writer, the son of a blacksmith, was born at Lyons on the 23rd of April 1821. His parents both died before he was five years old, and he was brought up in the country by his godfather, a village priest. He was educated at the seminary of L'Argentière, and was afterwards apprenticed to a notary at Lyons. In 1839 he found his way to Paris, and some of his poems were inserted in the *Gazette de France* and the *Quotidienne*. Two years later he was saved from the conscription and enabled to publish his first volume—*Les Deux Anges*—through the exertions of a kinsman and of Pierre Lebrun. In 1842 he received a prize from the Academy, and worked for some time on the official dictionary. Gounod's appreciation of his peasant song, *J'ai deux grands bœufs dans mon étable* (1846), settled his vocation as a song-writer. He had no theoretical knowledge of music, but he composed both the words and the melodies of his songs, the two processes being generally simultaneous. He himself remained so innocent of musical knowledge that he had to engage Ernest Reyer to write down his airs. He sang his own songs, as they were composed, at the workmen's concerts in the Salle de la Fraternité du Faubourg Saint-Denis; the public performance of his famous *Le Pain* was forbidden; *Le Chant des ouvriers* was even more popular; and in 1851 he paid the penalty of having become the poet laureate of the socialistic aspirations of the time by being condemned to seven years of exile from France. The sentence was cancelled, and the poet withdrew for a time from participation in politics. He died at Lyons, where his later years were spent, on the 24th of July 1870. His songs have appeared in various forms—*Chants et chansons* (3 vols., with music, 1852-1854), *Chants et poésies* (7th edition, 1862), &c. Among the best-known are *Le Braconnier*, *Le Tisserand*, *La Vache blanche*, *La Chanson du blé*, but many others might be mentioned of equal spontaneity and charm. His later works have not the same merit.

See also Sainte-Beuve, *Causeries du lundi*, iv.; Ch. Baudelaire, *Notice sur P. Dupont* (1849); Déchaut, *Biographie de Pierre Dupont* (1871); and Ch. Lenient, *Poésie patriotique en France* (1889), ii. 352 et seq.

DUPONT DE L'ÉTANG, PIERRE ANTOINE, Count (1765-1840), French general, first saw active service as a member of Maillebois' legion in Holland, and in 1791 was on the staff of the Army of the North under Dillon. He distinguished himself at Valmy, and in the fighting around Menin in 1793 he forced an Austrian regiment to surrender. Promoted general of brigade for this feat, he soon received further advancement from Carnot, who recognized his abilities. In 1797 he became general of division. The rise of Napoleon, whom he warmly supported in the *coup d'état* of 18th Brumaire, brought him further opportunities. In the campaign of 1800 he was chief of the staff to Berthier, the nominal commander of the "Army of Reserve of the Alps", which won the battle of Marengo. After the battle he sustained a brilliant combat, against greatly superior forces, at Pozzolo. In the campaign on the Danube in 1805, as the leader of one of Ney's divisions, he earned further distinction, especially at the action of Albeck-Haslach, in which he prevented the escape of the Austrians from Ulm, and so contributed most effectively to the isolation and subsequent capture of Mack and his whole army (see Napoleonic Campaigns). At Friedland he won further fame. With a record such as but few of Napoleon's divisional commanders possessed, he entered Spain in 1808 at the head of a corps. After the occupation of Madrid, Dupont, newly created count by Napoleon, was sent to subdue Andalusia. After a few initial successes he had to retire on the passes of the Sierra Morena. Pursued and cut off by the Spanish army under Castaños, his corps was defeated and he felt himself constrained to capitulate (Baylen, 19th-23rd July; see Peninsular War). The disgrace which fell upon the general was not entirely merited. His troops were for the most part raw levies, and ill-luck contributed materially to the catastrophe, but, after his return to France, Dupont was sent before a court-martial, deprived of his rank and title, and imprisoned from 1812 to 1814. Released only by the fall of Napoleon, he was employed by Louis XVIII. in a military command, which he lost on the return of Napoleon. But the Second Restoration saw him restored to the army, and appointed a member of the *conseil privé* of Louis XVIII. From 1815 to 1830 he was deputy for the Charente. He lived in retirement from 1832 till his death in 1840. Amongst the writings Dupont left are some poems, including *L'Art de la guerre* (1838), and verse translations from Horace (1836), and the following military works: *Opinion sur le nouveau mode de recrutement* (1818), *Lettres sur l'Espagne en 1808* (1823), *Lettre sur la campagne d'Autriche* (1826). At the time of his death he was on the point of publishing his memoirs.

See Lieut.-Col. Titeux, *Le Général Dupont: une erreur historique* (Paris, 1903).

DUPONT DE L'EURE, JACQUES CHARLES (1767-1855), French lawyer and statesman, was born at Neubourg (Eure), in Normandy, on the 27th of February 1767. In 1789 he was an advocate at the parlement of Normandy. During the republic and the empire he filled successively judicial offices at Louviers, Rouen and Evreux. He had adopted the principles of the Revolution, and in 1798 he commenced his political life as a member of the Council of Five Hundred. In 1813 he became a member of the Corps Legislatif. During the Hundred Days he was vice-president of the chamber of deputies, and when the allied armies entered Paris he drew up the declaration in which the chamber asserted the necessity of maintaining the principles of government that had been established at the Revolution. He was chosen one of the commissioners to negotiate with the allied sovereigns. From 1817 till 1849 he was uninterruptedly a member of the chamber of deputies, and he acted consistently with the liberal opposition, of which at more than one crisis he was the virtual leader. For a few months in 1830 he held office as minister of justice, but, finding himself out of harmony with his colleagues, he resigned before the close of the year and resumed his place in the opposition. At the revolution of 1848 Dupont de l'Eure was made president of the provisional assembly as being its oldest member. In the following year, having failed to secure his re-election to the chamber, he retired into private life. He died in 1855. The consistent firmness

with which he adhered to the cause of constitutional liberalism during the many changes of his times gained him the highest respect of his countrymen, by whom he was styled the Aristides of the French tribune.

DU PONT DE NEMOURS, PIERRE SAMUEL (1739-1817), French political economist and statesman, was born at Paris on the 14th of September 1739. He studied for the medical profession, but did not enter upon practice, his attention having been early directed to economic questions through his friendship with François Quesnay, Turgot and other leaders of the school known as the Economists. To this school he rendered valuable service by several pamphlets on financial questions, and numerous articles representing and advocating its views in a popular style in the *Journal de l'agriculture, du commerce, et des finances*, and the *Éphémérides du citoyen*, of which he was successively editor. In 1772 he accepted the office of secretary of the council of public instruction from Stanislas Poniatowski, king of Poland. Two years later he was recalled to France by the advent of his friend Turgot to power. After assisting the minister in his wisely-conceived but unavailing schemes of reform during the brief period of his tenure of office, Du Pont shared his dismissal and retired to Gâtinais, in the neighbourhood of Nemours, where he employed himself in agricultural improvements. During his leisure he wrote a translation of Ariosto (1781), and *Mémoires sur la vie de Turgot* (1782). He was drawn from his retirement by C.G. de Vergennes, minister of foreign affairs, who employed him in 1782 in negotiating, with the English commissioner Dr James Hutton, for recognition of the independence of the United States (1782), and in preparing a treaty of commerce with Great Britain (1786). Under Calonne he became councillor of state, and was appointed commissary-general of commerce.

During the Revolution period he advocated constitutional monarchy, and was returned as deputy by the Third Estate of the *bailliage* of Nemours to the states-general, and then to the Constituent Assembly, of which he was elected president on the 16th of October 1790. But his conservative opinions rendered him more and more unpopular, and after the 10th of August 1792, when he took the side of the king, he was forced to lie concealed for some weeks in the observatory of the Mazarin College, from which he contrived to escape to the country. During the time that elapsed before he was discovered and arrested he wrote his *Philosophie de l'univers*. Imprisoned in La Force (1794), he was one of those who had the good fortune to escape the guillotine till the death of Robespierre set them free. As a member of the Council of Five Hundred, Du Pont carried out his policy of resistance to the Jacobins, and made himself prominent as a member of the reactionary party. After the republican triumph on the 18th Fructidor (4th of September) 1797 his house was sacked by the mob, and he himself only escaped transportation to Cayenne through the influence of M.J. Chénier. In 1799 he found it advisable for his comfort, if not for his safety, to emigrate with his family to the United States. Jefferson's high opinion of Du Pont was shown in using him in 1802 to convey to Bonaparte unofficially a threat against the French occupation of Louisiana; and also, earlier, in requesting him to prepare a scheme of national education, which was published in 1800 under the title *Sur l'éducation nationale dans les États-Unis d'Amérique*. Though the scheme was not carried out in the United States, several of its features have been adopted in the existing French code. On his return to France in 1802 he declined to accept any office under Napoleon, devoted himself almost exclusively to literary pursuits, and was elected to the *Institut*. On the downfall of Napoleon in 1814 Du Pont became secretary to the provisional government, and on the restoration he was made a councillor of state. The return of the emperor in 1815 determined him to quit France, and he spent the close of his life with his younger son, Eleuthère Irénée (1771-1834), who had established a powder manufactory in Delaware. He died at Eleutherian Mills near Wilmington, Delaware, on the 6th of August 1817.

His family continued to conduct the powder-mills, which brought them considerable wealth. The business was subsequently converted into the E.I. Du Pont de Nemours Powder Company. His grandson, Admiral Samuel Francis Du Pont (1803-1865), played a conspicuous part as a U.S. naval officer in the American Civil War. His great-grandson, Henry Algernon Du Pont (b. 1838), president of the Wilmington & Northern railway, was a soldier in the Civil War, and afterwards a United States senator.

Du Pont's most important works, besides those mentioned above, were his *De l'origine et*

des progrès d'une science nouvelle (London and Paris, 1767); *Physiocratie, ou constitution naturelle du gouvernement le plus avantageux au genre humain* (Paris, 1768); and his *Observations sur les effets de la liberté du commerce des grains* (1760). They are gathered together in vol. ii. of the *Collection des économistes* (1846). See notices of his life (1818) by Silvestre and Baron de Gerando; also Schelle, *Du Pont de Nemours et l'école physiocratique* (1888).

DUPORT, ADRIEN (1759-1798), French politician, was born in Paris. He became an influential advocate in the parlement, becoming prominent in opposition to the ministers Calonne and Loménie de Brienne. Elected in 1789 to the states-general by the *noblesse* of Paris, he soon revealed a remarkable eloquence. A learned jurist, he contributed during the Constituent Assembly to the organization of the judiciary of France. His report of the 29th of March 1790 is especially notable. In it he advocated trial by jury; but he was unable to obtain the jury system in civil cases. Duport had formed with Barnave and Alexandre de Lameth a group known as the "triumvirate," which was popular at first. But after the flight of the king to Varennes, Duport sought to defend him; as member of the commission charged to question the king, he tried to excuse him, and on the 14th of July 1791 he opposed the formal accusation. He was thus led to separate himself from the Jacobins and to join the Feuillant party. After the Constituent Assembly he became president of the criminal tribunal of Paris, but was arrested during the insurrection of the 10th of August 1792. He escaped, thanks probably to the complicity of Danton, returned to France after the 9th of Thermidor of the year II., left it in exile again after the republican *coup d'état* of the 18th of Fructidor of the year V., and died at Appenzell in Switzerland in 1798.

See F.A. Aulard, *Les Orateurs de la Constituante* (2nd ed., Paris, 1905, 8vo).

DUPORT, JAMES (1606-1679), English classical scholar, was born at Cambridge. His father, John Duport, who was descended from an old Norman family (the Du Ports of Caen, who settled in Leicestershire during the reign of Henry IV.), was master of Jesus College. The son was educated at Westminster and at Trinity College, where he became fellow and subsequently vicemaster. In 1639 he was appointed regius professor of Greek, in 1664 dean of Peterborough, and in 1668 master of Magdalene College. He died at Peterborough on the 17th of July 1679. Throughout the troublous times of the Civil War, in spite of the loss of his clerical offices and eventually of his professorship, Duport quietly continued his lectures. He is best known by his *Homeri gnomologia* (1660), a collection of all the aphorisms, maxims and remarkable opinions in the *Iliad* and *Odyssey*, illustrated by quotations from the Bible and classical literature. His other published works chiefly consist of translations (from the Bible and Prayer Book into Greek) and short original poems, collected under the title of *Horae subsecivae* or *Stromata*. They include congratulatory odes (inscribed to the king); funeral odes; *carmina comitialia* (tripos verses on different theses maintained in the schools, remarkable for their philosophical and metaphysical knowledge); sacred epigrams; and three books of miscellaneous poems (*Sylvae*). The character of Duport's work is not such as to appeal to modern scholars, but he deserves the credit of having done much to keep alive the study of classical literature in his day.

The chief authority for the life of Duport is J.H. Monk's "Memoir" (1825); see also Sandys, *Hist. Class. Schol.* (1908), ii. 349.

DÜPPEL, a village of Germany, in the Prussian province of Schleswig-Holstein, opposite the town of Sonderburg (on the island of Alsen). (Pop. 600.) The position of Düppel, forming

as it does a bridge-head for the defenders of the island of Alsen, played a conspicuous part in the wars between Denmark and the Germans. On the 28th of May 1848 the German federal troops were there defeated by the Danes under General Hedemann, and a second battle was fought on the 6th of June 1848. On the 13th of April 1849 an indecisive battle was fought between the federal troops under von Prittwitz and the Danes under von Bulow. The most important event in the military history of Düppel was, however, the siege by the Prussians of the Danish position in 1864. The flanks of the defenders' line rested upon the Alsen Sund and the sea, and it was strengthened by ten redoubts. A second line of trenches with lunettes at intervals was constructed behind the front attacked, and a small réduit opposite Sonderburg to cover the bridges between Alsen and the mainland. The Prussian siege corps was commanded by Prince Frederick Charles (headquarters, Düppel village), and after three weeks' skirmishing a regular siege was begun, the batteries being opened on the 15th of March. The first parallel was completed fifteen days later, the front of attack being redoubts II. to VI., forming the centre of the Danish entrenchments on the road Düppel-Sonderburg. The siege was pushed rapidly from the first parallel and the assault delivered on the 18th of April, against the redoubts I. to VI., each redoubt being attacked by a separate column. The whole line was carried after a brief but severe conflict, and the Prussians had penetrated to and captured the réduit opposite Sonderburg by 2 P.M. The loss of the Danes, half of whose forces were not engaged, included 1800 killed and wounded and 3400 prisoners. This operation was followed by the daring passage of the Alsen Sund, effected by the Prussians in boats almost under the guns of the Danish war-ships, and resulting in the capture of the whole island of Alsen (June 29th, 1864). After being still further strengthened and linked with similar defences at Sonderburg, the Düppel entrenchments were abandoned in 1881 in favour of landward fortifications around Kiel.

See R. Neumann, *Über den Angriff der Düppeler Schanzen in der Zeit vom 15. März bis 18. April 1864* (Berlin, 1865); and *Der deutschdänische Krieg 1864*, published by the Prussian General Staff (Berlin, 1887).

DU PRAT, ANTOINE (1463-1535), chancellor of France and cardinal, was born at Issoire on the 17th of January 1463. He began life as a lawyer, and rose rapidly in the legal hierarchy owing to the influence of his cousin Antoine Bohier, cardinal archbishop of Bourges. The first office which he held was that of lieutenant-general in the *bailliage* of Montferrand; in 1507 he became first president of the parlement of Paris. Louise of Savoy had employed him as her adviser in her affairs, and had made him tutor to her son. When Francis I. ascended the throne he made Du Prat chancellor of France, in which capacity he played an important part in the government. It was he who negotiated with Leo X. concerning the abolition of the Pragmatic Sanction and the establishment of a concordat. After the meeting of the Field of the Cloth of Gold (1520) he was engaged in unsuccessful negotiations with Wolsey. During the regency of Louise of Savoy he, together with Florimond Robertet, was at the head of affairs. He took an active part in the suit brought by Louise of Savoy against the Constable de Bourbon, and in 1532 completed the work of uniting Brittany to France. After the death of his wife in 1507 Du Prat had taken orders; he received the bishoprics of Valence, Die, Meaux and Albi, and the archbishopric of Sens (1525); in 1527 he became cardinal, and in 1530 papal legate. He was a determined adversary of the Reformation. He died on the 9th of July 1535.

See the marquis Du Prat, *Vie d'Antoine Du Prat* (Paris, 1857).

DUPRÉ, JULES (1812-1889), French painter, was one of the chief members of the Barbizon group of romantic landscape painters. If Corot stands for the lyric and Rousseau for the epic aspect of the poetry of nature, Dupré is the exponent of her tragic and dramatic aspects. He was the son of a porcelain manufacturer, and started his career in his father's works, whence he went to his uncle's china factory at Sèvres. After studying for some time under Diébold, a painter of clock faces, he had to pass through a short period of privation,

until he attracted the attention of a wealthy patron, who came to his studio and bought all the studies on the walls at the price demanded by the artist—20 francs apiece. Dupré exhibited first at the Salon in 1831, and three years later was awarded a second-class medal. In the same year he came to England, where he was deeply impressed by the genius of Constable. From him he learnt how to express movement in nature; and the district of Southampton and Plymouth, with its wide, unbroken expanses of water, sky and ground, gave him good opportunities for studying the tempestuous motion of storm-clouds and the movement of foliage driven by the wind. He received the cross of the Legion of Honour in 1848. Dupré's colour is sonorous and resonant; the subjects for which he showed marked preference are dramatic sunset effects and stormy skies and seas. Late in life he changed his style and gained appreciably in largeness of handling and arrived at greater simplicity in his colour harmonies. Among his chief works are the "Morning" and "Evening" at the Louvre, and the early "Crossing the Bridge" in the Wallace Collection.

DUPUIS, CHARLES FRANÇOIS (1742-1809), French scientific writer and politician, was born of poor parents at Trye-Château, between Gisors and Chaumont, on the 26th of October 1742. His father, who was a teacher, instructed him in mathematics and land-surveying. While he was engaged in measuring a tower by a geometrical method, the duc de la Rochefoucauld met him and was so taken by the lad's intelligence that he gave him a bursary in the college of Harcourt. Dupuis made such rapid progress that, at the age of twenty-four, he was appointed professor of rhetoric at the college of Lisieux, where he had previously passed as a licentiate of theology. In his hours of leisure he studied law, and in 1770 he abandoned the clerical career and became an advocate. Two university discourses which he delivered in Latin were printed, and laid the foundation of his literary fame. His chief attention, however, was devoted to mathematics, the object of his early studies; and for some years he attended the astronomical lectures of Lalande, with whom he formed an intimate friendship. In 1778 he constructed a telegraph on the principle suggested by Guillaume Amontons (*q.v.*), and employed it in keeping up a correspondence with his friend Jean Fortin in the neighbouring village of Bagneux, until the Revolution made it necessary to destroy his machine to avoid suspicion. About the same time Dupuis formed his theory as to the origin of the Greek months. He endeavoured to account for the want of any resemblance between the groups of stars and the names by which they are known, by supposing that the zodiac was, for the people who invented it, a sort of calendar at once astronomical and rural, and that the figures chosen for the constellations were such as would naturally suggest the agricultural operations of the season. It seemed only necessary, therefore, to discover the clime and the period in which the constellation of Capricorn must have arisen with the sun on the day of the summer solstice, and the vernal equinox must have occurred under Libra. It appeared to Dupuis that this clime was Upper Egypt, and that the perfect correspondence between the signs and their significations had existed in that country at a period of between fifteen and sixteen thousand years before the present time; that it had existed only there; and that this harmony had been disturbed by the effect of the precession of the equinoxes. He therefore ascribed the invention of the signs of the zodiac to the people who then inhabited Upper Egypt or Ethiopia. This was the basis on which Dupuis established his mythological system, and endeavoured to explain fabulous history and the whole system of the theogony and theology of the ancients. Dupuis published several detached parts of his system in the *Journal des savants* for 1777 and 1781. These he afterwards collected and published, first in Lalande's *Astronomy*, and then in a separate volume in 4to, 1781, under the title of *Mémoire sur l'origine des constellations et sur l'explication de la fable par l'astronomie*. The theory propounded in this memoir was refuted by J.S. Bailly in his *Histoire de l'astronomie*, but, at the same time, with a just acknowledgment of the erudition and ingenuity exhibited by the author.

Condorcet proposed Dupuis to Frederick the Great of Prussia as a fit person to succeed Thiébault in the professorship of literature at Berlin; and Dupuis had accepted the invitation, when the death of the king cancelled the engagement. The chair of humanity in the College of France having at the same time become vacant, it was conferred on Dupuis; and in 1788 he became a member of the Academy of Inscriptions. He now resigned his professorship at Lisieux, and was appointed by the administrators of the department of Paris one of the four commissioners of public instruction. At the outbreak of the Revolutionary troubles Dupuis sought safety at Évreux; and, having been chosen a member of the National Convention by

the department of Seine-et-Oise, he distinguished himself by his moderation. In the third year of the republic he was elected secretary to the Assembly, and in the fourth he was chosen a member of the Council of Five Hundred. After Bonaparte's *coup d'état* of the 18th Brumaire he was elected by the department of Seine-et-Oise a member of the Legislative Body, of which he became the president. He was proposed as a candidate for the senate, but resolved to abandon politics, devoting himself during the rest of his life to his favourite studies.

In 1795 he published the work by which he is best known, entitled *Origine de tous les cultes, ou la religion universelle* (3 vols. 4to, with an atlas, or 12 vols. 12mo). This work, of which an edition revised by P.R. Auguis was published in 1822 (10th ed., 1835-1836), became the subject of much bitter controversy, and the theory it propounded as to the origin of mythology in Upper Egypt led to the expedition organized by Napoleon for the exploration of that country. In 1798 Dupuis published an abridgment of his work in one volume 8vo, which met with no better success than the original. Another abridgment of the same work, executed upon a much more methodical plan, was published by M. de Tracy. The other works of Dupuis consist of two memoirs on the Pelasgi, inserted in the *Memoirs of the Institute*; a memoir "On the Zodiac of Tentyra," published in the *Revue philosophique* for May 1806; and a *Mémoire explicatif du zodiaque chronologique et mythologique*, published the same year, in one volume 4to. He died on the 29th of September 1809.

DUPUY, CHARLES ALEXANDRE (1851-), French statesman, was born at Le Puy on the 5th of November 1851, his father being a local official. After being a professor of philosophy in the provinces, he was appointed a school inspector, and thus obtained a practical acquaintance with the needs of French education. In 1885 he was elected to the chamber as an Opportunist Republican. After acting as "reporter" of the budget for public instruction, he became minister for the department, in M. Ribot's cabinet, in 1892. In April 1893 he formed a ministry himself, taking as his office that of minister of the interior, but resigned at the end of November, and on 5th December was elected president of the chamber. During his first week of office an anarchist, Vaillant, who had managed to gain admission to the chamber, threw a bomb at the president, and M. Dupuy's collected bearing, and his historic words: "Messieurs, la séance continue," gained him much credit. In May 1894 he again became premier and minister of the interior; and he was by President Carnot's side when the latter was stabbed to death at Lyons in June. He then became a candidate for the presidency, but was defeated, and his cabinet remained in office till January 1895; it was under it that Captain Dreyfus was arrested and condemned (23rd of December 1894). The progress of *l'affaire* then cast its shadow upon M. Dupuy, along with other French "ministrables," but in November 1898, after M. Brisson had at last remitted the case to the judgment of the court of cassation, he formed a cabinet of Republican concentration. In view of the apparent likelihood that the judges of the criminal division of the court of cassation—who formed the ordinary tribunal for such an appeal—would decide in favour of Dreyfus, it was thought that M. Dupuy's new cabinet would be strong enough to reconcile public opinion to such a result; but, to the surprise of outside observers, it was no sooner discovered how the judges were likely to decide than M. Dupuy proposed a law in the chamber transferring the decision to a full court of all the divisions of the court of cassation. This arbitrary act, though adopted by the chamber, was at once construed as a fresh attempt to maintain the judgment of the first court-martial; but in the interval President Faure (an anti-Dreyfusard) died, and the accession of M. Loubet doubtless had some effect in quieting public feeling. At all events, the whole court of cassation decided that there must be a new court-martial, and M. Dupuy at once resigned (June 1899). In June 1900 he was elected senator for the Haute Saône.

DUPUY, PIERRE (1582-1651), French scholar, otherwise known as PUTEANUS, was born at Agen (Lot-et-Garonne) on the 27th of November 1582. In 1615 he was commissioned by Mathieu Molé, first president of the parlement of Paris, to draw up an inventory of the

documents which constituted what at that time was known as the *Trésor des chartes*. This work occupied eleven years. His MS. inventory is preserved in the original and in copy in the Bibliothèque Nationale, and transcriptions are in the national archives in Paris, at the record office in London, and elsewhere. Dupuy's classification is still regarded with respect, but the inventory has been partially replaced by the publication of the *Layettes du trésor* (four volumes, coming down to 1270; 1863-1902). Dupuy also published, with his brother Jacques, and their friend Nicolas Rigault, the *History* of Aug. de Thou (1620, 1626). The two brothers then bought from Rigault the post of keeper of the king's library, and drew up a catalogue of the library (Nos. 9352-9354 and 10366-10367 of the Latin collection in the Bibliothèque Nationale). In the course of this work, Dupuy became acquainted with and copied an enormous mass of unpublished documents, which furnished him with the material for some excellent works: *Traité des droits et des libertés de l'église gallicane, avec les preuves* (1639), *Histoire de l'ordre militaire des Templiers* (1654), *Histoire générale du schisme qui a été dans l'église depuis 1378 jusqu'à 1428* (1654), and *Histoire du différend entre le pape Boniface VIII et le roi Philippe le Bel* (1655). These works, especially the last, are important contributions to the history of the relations of church and state in the middle ages. They were written from the Gallican standpoint, *i.e.* in favour of the rights of the crown in temporal and political matters, and this explains the delay in their publication until after Dupuy's death. He wrote also *Traité des régences et des majorités des rois de France* (1655) and *Recueil des droits du roi* (1658). Dupuy's papers, preserved in the Bibliothèque Nationale, were inventoried by Léon Dorez (*Catalogue de la collection Dupuy*, 1899). See also L. Delisle's *Le Cabinet des manuscrits de la bibliothèque impériale*. Dupuy died in Paris on the 14th of December 1651.

DUPUY DE LÔME, STANISLAS CHARLES HENRI LAURENT (1816-1885), French naval architect, the son of a retired naval officer, was born at Ploemeur, near Lorient, on the 15th of October 1816. He entered the École Polytechnique in 1835, and in 1842 was sent to England to study and report on iron shipbuilding. Acting on his report, which was published in 1844, the government built their first iron vessels under his supervision. He planned and built the steam line-of-battle ship "Napoleon" (1848-1852), and devised the method of altering sailing ships of the line into steamers, which was afterwards extensively practised in both France and England. He also showed the practicability of armouring the sides of a ship, and the frigate "Gloire" gave a very clear demonstration of his views. It was the beginning of the great change in the construction of ships of war which has been going on ever since. In 1857 Dupuy de Lôme was appointed "chef de la direction du matériel," at Paris; and in 1861, "inspecteur général du matériel de la marine." In 1866 he was elected a member of the Academy of Sciences. At the beginning of the Franco-German War he was appointed a member of the committee of defence, and during the siege of Paris occupied himself with planning a steerable balloon, for carrying out which he was given a credit of 40,000 fr.; but the balloon was not ready till a few days before the capitulation. The experiments that were afterwards made with it did not prove entirely satisfactory. In 1875 he was busy over a scheme for embarking a railway train at Calais, and exhibited plans of the improved harbour and models of the "bateaux porte-trains" to the Academy of Sciences in July. In 1877 he was elected a senator for life. He received the cross of the Legion of Honour in 1845, was made a commander in 1858, and grand officer in December 1863. He died at Paris on the 1st of February 1885.

DUPUYTREN, GUILLAUME, Baron (1777-1835), French anatomist and surgeon, was born on the 6th of October 1777 at Pierre Buffière (Haute Vienne). He studied medicine in Paris at the newly established École de Médecine, and was appointed by competition prosector when only eighteen years of age. His early studies were directed chiefly to morbid anatomy. In 1803 he was appointed assistant-surgeon at the Hôtel-Dieu, and in 1811 professor of operative surgery in succession to R.B. Sabatier (1732-1811). In 1815 he was appointed to the chair of clinical surgery, and became head surgeon at the Hôtel-Dieu.

Dupuytren's energy and industry were alike remarkable. He visited the Hôtel-Dieu morning and evening, performing at each time several operations, lectured to vast throngs of students, gave advice to his outdoor patients, and fulfilled the duties consequent upon one of the largest practices of modern times. By his indefatigable activity he amassed a fortune of £300,000, the bulk of which he bequeathed to his daughter, with the deduction of considerable sums for the endowment of the anatomical chair in the École de Médecine, and the establishment of a benevolent institution for distressed medical men. The most important of Dupuytren's writings is his *Treatise on Artificial Anus*, in which he applied the principles laid down by John Hunter. In his operations he was remarkable for his skill and dexterity, and for his great readiness of resource. He died in Paris on the 8th of February 1835.

DUQUE DE ESTRADA, DIEGO (1589-?), Spanish memoir writer, soldier and adventurer, son of Juan Duque de Estrada, also a soldier of rank, was born at Toledo on the 15th of August 1589. Having been left an orphan when very young, he was educated by a cousin. While still young he was betrothed to his cousin's daughter. One night he found an intruder in the house, a gentleman with whom he was acquainted, and in a fit of jealousy killed both him and the young lady. The prevailing code of honour was considered a sufficient justification for Duque de Estrada's violence, but the law looked upon the act as a vulgar assassination, and he had to flee. After leading a vagabond life in the south of Spain, he was arrested at Ecija, was brought to Toledo, and was there put to the torture with extreme ferocity, in order to extort a general confession as to his life during the past months. He had the strength not to yield to pain, and was finally able to escape from prison, partly by the help of a nun in a religious house which faced the prison, and partly by the intervention of friends. He made his way to Naples, where he entered the service of the duke of Osuna (*q.v.*), at that time viceroy. Duque de Estrada saw a good deal of fighting both with the Turks and the Venetians; but he is mainly interesting because he was employed by the viceroy in the conspiracy against Venice. He was one of the disguised Spanish soldiers who were sent into the town to destroy the arsenal, and who were warned in time that the conspiracy had been betrayed, and therefore escaped. After the fall of his patron, Duque de Estrada resumed his vagabond life, served under Bethlen Gabor in Transylvania, and in the Thirty Years' War. In 1633 he entered the order of San Juan de Dios, and died at some time after 1637 in Sardinia, where he is known to have taken part in the defence of the island against an attack by the French. He left a book of memoirs, entitled *Comentarios de el desengeñado de si Mismo prueba de todos estados, y eleccion del Mejor de ellos*—"The Commentaries of one who knew his own little worth, the touchtstone of all the state of man, and the choice of the best." They were written at different times, and part has been lost. The style is incorrect, and it would be unsafe to trust them in every detail, but they are amazingly vivid, and contain a wonderful picture of the moral and intellectual state of a large part of Spanish society at the time.

The memoirs have been reprinted by Don Pascual de Gayangos in the *Memorial histórico español*, vol. xii. (Madrid, 1860).

DUQUESNE, ARRAHAM, MARQUIS (1610-1688), French naval officer, was born at Dieppe in 1610. Born in a stirring seaport, the son of a distinguished naval officer, he naturally adopted the profession of a sailor. He spent his youth in the merchant service, and obtained his first distinction in naval warfare by the capture of the island of Lerins from the Spaniards in May 1637. About the same time his father was killed in an engagement with the Spaniards, and the news raised his hatred of the national enemy to the pitch of a personal and bitter animosity. For the next five years he sought every opportunity of inflicting defeat and humiliation on the Spanish navy, and he distinguished himself by his bravery in the engagement at Guetaria (1638), the expedition to Corunna (1639), and in battles at Tarragona (1641), Barcelona (1643), and the Cabo de Gata. The French navy being left unemployed during the minority of Louis XIV., Duquesne obtained leave to offer his services

to the king of Sweden, who gave him a commission as vice-admiral in 1643. In this capacity he defeated the Danish fleet near Gothenburg and thus raised the siege of the city. The Danes returned to the struggle with increased forces under the command of King Christian in person, but they were again defeated—their admiral being killed and his ship taken. Peace having been concluded between Sweden and Denmark in 1645, Duquesne returned to France. The revolt at Bordeaux, supported as it was by material aid from Spain, gave him the opportunity of at once serving his country and gratifying his long-cherished hatred of the Spaniards. In 1650 he fitted out at his own expense a squadron with which he blockaded the mouth of the Gironde, and compelled the city to surrender. For this service he was promoted in rank, and received a gift of the castle and isle of Indre, near Nantes. Peace with Spain was concluded in 1659, and for some years afterwards Duquesne was occupied in endeavours to suppress piracy in the Mediterranean. On the revolt of Messina from Spain, he was sent to support the insurgents, and had to encounter the united fleets of Spain and Holland under the command of the celebrated Admiral de Ruyter. After several battles, in which the advantage was generally on the side of the French, a decisive engagement took place near Catania, on the 20th of April 1676, when the Dutch fleet was totally routed and de Ruyter mortally wounded. The greater part of the defeated fleet was afterwards burned in the harbour of Palermo, where it had taken refuge, and the French thus secured the undisputed command of the Mediterranean. For this important service Duquesne received a letter of thanks from Louis XIV., together with the title of marquis and the estate of Bouchet. His last achievements were the bombardment of Algiers (1682-1683), in order to effect the deliverance of the Christian captives, and the bombardment of Genoa in 1684. He retired from service in 1684, on the ground of age and ill-health. It is probable also that he foresaw the revocation of the edict of Nantes, which took place in the following year. He died in Paris on the 2nd of February 1688.

See Jal, *Abraham Duquesne, et la marine de son temps* (1873).

DUQUESNE, a borough of Allegheny county, Pennsylvania, U.S.A., on the Monongahela river, about 12 m. S.E. of Pittsburg. Pop. (1900) 9036, of whom 3451 were foreign-born; (1910 census) 15,727. It is served by the Pennsylvania railway. Its most prominent buildings are the Carnegie free library and club (opened in 1904 and containing 17,500 volumes in 1908), and the city hall. A short distance N. of the borough limits Kennywood Park, with a large auditorium and pavilion, is an attractive resort. By far the most important industry of the borough is the manufacture of steel. The value of the borough’s factory products increased from $20,333,476 in 1900 to $28,494,303 in 1905, or 40.1%. The municipality owns and operates its water-works. Duquesne was settled in 1885 and was incorporated in 1891.

DURAMEN (a rare Latin word, meaning hardness, from *durus*, hard), a botanical term for the inner, harder wood of a tree, the heart-wood.

DURAN, a Jewish Provençal family of rabbis and scholars, of whom the following are the most important.

1. Profiaṭ Duran, called also Ephodi. He was in 1391 compelled to profess Christianity, but remained devoted to Judaism. His chief works were grammatical and philosophical. In the former realm his most important contribution was the *Ma’aseh ‘Ephod* (completed in 1403); in the latter, his commentary to the *Guide of the Perplexed* by Maimonides (*q.v.*).

2. Simon Ben Ẓemaḥ Duran (1361-1441), rabbi of Algiers. He was one of the first of the medieval rabbis to be a salaried official of the synagogue. Before the 14th century the rabbinical post had been almost invariably honorary, and filled by men who derived their income from a profession, especially medicine. Duran wrote a systematic work on theology, *Magen ʻAboth*, but is chiefly famous for his numerous *Responsa* (known as *Tashbaz*) published in three vols. in 1738-1739. These *Responsa*, "Answers to questions sent from many lands," give valuable information as to social and religious conditions in the earlier part of the 15th century.

(I. A.)

DURÁN, AGUSTÍN (1789-1862), Spanish scholar, was born in 1789 at Madrid, where his father was court physician. He was sent to the seminary at Vergara, whence he returned learned in the traditions of Spanish romance. In 1817 he began the study of philosophy and law at the university of Seville, and in due course was admitted to the bar at Valladolid. From 1821 to 1823 he held a post in the education department at Madrid, but in the latter year he was suspended on account of his political opinions. In 1834 he became secretary of the board for the censorship of the press, and shortly afterwards obtained a post in the national library at Madrid. The revolution of 1840 led to his dismissal; but he was reinstated in 1843, and in 1854 was appointed chief librarian. Next year, however, he retired to devote himself to his literary work. In 1828, shortly after his first discharge from office, he published anonymously his *Discurso sobre el influjo que ha tenido la crítica moderna en la decadencia del teatro antiguo*; this treatise greatly influenced the younger dramatists of the day. He next endeavoured to interest his fellow-countrymen in their ancient, neglected ballads, and in the forgotten dramas of the 17th century. Five volumes of a *Romancero general* appeared from 1828 to 1832 (republished, with considerable additions, in 2 vols. 1849-1851), and *Talia española* (1834), a reprint of old Spanish comedies. Durán's *Romancero general* is the fullest collection of the kind and is therefore unlikely to be superseded, though the texts are inferior to those edited by Menendez y Pelayo.

DURANCE (anc. *Druentia*), one of the principal rivers descending from the French slope of the Alps towards the Mediterranean. Its total length from its source to its junction with the Rhone (of which it is one of the principal affluents), a little below Avignon, is 217½ m. For the greater part of its course it flows in a south-westerly direction, but near Pertuis gradually bends N.W. and thenceforth preserves this direction. It passes through the departments of Hautes-Alpes, of Basses-Alpes, and between those of Vaucluse and Bouches-du-Rhône. It is commonly said to take its origin in some small lakes a little south of the summit plateau of the Mont Genèvre Pass. But really this stream is surpassed both in volume and length of course by two others which it joins beneath Briançon:—the Clairée, flowing in from the north, through the smiling Névache glen, at the head of which, not far from the foot of the Mont Thabor (10,440 ft.), it rises in some small lakes, on the east side of the Col des Rochilles; and the Guisane (flowing in from the north-west and rising near the Col du Lautaret, 6808 ft.). The united stream soon receives its first affluent, the Cerveyrette (left), and, after having passed through some fine deep-cut gorges, the Gyronde (right). It then runs through a stony plain, where it frequently overflows and causes great damage, this being indeed the main characteristic of the Durance throughout its course. At the foot of the fortress of Mont Dauphin it receives (left) the Guil, which flows through the Queyras valley from near the foot of Monte Viso. Some way beyond it passes beneath Embrun, the first important town on its banks. It soon becomes the boundary for a while between the departments of the Hautes-Alpes and of the Basses-Alpes, and receives successively the considerable Ubaye river, flowing from near the foot of Monte Viso past Barcelonnette (left), and then the small stream of the Luye (right), on which, a few miles above, is Gap. It enters the Basses-Alpes shortly before reaching Sisteron, where it is joined (right) by the wild torrent of the Buëch, flowing from the desolate region of the Dévoluy, and receives the Bléone (left) (on which Digne, the capital of the department, is situated) and the Asse (left),

before quitting the department of the Basses-Alpes just as it is reinforced (left) by the Verdon, flowing from the lower summits of the Maritime Alps past Castellane. After passing through some narrow gorges near Sisteron the bed of the river becomes wide, and spreads desolation around, the frequent overflows being kept within bounds by numerous dykes and embankments. These features are especially marked when the river, after leaving the Basses-Alpes, soon bends N.W. and, always serving as the boundary between the departments of Vaucluse (N.) and of the Bouches-du-Rhône (S.), passes Cavaillon before it effects its junction with the Rhône. The drainage area of the Durance is about 5166 sq. m., while the height it descends is 6550 ft., if reckoned from the lakes on the Mont Genèvre, or 7850 ft. if we take those at the head of the Névache valley as the true source of the river.

(W. A. B. C.)

DURAND, ASHER BROWN (1796-1886), American painter and engraver, was born at South Orange, New Jersey, on the 21st of August 1796. He worked with his father, a watchmaker; was apprenticed in 1812 to an engraver named Peter Maverick; and his first work, the head of an old beggar after Waldo, attracted the attention of the artist Trumbull. Durand established his reputation by his engraving of Trumbull's "Declaration of Independence." After 1835, however, he devoted himself chiefly to portrait painting. He painted several of the presidents of the United States and many other men of political and social prominence. In 1840 he visited Europe, where he studied the work of the old masters; after his return he devoted himself almost entirely to landscape. He died at South Orange on the 17th of September 1886. He had been one of the founders of the National Academy of Design in 1826, and was its president in 1845-1861. Durand may be called the father of the Hudson River School. Although there was something hard and unsympathetic about his landscapes, and unnecessary details and trivialities were over-prominent, he was a well-trained craftsman, and his work is marked by sincerity.

DURAND, GUILLAUME (Guillelmus Durandus), also known as Duranti or Durantis, from the Italian form of *Durandi filius*, as he sometimes signed himself (*c.* 1230-1296), French canonist and liturgical writer, and bishop of Mende, was born at Puimisson, near Beziers, of a noble family of Languedoc. He studied law at Bologna, especially with Bernardus of Parma, and about 1264 was teaching canon law with success at Modena. Clement IV., his fellow-countryman, called him to the pontifical court as a chaplain and auditor of the palace, and in 1274 he accompanied Clement's successor Gregory X. to the council of Lyons, the constitutions of which he drew up, along with some other prelates. As spiritual and temporal legate of the patrimony of St Peter, he received in 1278, in the name of the pope, the homage of Bologna and of the other cities of Romagna. Martin IV. made him vicar spiritual in 1281, then governor of Romagna and of the March of Ancona (1283). In the midst of the struggles between Guelfs and Ghibellines, Durandus successfully defended the papal territories, both by diplomacy and by arms. Honorius IV. retained him in his offices, and although elected bishop of Mende in 1286, he remained in Italy until 1291. In 1295 he refused the archbishopric of Ravenna, offered him by Boniface VIII., but accepted the task of pacifying again his former provinces of Romagna and the March of Ancona. In 1296 he withdrew to Rome, where he died on the 1st of November.

Durandus' principal work is the *Speculum judiciale*, which was drawn up in 1271, and revised in 1286 and 1291. It is a general explanation of civil, criminal and canonical procedure, and also includes a survey of the subject of contracts. It is a remarkable synthesis of Roman and ecclesiastical law, distinguished by its clarity, its method, and especially its practical sense, in a field in which it was pioneer, and its repute was as great and lasting in the courts as in the schools. It won for Durandus the name of "The Speculator." It was commented upon by Giovanni Andrea (in 1346), and by Baldus, and in 1306 Cardinal Béranger drew up an alphabetical table of its contents (*Inventorium*). There are many manuscripts of the *Speculum*, and several editions, of which the most usual is that of Turin in 1578 in 2 volumes, containing all additions and tables. This edition was

reproduced at Frankfort in 1612 and 1668. The next important work of Durandus is the *Rationale divinorum officiorum*, a liturgical treatise written in Italy before 1286, on the origin and symbolic sense of the Christian ritual. It presents a picture of the liturgy of the 13th century in the West, studied in its various forms, its traditional sources, and its relation to the church buildings and furniture. With Martène's *De antiquis Ecclesiae ritibus* it is the main authority on Western liturgies. It has run through various editions, from its first publication in 1459 to the last edition at Naples, 1866. The other important works of Durandus comprise a *Repertorium juris canonici* (*Breviarium aureum*), a collection of citations from canonists on questions of controversy—often published along with the *Speculum*; a *Commentarius in sacrosanctum Lugdunense concilium* (ed. Fano, 1569), of especial value owing to the share of Durandus in the elaboration of the constitutions of this council (1274), and inserted by Boniface VIII. in the *Sextus*.

A nephew of "The Speculator," also named Guillaume Durand (d. 1330), and also a canonist, was rector of the university of Toulouse and succeeded his uncle as bishop of Mende. He wrote in 1311, in connexion with the council of Vienne, *De modo celebrandi concilii et corruptelis in Ecclesia reformandis*. It attacks the abuses of the Church with extreme sincerity and vigour.

On the elder Durand see V. Leclerc in *Histoire littéraire de la France*, vol. xx. pp. 411-497 (1842); Schulte, *Geschichte der Quellen des canonischen Rechts* (1877); E. Male, *L'Art religieux au XIII^e siècle en France* (1898). On the nephew see B. Hauréau, in *Journal des savants* (1892), 64.

DURAND, GUILLAUME (d. 1334), French scholastic theologian, known also by the Latin form of his name as Durandus of St Pourçain (*de Sancto Porciano*), and as *Doctor Resolutissimus*, was born at St Pourçain-sur-Sioule in the Bourbonnois. He entered the Dominican order at Clermont, and in 1313 was made a doctor in Paris, where he taught till Pope John XXII. called him to Avignon as master of the sacred palace, *i.e.* theological adviser and preacher to the pope. He subsequently became bishop of Limoux (1317), of Le Puy (1318) and of Meaux (1326). He composed a commentary on the Sentences of Peter Lombard, in which, breaking with the realism of St Thomas Aquinas, he anticipated the *terminism* of William of Occam, and gave up the attempt to show that dogmas can be demonstrated by reason. In the question of the beatific vision, arising out of opinions promulgated by John XXII. (*q.v.*), he sided with Thomas Walleis, Armand de Bellovisu and the doctors of the faculty of theology in Paris against the pope, and composed his *De statu animarum post separationem a corpore*. Mention should also be made of his *De origine jurisdictionum quibus populus regitur, sive de jurisdictione ecclesiastica et de legibus*.

See B. Hauréau, *Histoire de la philosophie scolastique* (2nd ed., Paris, 1872); C. Werner, *Die Scholastik des spateren Mittelalters*, vol. ii. (Vienna, 1883); H.S. Denifle, in *Archiv f. Litteratur und Kirchengeschichte*, ii. (1886); U. Chevalier, *Rép. des sources hist. du moyen âge*, *s.v.* Durand de St Pourçain.

DURANDO, GIACOMO (1807-1894), Italian general and statesman, was born at Mondovì in Piedmont. He was implicated in the revolutionary movements of 1831 and 1832, after which he was obliged to take refuge abroad. He served in the Belgian army, taking part in the war of 1832, and fought in Portugal in 1833. The following year he entered the service of Spain, when he fought in various campaigns, and was promoted colonel in 1838. After a short stay in France he returned to Italy and identified himself with the Liberal movement; he became an active journalist, and founded a newspaper called *L'Opinione* in 1847. In 1848 he was one of those who asked King Charles Albert for the constitution. On the outbreak of the war with Austria he took command of the Lombard volunteers as major-general, and in the campaign of 1849 he was aide-de-camp to the king. He was elected member of the first Piedmontese parliament and was a strenuous supporter of Cavour; during the Crimean campaign he took General La Marmora's place as war minister. In 1855 he was nominated

senator, lieutenant-general in 1856, ambassador at Constantinople in 1859, and minister for foreign affairs in the Rattazzi cabinet two years later. He was president of the senate from 1884 to 1887, after which year he retired from the army. He died in 1894.

His brother, Giovanni Durando (1804-1869), was in early life driven into exile on account of his Liberal opinions. He served in the armies of Belgium, Portugal and Spain, distinguishing himself in many engagements. Returning to Italy on the outbreak of the revolution of 1848, he was appointed commander of a division of the pontifical forces, and fought against the Austrians in Venetia until the fall of Vicenza, when he returned to Piedmont as major-general. In the campaign of 1849 he commanded the first Piedmontese division; he subsequently served in the Crimea, in the war of 1859, and in that of 1866 as commander of the I. Army Corps. In 1867 he was appointed president of the supreme military and naval tribunal.

DURANGO, a state of northern Mexico, bounded N. by Chihuahua, E. and S.E. by Coahuila, S. by Zacatecas and the territory of Tepic, and W. by Sinaloa. Pop. (1895) 292,549; (1900) 370,294. Area 38,009 sq. m. Durango is a continuation southward of the high, semi-arid plateau of Chihuahua, with the Sierra Madre extending along its western side. The Bolsón de Mapimí covers its N.E. angle, and in the S. there are peculiar volcanic hills, covering about 1000 sq. m. and known as La Breña. The Bolsón de Mapimí, previous to the building of the Mexican Central railway across it, had been considered an uninhabitable desert, but irrigation experiments have demonstrated that its soil is highly fertile and well adapted to the production of cotton and fruit. The rainfall is very light in the eastern part of the state, a succession of years sometimes passing without any precipitation whatever, but in the W. it is sufficient to produce good pasturage and considerable areas of forest. There are no rivers of any magnitude in the state. The largest is the Rio Nazas, which flows eastward into the lakes of the Mapimí depression, and the Mezquital, which flows S.W. through the sierras to the Pacific coast. The climate is generally dry and healthful. Cotton is produced to a limited extent, especially where irrigation is employed, and wheat, Indian corn, tobacco, sugar-cane and grapes are also grown. In the elevated valleys of the sierras stock-raising is successful. The principal industry of Durango, however, is mining, and some of the richest and best known mines of Mexico are found in the state. Besides silver, which has been extensively mined since the first arrival of the Spanish under Francisco de Ibarra (1554-1562), gold, copper, iron, cinnabar, tin, coal and rubies are found. The famous Cerro del Mercado, 2 m. from the city of Durango, is a hill composed in great part of remarkably pure iron ore, and is estimated to contain 300,000,000 tons of that metal. Near it are iron and steel works. The principal mining districts of Durango include San Dimas (on the western slope of the main sierra), Guarisamey, Buenavista, Gavilanes, Guanaceví, Mapimí, El Oro and Indé. In the first-named is the celebrated Candelaria mine, where the ores (largely argentite) assay between $70 and $140 a ton, the aggregate output being estimated as over $100,000,000 before the close of the 19th century. With the exception of silver, the mineral resources of the state have been but slightly developed because of difficult and expensive transportation. The Mexican Central railway crosses the eastern side of the state, and the Mexican International crosses N.E. to S.W. through the state capital on its way to the port of Mazatlán. The history of Durango is similar to that of Chihuahua, the state originally forming part of the province of Nueva Viscaya. The capital is Durango, and among the principal towns are Guanaceví (pop. 6859), El Oro, Nombre de Dios (the first Spanish settlement in the state), San Juan de Guadalupe, San Dimas and Villa Lerdo. These are comparatively small mining towns. Mapimí lies 130 m. N.N.E. of Durango and gives its name to the great arid depression situated still farther north.

DURANGO, sometimes called Ciudad de Victoria, a city of Mexico, capital of the state of Durango, 574 m. N.W. of the federal capital, in lat. 24° 25′ N., long. 105° 55′ W. Pop. (1900) 31,092. Durango is served by the Mexican International railway. The city stands in the picturesque Guadiana valley formed by easterly spurs of the Sierra Madre, about 6850 ft.

above the sea. It has a mild, healthy climate, and is surrounded by a district of considerable fertility. Durango is an important mining and commercial centre, and was for a time one of the most influential towns of northern Mexico. It is the seat of a bishop, and has a handsome cathedral, ten parish churches, a national institute or college, an episcopal seminary, government buildings, a public library, hospital, penitentiary and bull-ring. The city is provided with urban and suburban tramways, electric light, telephone service and an abundant water-supply, and there are thermal springs in its vicinity. Its manufacturing establishments include reduction works, cotton and woollen mills, glass works, iron foundries, tanneries, flour mills, sugar refineries and tobacco factories. Durango was founded in 1563 by Alonso Pacheco under the direction of Governor Francisco de Ibarra, who named it after a city of his native province in Spain. It was known, however, as Guadiana for a century thereafter, and its first bishops were given that title. It was the capital of Ibarra's new province of Nueva Viscaya, which included Durango and Chihuahua, and continued as such down to their separation in 1823.

DURANI, or DURRANI, the dominant race of Afghans, to which the ruling family at Kabul belongs. The Duranis number 100,000 fighting men, and have two branches, the Zirak and the Panjpai. To the former section belong the Popalzai, Alikozai, Barakzai and Achakzai; and to the latter the Nurzai, Alizai, Isakzai, Khokani and Maku tribes. The Saddozai clan of the Popalzai Duranis furnished the first independent shahs of the Durani dynasty (A.D. 1747), the Barakzais furnishing the amirs. The line of the shahs was overthrown in the third generation (A.D. 1834), after a protracted period of anarchy and dissension, which broke out on the death in A.D. 1773 of Ahmad Shah Durani, the founder of Afghan national independence.

Bar Durani is a name sometimes applied to the independent Pathan tribes who inhabit the hill districts south of the Hindu Kush, parts of the Indus valley, the Salt Range, and the range of Suliman, which were first conceded to them by Ahmad Shah. Bar Durani includes the Yusafzai, Utman Khel, Tarkanis, Mohmands, Afridis, Orakzais and Shinwaris, as well as the Pathan tribes of the plains of Peshawar and those of Bangash and Khattak, although the derivation of some of these tribes from the true Durani stock is doubtful.

DURANTE, FRANCESCO (1684-1755), Italian composer, was born at Frattamaggiore, in the kingdom of Naples, on the 15th of March 1684. At an early age he entered the Conservatorio dei poveri di Gesù Cristo, at Naples, where he received lessons from Gaetano Greco, later he became a pupil of Alessandro Scarlatti at the Conservatorio di Sant' Onofrio. He is also supposed to have studied under Pasquini and Pitoni in Rome, but no documentary proof of this statement can be given. He is said to have succeeded Scarlatti in 1725 at Sant' Onofrio, and to have remained there until 1742, when he succeeded Porpora as head of the Conservatorio di Santa Maria di Loreto, also at Naples. This post he held for thirteen years, till his death on the 13th of August 1755 at Naples. He was married three times. His fame as a teacher was all but unrivalled, and Jommelli, Paesiello, Pergolesi, Piccini and Vinci were amongst his pupils. A complete collection of Durante's works, consisting all but exclusively of sacred compositions, was presented by Selvaggi, a Neapolitan lover of art, to the Paris library. A catalogue of it may be found in Fétis's *Biographie universelle*. The imperial library of Vienna also preserves a valuable collection of Durante's manuscripts. Two requiems, several masses (one of which, a most original work, is the *Pastoral Mass* for four voices) and the *Lamentations* of the prophet Jeremiah are amongst his most important settings. The fact that Durante never composed for the stage brought him a somewhat exaggerated reputation as a composer of sacred music. Although certainly one of the best church composers of his style and period, he is far inferior to Leo, and seems to have been the founder of the sentimental school of Italian church music. Leo and Scarlatti at their best have a solidity and dignity entirely wanting in Durante, and Alessandro Scarlatti at his worst is frivolous rather than sentimental. This type of music is characteristic of Durante as a man; intellectually uncultured, but sincerely devout. As a teacher he insisted on the strict observance of rules for which he either would not or could not give a reason, differing thus from Alessandro

Scarlatti, whose first care was to develop his pupils' talents according to their own individualities, regarding all rules as subservient to his exquisite sense of musical beauty. Hasse rightly protested against Durante's being described as the greatest harmonist of Italy, a title which could be claimed only by Alessandro Scarlatti.

(E. J. D.)

DURÃO, JOSÉ DE SANTA RITA (1720-1784), Brazilian poet, was born near Marianna, in the province of Minas Geraes, in 1720, and died in Lisbon in 1754. He studied at Coimbra, in Portugal, graduated as a doctor of divinity, became a member of the Augustinian order of friars, and obtained a great reputation as a preacher. Having irritated the minister Pombal by his defence of the Jesuits, he retired from Portugal in 1759; and, after being imprisoned in Spain as a spy, found his way to Italy in 1763, where he became acquainted with Alfieri, Pindemonte, Casti and other literary men of the time. On his return to Portugal he delivered the opening address at the university of Coimbra for the year 1777; but soon after retired to the cloisters of a Gratian convent. At the time of his death he taught in the little college belonging to that order in Lisbon. His epic in ten cantos, entitled *Caramúru, poema epico do descubrimento da Bahia*, appeared in Lisbon in 1781, but proved at first a total failure. Its value has gradually been recognized, and it now ranks as one of the best poems in Brazilian literature—remarkable especially for its fine descriptions of scenery and native life in South America. The historic institute of Rio de Janeiro offered a prize to the author of the best essay on the legend of Caramúru; and the successful competitor published a new edition of Durão's poem. There is a French translation which appeared in Paris in 1829.

See Adolfo de Varnhagen, *Epicos Brazileiros* (1845); Pereira da Silva, *Os Varões illustres do Brasil* (1858); Wolf, *Le Brésil littéraire* (Berlin, 1863); Sotero dos Reis, *Curso de litteratura Portugueza e Brazileira*, vol. iv. (Maranhão, 1868); José Verissimo, *Estudos de literatura Brazileira, segunda serie* (Rio, 1901).

DURAZZO (anc. *Epidamnus* and *Dyrrachium*; Albanian, *Durresi*; Turkish and Slavonic, *Drach*), a seaport and capital of the sanjak of Durazzo, in the vilayet of Iannina, Albania, Turkey. Pop. (1900) about 5000. Durazzo is about 50 m. S. of Scutari, on the Bay of Durazzo, an inlet of the Adriatic Sea. It is the seat of a Roman Catholic archbishop and a Greek metropolitan, but in every respect has greatly declined from its former prosperity. The walls are dilapidated; plane-trees grow on the gigantic ruins of its old Byzantine citadel; and its harbour, once equally commodious and safe, is gradually becoming silted up. The only features worthy of notice are the quay, with its rows of cannon, and the bridge, 750 ft. long, which leads across the marshes stretching along the coast. The chief exports are olive oil—largely manufactured in the district—wheat, oats, barley, pottery and skins.

Epidamnus was founded by a joint colony of Corcyreans and Corinthians towards the close of the 7th century B.C., and from its admirable position and the fertility of the surrounding country soon rose into very considerable importance. The dissolution of its original oligarchical government by the democratic opposition, the consequent quarrel between Corcyra and the oligarchical city of Corinth, and the intervention of Athens on behalf of Corcyra, are usually included among the contributory causes of the Peloponnesian War (431-404 B.C.). In 312 B.C., Epidamnus was seized by the Illyrian king Glaucias, and shortly afterwards it passed into the power of the Romans. As the name Epidamnus sounded to Roman ears like an evil omen, as though it were derived from the Latin *damnum*, "loss" or "harm," the alternative name of *Dyrrachium*, which the city possibly received from the rugged nature of the adjoining sea-coast, came into general use. Thenceforward Epidamnus rose rapidly in importance. It was a favourite point of debarcation for the Roman armies; the great military road known as the *Via Egnatia* led from Dyrrachium to Thessalonica (Salonica); and another highway passed southwards to Buthrotum and Ambracia. Broad swamps rendered the city almost impregnable, and in 48 B.C. it became famous as the place where Pompey made his last successful resistance to Caesar. After the battle of Actium in 31 B.C., Augustus made over Dyrrachium to a colony of his veterans; it became a *civitas libera*

and a great commercial emporium (for coins see Maier, *Numis. Zeitschr.*, 1908). The summit of its prosperity was reached about the end of the 4th century, when it was made the capital of Epirus Nova. Its bishopric, created about A.D. 58, was raised to an archbishopric in 449. In 481 the city was besieged by Theodoric, the king of the East Goths; and in the 10th and 11th centuries it frequently had to defend itself against the Bulgarians. In 1082 it was stormed by the Norman Robert Guiscard, who in the previous year had defeated the Greeks under their emperor Alexius; and in 1185 it fell into the hands of King William of Sicily. Surrendered to Venice in 1202, it afterwards broke loose from the republic and in 1268 passed into the possession of Charles of Anjou. In 1273 it was laid in ruins by an earthquake, but it soon recovered from the disaster, and became an independent duchy under John, the grandson of Charles (1294-1304), and afterwards under Philip of Otranto. In 1333 it was annexed to Achaea, in 1336 to Servia, and in 1394 to Venice. The Turks obtained possession in 1501.

D'URBAN, SIR BENJAMIN (1777-1849), British general and colonial administrator, was born in 1777, and entered the British army in 1793. Promoted lieutenant and captain in 1794 he took part in that year in operations in Holland and Westphalia. In 1795 he served under Sir Ralph Abercromby in San Domingo. He went on half-pay in 1800, joining the Royal Military College, where he remained until 1805, when he went to Hanover with the force under Lord Cathcart. Returning to England he filled various staff offices, and in November 1807 went to Dublin as assistant-quartermaster-general, being transferred successively to Limerick and the Curragh. He joined the army in the Peninsula in 1808, and his marked abilities as a staff officer led to his selection by General (afterwards Viscount) Beresford as quartermaster-general in the reorganization of the Portuguese army. He served throughout the Peninsular War without once going on leave and took part in nine pitched battles and sieges, Busaco, Albuera, Badajoz, Salamanca, Vittoria, the Pyrenees, the Nivelle, the Nive and Toulouse. He was promoted major-general in the Portuguese army and colonel in the British army in 1813, and made a K.C.B. in 1815. He remained in Portugal until 1816, when he was summoned home to take up the posts of colonel of the royal staff corps and deputy quartermaster-general at the Horse Guards. In 1819 he became major-general and in 1837 lieutenant-general. From 1829 he was colonel of the 51st Foot.

Sir Benjamin began his career as colonial administrator in 1820 when he was made governor of Antigua. In 1824 he was transferred to Demerara and Essequibo, then in a disturbed condition owing to a rising among the slaves consequent on the emancipation movement in Great Britain. D'Urban's rule proved successful, and in 1831 he carried out the amalgamation of Berbice with the other counties, the whole forming the colony of British Guiana, of which D'Urban was first governor. The ability with which he had for nine years governed a community of which the white element was largely of Dutch origin led to his appointment as governor of Cape Colony. He assumed office in January 1834, and the four years during which he held that post were of great importance in the history of South Africa. They witnessed the abolition of slavery, the establishment of a legislative council and municipal councils in Cape Colony, the first great Kaffir war and the beginning of the Great Trek. The firmness and justice of his administration won the cordial support of the British and Dutch colonists. The greater part of 1835 was occupied in repelling an unprovoked invasion of the eastern borders of the colony by Xosa Kaffirs. To protect the inhabitants of the eastern province Sir Benjamin extended the boundary of the colony to the Kei river and erected military posts in the district, allowing the Xosa to remain under British supervision. Since his appointment to the Cape there had been a change of ministry in England, and Lord Glenelg had become secretary for the Colonies in the second Melbourne administration. Prejudiced against any extension of British authority and lending a ready ear to a small but influential party in South Africa, Glenelg adopted the view that the Kaffirs had been the victims of systematic injustice. In a momentous despatch dated the 26th of December 1835 he set forth his views and instructed Sir Benjamin D'Urban to give up the newly annexed territory. At the same time Sir Andries Stockenstrom, Bart. (1792-1864), was appointed lieutenant-governor for the eastern provinces of the colony to carry out the policy of the home government, in which the Kaffir chiefs were treated as being on terms of full equality with Europeans. D'Urban in vain warned Glenelg of the disastrous consequences of his decision, the beginning of the long course of vacillation which wrought great harm to South Africa. One result of the new policy was to recreate a state of insecurity, bordering on anarchy, in the eastern province, and this condition was one of the causes of the Great Trek

of the Dutch farmers which began in 1836. In various despatches D'Urban justified his position, characterizing the Trek as due to "insecurity of life and property occasioned by the recent measures, inadequate compensation for the loss of the slaves, and despair of obtaining recompense for the ruinous losses by the Kaffir invasion." (See further South Africa: *History*, and Cape Colony: *History*.) But Glenelg was not to be convinced by any argument, however cogent, and in a despatch dated the 1st of May 1837 he informed Sir Benjamin that he had been relieved of office. D'Urban, however, remained governor until the arrival of his successor, Sir George Napier, in January 1838.

During his governorship Sir Benjamin endeavoured to help the British settlers at Port Natal, who in 1835 named their town D'Urban (now written Durban) in his honour, but his suggestion that the district should be occupied as a British possession was vetoed by Lord Glenelg. Though no longer in office D'Urban remained in South Africa until April 1846. In 1840 he was made a G.C.B., and in 1842 declined a high military appointment in India offered him by Sir Robert Peel. In January 1847 he took up the command of the troops in Canada, and was still in command at the time of his death at Montreal on the 25th of May 1849.

DURBAN, the principal seaport and largest city of Natal, South Africa, the harbour being known as Port Natal, in 29° 52′ 48″ S. 31° 42′ 49″ E. It is 6810 m. from London via Madeira and 7785 via Suez, 823 m. by water E.N.E. from Cape Town and 483 m. by rail S.S.E. of Johannesburg. Pop. (1904) 67,842, of whom 31,302 were whites, 15,631 Asiatics (chiefly British Indians), 18,929 natives and 1980 of mixed race. From its situation and the character of its buildings Durban is one of the finest cities in South Africa. The climate is generally hot and humid, but not unhealthy. Although nearly half the citizens are British, the large number of Indians engaged in every kind of work gives to Durban an oriental aspect possessed by no other town in South Africa. The town is built on the E. side of a bay (Durban Bay or Bay of Natal), the entrance to which is marked on the west by a bold cliff, the Bluff, whose summit is 195 ft. above the sea, and on the east by a low sandy spit called the Point. The city extends from the Point along the side of the bay and also for some distance along the coast of the Indian Ocean, and stretches inland to a range of low hills called the Berea.

The chief streets, Smith, West and Pine, are in the lower town, parallel to one another and to the bay. They contain the principal public buildings, warehouses and shops, the Berea being a residential quarter. Of the three streets mentioned, West Street, the central thoroughfare, is the busiest. In its centre are the public gardens, in which is a handsome block of buildings in the Renaissance style, built in 1906-1908 at a cost of over £300,000, containing the town hall, municipal offices, public library, museum and art gallery. The art gallery holds many pictures of the modern British school. Opposite the municipal buildings are the post and telegraph offices, a fine edifice (built 1881-1885) with a clock tower 164 ft. high. The post office formerly served as town hall. In Pine Street is the Central railway station and the spacious Market House. Among the churches St Cyprian's (Anglican), in Smith Street, has a handsome chancel. The Roman Catholic cathedral is a fine building in the Gothic style. The town possesses several parks, one, the Victoria Park, facing the Indian Ocean. This part of the town is laid out with pleasure grounds and esplanades. The botanic gardens, in the upper town, contain a very fine collection of flowering shrubs and semi-tropical trees. Above the gardens is the observatory. There is a fine statue of Queen Victoria by Hamo Thornycroft, R.A., in the public gardens, and a memorial to Vasco da Gama at the Point. There is an extensive system of electric trams. Another favourite means of conveyance is by rickshaw, the runners being Zulus. The town is governed by a municipality which owns the water and electric lighting supplies and the tramway system. The sanitary services are excellent. The main water-supply is the Umlaas river, which enters the ocean 10 m. S. of the port. The municipal valuation, which is based on capital value, was £9,494,400 in 1909, the rate, including water, being 2½d. in the £.

The entrance to the harbour was obstructed by a formidable sand bar, but as the result of dredging operations there is now a minimum depth of water at the opening of the channel into the bay of over 30 ft., with a maximum depth of over 33 ft. The width of the passage between the Bluff and the Point is 450 ft. From the foot of the Bluff a breakwater extends over 2000 ft. into the sea, and parallel to it, starting from the Point, is a pier. The harbour is landlocked, and covers 7½ sq. m. Much of this area is shoal water, but the accommodation

available was largely increased by the removal during 1904-1908 of 24,000,000 tons of sand. The port has over 3 m. of wharfage. It possesses a floating dock capable of lifting a vessel of 8500 tons, a floating workshop, a patent slip for small craft, hydraulic cranes, &c. The minimum depth alongside the quays at low water is 23 ft., increased at places to over 30 ft. The principal wharves, where passengers, mails and general merchandise are landed, are along the Point. On the opposite side at the foot of the Bluff land has been reclaimed and extensive accommodation provided for ships coaling. At Congella at the N.E. end of the harbour some 65 acres of land were reclaimed during 1905-1906, and wharves built for the handling of heavy and bulky goods such as timber and corrugated iron. Here also are situated warehouses and railway works. The port is defended by batteries armed with modern heavy guns. The trade of the port is almost coextensive with the foreign trade of Natal.

History.—The early history of Durban is closely identified with that of the colony of Natal. The first permanent settlement by white men in the bay was made by Englishmen in 1824, when Lieutenant F.G. Farewell, R.N., and about ten companions went thither from Cape Town in the brig “Salisbury,” from which circumstance the island in the bay gets its name. In 1835 a township was laid out and the colonists gave it the name of D’Urban, in honour of Sir Benjamin D’Urban, then governor of Cape Colony. At this time a mission church was built on the heights overlooking the bay by Captain Allen Gardner, R.N., who named the hill Berea in gratitude for support received from the settlers, whom he found “more noble than those of” Zululand—Dingaan having refused to allow the captain to start a mission among his people. From December 1838 to December 1839 a small British military force was stationed at the port. On its recall the little settlement was taken possession of by Dutch emigrants from the Cape, who had defeated the Zulu king Dingaan, and who the year before at the upper end of the bay had formed an encampment, *Kangela* (look-out), the present Congella. The Dutch claimed independence, and on the block-house at Durban hoisted the flag of the “Republic of Natalia.” In 1842, however, a British military force reoccupied Durban, and on the 15th of July of that year a treaty was signed in which the Dutch recognized British sovereignty (see further NATAL: *History*). From that date Durban, though not the seat of government, became the principal town in Natal. In 1850 there were 500 white inhabitants, and in 1853 the town was granted municipal government. The first mayor was Mr George Cato (*c.* 1810-1893), one of the earliest settlers in Natal. In 1860 a railway from the Point to the town, the first railway in South Africa, was opened. The discovery of the gold-mines on the Rand greatly increased the importance of the port, and renewed efforts were made to remove the bar which obstructed the entrance to the bay. The Harbour Board, which was formed in 1881 and ceased to exist in 1893, effected, under the guidance of Mr Harry Escombe, enormous improvements in the port—on which the prosperity of Durban is dependent. But it was not until 1904 that the fairway was deepened sufficiently to allow mail steamers of the largest class to enter the harbour. The growth of the port as illustrated by customs receipts is shown in the increase from £250,000 in 1880 to £981,000 in 1904. In 1846 the customs revenue was returned at £3510.

See *Durban: Fifty Years’ Municipal History*, compiled for the corporation by W.P.M. Henderson, Asst. Town Clerk (Durban, 1904); G. Russell, *History of Old Durban* [to 1860] (Durban, 1899).

DURBAR, a term in India for a court or levee, from the Persian *darbar*. A durbar may be either a council for administering affairs of state, or a purely ceremonial gathering. In the former sense the native rulers of India in the past, like the amir of Afghanistan to-day, received visitors and conducted business in durbar. A durbar is the executive council of a native state. In the latter sense the word has come to be applied to great ceremonial gatherings like Lord Lytton’s durbar for the proclamation of the queen empress in India in 1877, or the Delhi durbar of 1903.

DÜREN, a town of Germany, in the Prussian Rhine province, on the right bank of the Roer, 19 m. E. from Aix-la-Chapelle on the main line of railway to Cologne. Pop. (1905) 29,270. It has two Protestant and six Roman Catholic churches, among the latter the Gothic St Annakirche, said to contain a portion of the head of the saint, to the shrine of which frequent pilgrimages are made. There are several high grade schools, monuments to the emperor William I., Bismarck and Moltke, and, in the town-hall, a collection of antiquities. It is the seat of considerable manufactures, notably cloth, paper, flax-spinning, carpet, artificial wool, sugar, iron wares and needles.

Düren derives its name, not, as was at one time believed, from the *Marcodurum* of the Ubii, mentioned in Tacitus, but from the *Dura* or *Duria*, assemblies held by the Carolingians in the 8th century. It received civic rights early in the 13th century. Hypothecated by the emperor Frederick II. to Count William of Jülich, it became incorporated with the duchy of that name, and with it passed to Prussia in 1816.

DURENE (1·2·4·5 tetramethyl benzene) $C_6H_2(CH_3)_4$, a hydro-carbon which has been recognized as a constituent of coal-tar. It may be prepared by the action of methyl iodide on brom-pseudocumene or 4.6 dibrom metaxylene, in the presence of sodium; or by the action of methyl chloride on toluene, in the presence of anhydrous aluminium chloride. It crystallizes in plates, having a camphor-like smell, melting at 79-80° C. and boiling at 189-191° C. It is easily soluble in alcohol, ether and benzene, and sublimes slowly at ordinary temperature. On oxidation with chromic acid mixture, it is completely decomposed into carbon dioxide and acetic acid; nitric acid oxidizes it to durylic and cumidic acids $[C_6H_2{\cdot}(CH_3)_2{\cdot}(COOH)_2]$.

DÜRER, ALBRECHT (1471-1528), German painter, draughtsman and engraver, was born at Nuremberg on the 21st of May 1471. His family was not of Nuremberg descent, but came from the village of Eytas in Hungary. The name, however, is German, and the family device —an open door—points to an original form Thürer, meaning a maker of doors or carpenter. Albrecht Dürer the elder was a goldsmith by trade, and settled soon after the middle of the 15th century in Nuremberg. He served as assistant under a master-goldsmith of the city, Hieronymus Holper, and in 1468 married his master’s daughter Barbara, the bridegroom being forty and the bride fifteen years of age. They had eighteen children, of whom Albrecht was the second. The elder Dürer was an esteemed craftsman and pious citizen, sometimes, as was natural, straitened in means by the pressure of his numerous progeny. His famous son writes with reverence and affection of both parents, and has left a touching narrative of their death-bed hours. He painted the portrait of his father twice, first in 1490, next in 1497. The former of these is in the Uffizi at Florence; of the latter, four versions exist, that in the National Gallery (formerly in the Ashburton-Northampton collections) having the best claim to originality.

The young Albrecht was his father’s favourite son. “My father,” he writes, “took special delight in me. Seeing that I was industrious in working and learning, he put me to school; and when I had learned to read and write, he took me home from school and taught me the goldsmith’s trade.” By and by the boy found himself drawn by preference from goldsmith’s work to painting; his father, after some hesitation on the score of the time already spent in learning the former trade, gave way and apprenticed him for three years, at the age of fifteen and a half, to the principal painter of the town, Michael Wolgemut. Wolgemut furnishes a complete type of the German painter of that age. At the head of a large shop with many assistants, his business was to turn out, generally for a small price, devotional pieces commissioned by mercantile corporations or private persons to decorate their chapels in the churches—the preference being usually for scenes of the Passion, or for tortures and martyrdoms of the saints. In such work the painters of Upper Germany at this time, working in the spirit of the late Gothic style just before the dawn of the Renaissance, show considerable technical attainments, with a love of quaint costumes and rich draperies

crumpled in complicated angular folds, some feeling for romance in landscape backgrounds, none at all for clearness or balance in composition, and in the attitudes and expressions of their overcrowded figures a degree of grotesqueness and exaggeration amounting often to undesigned caricature. There were also produced in the workshop of Wolgemut, as in that of other artist-craftsmen of his town, a great number of woodcuts for book illustration. We cannot with certainty identify any of these as being by the 'prentice hand of the young Dürer. Authentic drawings done by him in boyhood, however, exist, including one in silver-point of his own likeness at the age of thirteen in the Albertina at Vienna, and others of two or three years later in the print room at Berlin, at the British Museum and at Bremen.

In the school of Wolgemut Dürer learned much, by his own account, but suffered not a little from the roughness of his companions. At the end of his apprenticeship in 1490 he entered upon the usual course of travels—the *Wanderjahre*—of a German youth. Their direction we cannot retrace with certainty. There had been no one at Nuremberg skilled enough in the art of metal-engraving to teach it him to much purpose, and it had at one time been his father's intention to apprentice him to Martin Schongauer of Colmar, the most refined and accomplished German painter-engraver of his time. But after travelling two years in various parts of Germany, where we are unable to follow him, the young Dürer arrived at Colmar in 1492, only to find that Schongauer had died the previous year. He was received kindly by three brothers of the deceased master established there, and afterwards, still in 1492, by a fourth brother at Basel. Under them he evidently had some practice both in metal-engraving and in furnishing designs for the woodcutter. There is in the museum at Basel a wood-block of St Jerome executed by him and elaborately signed on the back with his name. This was used in an edition of Jerome's letters printed in the same city in the same year, 1492. Some critics also maintain that his hand is to be recognized in several series of small blocks done about the same date or somewhat later for Bergmann and other printers of Basel, some of them being illustrations to Terence (which were never printed), some to the romance of the *Ritter vom Turm*, and some to the *Narrenschiff* of Sebastian Brandt. But the prevailing opinion is against this conjecture, and sees in these designs the work not of a strenuous student and searcher such as Dürer was, but of a riper and more facile hand working in a spirit of settled routine. Whether the young Dürer's stay at Basel was long or short, or whether, as has been supposed, he travelled from there into the Low Countries, it is certain that in the early part of 1494 he was working at Strassburg, and returned to his home at Nuremberg immediately after Whitsuntide in that year. Of works certainly executed by him during his years of travel there are extant, besides the Basel wood-block, only a much-injured portrait of himself, very finely dressed and in the first bloom of his admirable manly beauty, dated 1493 and originally painted on vellum but since transferred to canvas (this is the portrait of the Felix Goldschmid collection); a miniature painting on vellum at Vienna (a small figure of the Child-Christ); and some half a dozen drawings, of which the most important are the characteristic pen portrait of himself at Erlangen, with a Holy Family on the reverse much in the manner of Schongauer; another Holy Family in nearly the same style at Berlin; a study from the female nude in the Bonnat collection; a man and woman on horseback in Berlin; a man on horseback, and an executioner about to behead a young man, at the British Museum, &c. These drawings all show Dürer intent above all things on the sternly accurate delineation of ungeneralized individual forms by means of strongly accented outline and shadings curved, somewhat like the shadings of Martin Schongauer's engravings, so as to follow their modellings and roundness.

Within a few weeks of his return (July 7th, 1494) Dürer was married, according to an arrangement apparently made between the parents during his absence, to Agnes Frey, the daughter of a well-to-do merchant of the city. By the autumn of the same year, probably feeling the incompleteness of the artistic training that could be obtained north of the Alps, he must have taken advantage of some opportunity, we know not what, to make an excursion of some months to Italy, leaving his lately married wife at Nuremberg. The evidences of this travel (which are really incontestable, though a small minority of critics still decline to admit them) consist of (1) some fine drawings, three of them dated 1494 and others undated, but plainly of the same time, in which Dürer has copied, or rather boldly translated into his own Gothic and German style, two famous engravings by Mantegna, a number of the "Tarocchi" prints of single figures which pass erroneously under that master's name, and one by yet another minor master of the North-Italian school; with another drawing dated 1495 and plainly copied from a lost original by Antonio Pollaiuolo, and yet another of an infant Christ copied in 1495 from Lorenzo di Credi, from whom also Dürer took a motive for the composition of one of his earliest Madonnas; (2) several landscape drawings done in the passes of Tirol and the Trentino, which technically will not fit in with any other period of his work, and furnish a clear record of his having crossed the

Alps about this date; (3) two or three drawings of the costumes of Venetian courtesans, which he could not have made anywhere but in Venice itself, and one of which is used in his great woodcut Apocalypse series of 1498; (4) a general preoccupation which he shows for some years from this date with the problems of the female nude, treated in a manner for which Italy only could have set him the example; and (5) the clear implication contained in a letter written from Venice in 1506 that he had been there already eleven years before; when things, he says, pleased him much which at the time of writing please him no more. Some time in 1495 Dürer must have returned from this first Italian journey to his home in Nuremberg, where he seems to have lived, without further change or removal, in the active practice of his art for the next ten years.

The hour when Dürer, the typical artist of the German nation, attained maturity was one of the most pregnant in the history of his race. It was the crisis, in northern Europe, of the transition between the middle ages and our own. The awakening of Germany at the Renaissance was not, like the awakening of Italy a generation or two earlier, a movement almost exclusively intellectual. It was indeed from Italy that the races of the north caught the impulse of intellectual freedom, the spirit of science and curiosity, the eager retrospect towards the classic past; but joined with these in Germany was a moral impulse which was her own, a craving after truth and right, a rebellion against spiritual tyranny and corruption —the Renaissance was big in the north, as it was not in the south, with a Reformation to come. The art of printing had been invented in good time to help and hasten the new movement of men's minds. Nor was it by the diffusion of written ideas only that the new art supplied the means of popular enlightenment. Along with word-printing, or indeed in advance of it, there had sprung into use another kind of printing, picture-printing, or what is commonly called engraving. Just as books were the means of multiplying, cheapening and disseminating ideas, so engravings on copper or wood were the means of multiplying, cheapening and disseminating images which gave vividness to the ideas, or served, for those ignorant of letters, in their stead. Technically one of these arts, that of line-engraving on copper, sprang from the craft of the goldsmith and metal-chaser; while that of wood-engraving sprang from the craft of the printers of pattern-blocks and playing cards. The engraver on metal habitually cut his own designs, and between the arts of the goldsmith and the painter there had always been a close alliance, both being habitually exercised by persons of the same family and sometimes by one and the same person; so that there was no lack of hands ready-trained for the new craft which required of the man who practised it that he should design like a painter and cut metal like a goldsmith. Designs intended to be cut on wood, on the other hand, were usually drawn by the artist on the block and handed over for cutting to a class of workmen—*Formschneider* or *Briefmaler*—especially devoted to that industry. Both kinds of engraving soon came to be in great demand. Independently of the illustration of written or printed books, for which purpose woodcuts were almost exclusively used, separate engravings or sets of engravings in both kinds were produced, the more finely wrought and more expensive, appealing especially to the more educated classes, on copper, the bolder, simpler and cheaper on wood; and both kinds found a ready sale at all the markets, fairs and church festivals of the land. Subjects of popular devotion predominated. Figures of the Virgin and Child, of the apostles and evangelists, the fathers of the Church, the saints and martyrs, with illustrations of sacred history and the Apocalypse, were supplied in endless repetition to satisfy the cravings of a pious and simple-minded people. But to these were quickly added subjects of allegory, of classical learning, of witchcraft and superstition and of daily life; scenes of the parlour and the cloister, of the shop, the field, the market and the camp; and lastly portraits of famous men, with scenes of court life and princely pageant and ceremony. Thus the new art became a mirror of almost all the life and thoughts of the age. The genius of Albrecht Dürer cannot be rightly estimated without taking into account the position which the arts of engraving on metal and on wood thus held in the culture of this time. He was indeed professionally and in the first place a painter; but throughout his career a great, and on the whole the most successful, part of his industry was devoted to drawing on the block for the woodcutter or engraving with his own hand on copper. The town of Nuremberg in Franconia, in the age of Dürer's early manhood, was a favourable home for the growth and exercise of his powers. Of the free imperial cities of central Germany, none had a greater historic fame or a more settled and patriotic government. None was more the favourite of the emperors, nor the seat of a more active and flourishing commerce. Nuremberg was the chief mart for the merchandise that came to central Europe from the east through Venice and over the passes of Tirol. She held not only a close commercial intercourse, but also a close intellectual intercourse, with Italy. Without being so forward as the rival city of Augsburg to embrace the architectural fashions of the Italian renaissance—continuing, indeed, to be profoundly imbued with the old and homely German burgher spirit, and to wear, in a degree which time has not very much impaired

even yet, the quaintness of the old German civic aspect—she had imported before the close of the 15th century a fair share of the new learning of Italy, and numbered among her citizens distinguished humanists like Hartmann Schedel, Sebald Schreier, Willibald Pirkheimer and Conrad Celtes. From associates like these Dürer could imbibe the spirit of Renaissance culture and research; but the external aspects and artistic traditions which surrounded him were purely Gothic, and he had to work out for himself the style and form-language fit to express what was in him. During the first seven or eight years of his settled life in his native city from 1495, he betrays a conflict of artistic tendencies as well as no small sense of spiritual strain and strife. His finest work in this period was that which he provided for the woodcutter. After some half—dozen miscellaneous single prints—“Samson and the Lion,” the “Annunciation,” the “Ten Thousand Martyrs,” the “Knight and Men-at-arms,” the “Men’s Bath,” &c.—he undertook and by 1498 completed his famous series of sixteen great designs for the Apocalypse. The northern mind had long dwelt with eagerness on these phantasmagoric mysteries of things to come, and among the earliest block-books printed in Germany is an edition of the Apocalypse with rude figures. Founding himself to some extent on the traditional motives, Dürer conceived and carried out a set of designs in which the qualities of the German late Gothic style, its rugged strength and restless vehemence, its love of gnarled forms, writhing actions and agitated lines, are fused by the fire of the young master’s spirit into vital combination with something of the majestic power and classic severity which he had seen and admired in the works of Mantegna. Of a little later date, and of almost as fine a quality, are the first seven of a large series of woodcuts known as the Great Passion; and a little later again (probably after 1500), a series of eleven subjects of the Holy Family and of saints singly or in groups: then, towards 1504-1505, come the first seventeen of a set illustrating the life of the Virgin: neither these nor the Great Passion were published till several years later.

In copper-engraving Dürer was at the same time diligently training himself to develop the methods practised by Martin Schongauer and earlier masters into one suitable for his own self-expression. He attempted no subjects at all commensurate with those of his great woodcuts, but contented himself for the most part with Madonnas, single figures of scripture or of the saints, some nude mythologies of a kind wholly new in northern art and founded upon the impressions received in Italy, and groups, sometimes bordering on the satirical, of humble folk and peasants. In the earliest of the Madonnas, the “Virgin with the Dragon-fly” (1495-1496), Dürer has thrown something of his own rugged energy into a design of the traditional Schongauer type. In examples of a few years later, like the “Virgin with the Monkey,” the design of Mother and Child clearly betrays the influence of Italy and specifically of Lorenzo di Credi. The subjects of the “Prodigal Son” and “St Jerome in the Wilderness” he on the other hand treats in an almost purely northern spirit. In the nudes of the next four or five years, which included a “St Sebastian,” the so-called “Four Witches” (1497), the “Dream” or “Temptation,” the “Rape of Amymome,” and the “Jealousy” or “Great Hercules,” Venetian, Paduan and Florentine memories are found, in the treatment of the human form, competing somewhat uncomfortably with his own inherited Gothic and northern instincts. In these early engravings the highly-wrought landscape backgrounds, whenever they occur, are generally the most satisfying feature. This feature reaches a climax of beauty and elaboration in the large print of “St Eustace and the Stag,” while the figures and animals remain still somewhat cramped and immature. In the first three or four years of the 16th century, we find Dürer in his graver-work still contending with the problems of the nude, but now with added power, though by methods which in different subjects contrast curiously with one another. Thus the “Nemesis,” belonging probably to 1503, is a marvellously wrought piece of quite unflinching realism in the rendering of a common type of mature, muscular, unshapely German womanhood. The conception and attributes of the figure are taken, as has lately been recognized, from a description in the “Manto” of Politian: the goddess, to whose shoulders are appended a pair of huge wings, stands like Fortune on a revolving ball, holding the emblems of the cup and bridle, and below her feet is spread a rich landscape of hill and valley. In the “Adam and Eve” of the next year, we find Dürer treating the human form in an entirely opposite manner; constructing it, that is, on principles of abstract geometrical proportion. The Venetian painter-etcher, Jacopo de Barbari, whom Dürer had already, it would seem, met in Venice in 1494-1495, and by the example of whose engravings he had already been much influenced, came to settle for a while in Nuremberg in 1500. He was conversant to some extent with the new sciences of perspective, anatomy and proportion, which had been making their way for years past in Italy, and from him it is likely that Dürer received the impulse to similar studies and speculations. At any rate a whole series of extant drawings enables us to trace the German gradually working out his own ideas of a canon of human proportion in the composition of his famous engraving of “Adam and Eve” (1504); which at first, as a drawing

in the British Museum proves, had been intended to be an Apollo and Diana conceived on lines somewhat similar to one of Barbari's. The drama of the subject has in this instance not interested him at all, but only the forms and designs of the figures, the realization of the quality of flesh surfaces by the subtlest use of the graving-tool known to him, and the rendering, by methods of which he had become the greatest of all masters, of the richness and intricacy of the forest background. Two or three other technical masterpieces of the engraver's art, the "Coat-of-Arms with the Skull," the "Nativity," with its exquisite background of ruined buildings, the "Little Horse" and the "Great Horse," both of 1505, complete the list of the master's chief productions in this kind before he started in the last-named year for a second visit to Italy.

The pictures of this earlier Nuremberg period are not many in number and not very admirable. Dürer's powers of hand and eye are already extraordinary and in their way almost unparalleled, but they are often applied to the too insistent, too glittering, too emphatic rendering of particular details and individual forms, without due regard to subordination or the harmony of the whole. Among the earliest seem to be two examples of a method practised in Italy especially by the school of Mantegna, but almost without precedent in Germany, that of tempera-painting on linen. One of these is the portrait of Frederick the Wise of Saxony, formerly in the Hamilton collection and now at Berlin; the second, much disfigured by restoration, is the Dresden altarpiece with a Madonna and Child in the middle and St Anthony and Sebastian in the wings. A mythology reminiscent of Italy is the "Hercules and the Stymphalian Birds" in the Germanic Museum at Nuremberg, founded directly upon the "Hercules and Centaur Nessus" of Pollaiuolo, now at New Haven, Connecticut, U.S.A. Of portraits, besides that of his father already mentioned as done in 1497, there is his own of 1498 at Madrid. Two totally dissimilar portraits of young women, both existing in duplicate examples (one pair at Augsburg and Frankfort, the other pair in the collections of M. Hengel in Paris and Baron Speck von Sternburg at Lützschema, for each of which has been claimed the name Fürlegerin, that is, a member of the Fürleger family at Nuremberg), belong to nearly the same time. Other panel portraits of the period are three small ones of members of the Tucher family at Weimar and Cassel, and the striking, restlessly elaborated half-length of Oswald Krell at Munich. In some devotional pictures of the time Dürer seems to have been much helped by pupils, as in the two different compositions of the Maries weeping over the body of Christ preserved respectively at Munich and Nuremberg. In an altarpiece at Ober St Veit and in the scattered wings of the Jabach altarpiece severally preserved at Munich, Frankfort and Cologne, the workmanship seems to be exclusively that of journeymen working from his drawings. The period is closed, so far as paintings are concerned, by two examples of far higher value than those above named, that is to say the Paumgartner altarpiece at Munich, with its romantically attractive composition of the Nativity with angels and donors in the central panel, and the fine armed figures of St George and St Eustace (lately freed from the over-paintings which disfigured them) on the wings; and the happily conceived and harmoniously finished "Adoration of the Magi" in the Uffizi at Florence.

In the autumn of 1505 Dürer journeyed for a second time to Venice, and stayed there until the spring of 1507. The occasion of this journey has been erroneously stated by Vasari. Dürer's engravings, both on copper and wood, had by this time attained great popularity both north and south of the Alps, and had begun to be copied by various hands, among others by the celebrated Marcantonio of Bologna, then in his youth. According to Vasari, Marcantonio, in copying Dürer's series of the Little Passion on wood, had imitated the original monogram, and Dürer, indignant at this fraud, set out for Italy in order to protect his rights, and having lodged a complaint against Marcantonio before the signory of Venice, carried his point so far that Marcantonio was forbidden in future to add the monogram of Dürer to copies taken after his works. This account will not bear examination. Chronological and other proofs show that if such a suit was fought at all, it must have been in connexion with another set of Dürer's woodcuts, the first seventeen of the Life of the Virgin. Dürer himself, a number of whose familiar letters written from Venice to his friend Pirkheimer at Nuremberg are preserved, makes no mention of anything of the kind. Nevertheless some such grievance may possibly have been among the causes which determined his journey. Other causes, of which we have explicit record, were an outbreak of sickness at Nuremberg; Dürer's desire, which in fact was realized, of finding a good market for the proceeds of his art; and the prospect, also realized, of a commission for an important picture from the German community settled at Venice, who had lately caused an exchange and warehouse—the *Fondaco de' Tedeschi*—to be built on the Grand Canal, and who were now desirous to dedicate a picture in the church of St Bartholomew. The picture painted by Dürer on this commission was the "Adoration of the Virgin," better known as the "Feast of Rose

Garlands"; it was subsequently acquired by the emperor Rudolf II., and carried as a thing beyond price upon men's shoulders to Vienna; it now exists in a greatly injured state in the monastery of Strahow at Prague. It shows the pope and emperor, with a lute-playing angel between them, kneeling to right and left of the enthroned Virgin and Child, who crown them with rose garlands, with a multitude of other kneeling saints disposed with free symmetry in the background, and farther in the background portraits of the donor and the painter, and a flutter of wreath-carrying cherubs in the air. Of all Dürer's works, it is the one in which he most deliberately rivalled the combined splendour and playfulness of certain phases of Italian art. The Venetian painters assured him, he says, that they had never seen finer colours. They were doubtless too courteous to add that fine colours do not make fine colouring. Even in its present ruined state, it is apparent that in spite of the masterly treatment of particular passages, such as the robe of the pope, Dürer still lacked a true sense of harmony and tone-relations, and that the effect of his work must have been restless and garish beside that of a master like the aged Bellini. That veteran showed the German visitor the most generous courtesy, and Dürer still speaks of him as the best in painting ("*der pest im gemell*") in spite of his advanced years. A similar festal intention in design and colouring, with similar mastery in passages and even less sense of harmonious relations in the whole, is apparent in a second important picture painted by Dürer at Venice, "The Virgin and Child with the Goldfinch," formerly in the collection of Lord Lothian and now at Berlin. A "Christ disputing with the Doctors" of the same period, in the Barberini Gallery at Rome, is recorded to have cost the painter only five days' labour, and is an unsatisfying and ill-composed congeries of heads and hands, both of such strenuous character and individuality as here and there to pass into caricature. The most satisfying of Dürer's paintings done in Venice are the admirable portrait of a young man at Hampton Court (the same sitter reappears in the "Feast of Rose Garlands"), and two small pieces, one the head of a brown Italian girl modelled and painted with real breadth and simplicity, formerly in the collection of Mr Reginald Cholmondeley and now at Berlin, and the small and very striking little "Christ Crucified" with the figure relieved against the night sky, which is preserved in the Dresden Gallery and has served as model and inspiration to numberless later treatments of the theme. An interesting, rather fantastic, portrait of a blonde girl wearing a wide cap, now in the Berlin museum, is dated 1507 and may have been done in the early months of that year at Venice. It is possible, though not certain, that to this date also belongs the famous portrait of himself at Munich bearing a false signature and date, 1500; in this it has been lately shown that the artist modified his own lineaments according to a preconceived scheme of facial proportion, so that it must be taken as an ideal rather than a literal presentment of himself to posterity as he appeared in the flower of his early middle age. From Venice Dürer kept up a continuous correspondence, which has been published, with his bosom friend Pirkheimer at Nuremberg. He tells of the high position he holds among the Venetians; of the jealousy shown him by some of the meaner sort of native artist; of the honour and wealth in which he might live if he would consent to abandon home for Italy; of the northern winter, and how he knows that after his return it will set him shivering for the south. Yet he resisted all seductions and was in Nuremberg again before the summer of 1507. First, it seems, he had made an excursion to Bologna, having intended to take Mantua on the way, in order to do homage to the old age of that Italian master, Andrea Mantegna, from whose work he had himself in youth learned the most. But the death of Mantegna prevented his purpose.

From the spring of 1507 until the summer of 1520, Dürer was again a settled resident in his native town. Except the brilliant existences of Raphael at Rome and of Rubens at Antwerp and Madrid, the annals of art present the spectacle of few more honoured or more fortunate careers. His reputation had spread all over Europe. From Flanders to Rome his distinction was acknowledged, and artists of less invention, among them some of the foremost on both sides of the Alps, were not ashamed to borrow from his work this or that striking combination or expressive type. He was on terms of friendship or friendly communication with all the first masters of the age, and Raphael held himself honoured in exchanging drawings with Dürer. In his own country, all orders of men, from the emperor Maximilian down, delighted to honour him; and he was the familiar companion of chosen spirits among the statesmen, humanists and reformers of the new age. The burgher life of even Nuremberg, the noblest German city, seems narrow, quaint and harsh beside the grace and opulence and poetical surroundings of Italian life in the same and the preceding generation. The great cities of Flanders also, with their world-wide commerce and long-established eminence in the arts, presented aspects of more splendid civic pomp and luxury. But among its native surroundings the career of Dürer stands out with an aspect of ideal elevation and decorum which is its own. His temper and life seem to have been remarkably free from all that was jarring, jealous and fretful; unless, indeed, we are to accept as true

the account of his wife's character which represents her as having been no fit mate for him, but an incorrigible shrew and skinflint. The name of Agnes Dürer was for centuries used to point a moral, and among the unworthy wives of great men the wife of Dürer became almost as notorious as the wife of Socrates. The source of the traditions to her discredit is to be found in a letter written a few years after Dürer's death by his life-long intimate, Willibald Pirkheimer, who accuses her of having plagued her husband to death by her meanness, made him overwork himself for money's sake, and given his latter days no peace. No doubt there must have been some kind of foundation for Pirkheimer's charges; and it is to be noted that neither in Dürer's early correspondence with this intimate friend, nor anywhere in his journals, does he use any expressions of tenderness or affection for his wife, only speaking of her as his housemate and of her helping in the sale of his prints, &c. That he took her with him on his journey to the Netherlands shows at any rate that there can have been no acute estrangement. And it is fair to remember in her defence that Pirkheimer when he denounced her was old, gouty and peevish, and that the immediate occasion of his outbreak against his friend's widow was a fit of anger because she had not let him have a pair of antlers—a household ornament much prized in those days—to which he fancied himself entitled out of the property left by Dürer. We have evidence that after her husband's death Agnes Dürer behaved with generosity to his brothers.

The thirteen or fourteen years of Dürer's life between his return from Venice and his journey to the Netherlands (spring 1507-midsummer 1520) can best be divided according to the classes of work with which, during successive divisions of the period, he was principally occupied. The first five years, 1507-1511, are pre-eminently the painting years of his life. In them, working with infinite preliminary pains, as a vast number of extant drawings and studies testify, he produced what have been accounted his four capital works in painting, besides several others of minor importance. The first is the "Adam and Eve" dated 1507, in which both attitudes and proportions are as carefully calculated, though on a somewhat different scheme, as in the engraving of 1504. Two versions of the picture exist, one in Florence at the Pitti palace, the other, which is generally allowed to be the original, at Madrid. To 1508 belongs the life-sized "Virgin with the Iris," a piece remarkable for the fine romantic invention of its background, but plainly showing the hand of an assistant, perhaps Hans Baldung, in its execution: the best version is in the Cook collection at Richmond, an inferior one in the Rudolphinum at Prague. In 1508 Dürer returned to a subject which he had already treated in an early woodcut, the "Massacre of the Ten Thousand Martyrs of Nicomedia." The picture, painted for the elector Frederick of Saxony, is now in the Imperial Gallery at Vienna; the overcrowded canvas (into which Dürer has again introduced his own portrait as a spectator alongside of the elector) is full of striking and animated detail, but fails to make any great impression on the whole, and does not do justice to the improved sense of breadth and balance in design, of clearness and dignity in composition, which the master had undoubtedly brought back with him from his second visit to Italy. In 1509 followed the "Assumption of the Virgin" with the Apostles gathered about her tomb, a rich altarpiece with figures of saints and portraits of the donor and his wife in the folding wings, executed for Jacob Heller, a merchant of Frankfort, in 1509. This altarpiece was afterwards replaced at Frankfort (all except the portraits of the donors, which remained behind) by a copy, while the original was transported to Munich, where it perished by fire in 1674. The copy, together with the many careful and highly finished preparatory studies for the heads, limbs and draperies which have been preserved, shows that this must have been the one of Dürer's pictures in which he best combined the broader vision and simpler habits of design which had impressed him in the works of Italian art with his own inherited and ingrained love of unflinchingly grasped fact and rugged, accentuated character. In 1511 was completed another famous painting, multitudinous in the number of its figures though of very moderate dimensions, the "Adoration of the Trinity by all the Saints," a subject commissioned for a chapel dedicated to All Saints in an almshouse for decayed tradesmen at Nuremberg, and now at the Imperial Gallery at Vienna. Nothing can exceed the fulness and variety of invention, or the searching force and precision of detail in this picture; nor does it leave so much to desire as several of the master's other paintings in point of colour-harmony and pleasurable general effect.

In the meantime Dürer had added a few to the number of his line-engravings and had completed the two woodcut series of the Great Passion, begun about 1498-1499, and the Life of the Virgin. The new subjects compared with the old show some falling off in dramatic stress and intensity of expression, but on the other hand a marked gain in largeness of design and clearness of composition. In 1511 these two works were brought out for the first time, and the Apocalypse series in a second edition; and for the next three years, 1511-1514, engraving both on wood and copper, but especially the latter, took the first place among

Dürer's activities. Besides such fine single woodcuts as the "Mass of St Gregory," the "St Christopher," the "St Jerome," and two Holy Families of 1511, Dürer published in the same year the most numerous and popularly conceived of all his woodcut series, that known from the dimensions of its thirty-seven subjects as the "Little Passion" on wood; and in the next year, 1512, a set of fifteen small copper-engravings on the same theme, the "Little Passion" on copper. Both of these must represent the labour of several preceding years: one or two of the "Little Passion" plates, dating back as far as 1507, prove that this series at least had been as long as five years in his mind. In thus repeating over and over on wood and copper nearly the same incidents of the Passion, or again in rehandling them in yet another medium, as in the highly finished series of drawings known as the "Green Passion" in the Albertina at Vienna, Dürer shows an inexhaustible variety of dramatic and graphic invention, and is never betrayed into repeating an identical action or motive.

In 1513 and 1514 appeared the three most famous of Dürer's works in copper-engraving, "The Knight and Death" (or simply "The Knight," as he himself calls it, 1513), the "Melancolia" and the "St Jerome in his Study" (both 1514). These are the masterpieces of the greatest mind which ever expressed itself in this form of art. Like other masterpieces, they suggest much more than they clearly express, and endless meanings have been, rightly or wrongly, read into them by posterity. Taken together as a group, they have been supposed to be three out of an uncompleted series designed to illustrate the four "temperaments" and complexions of men. Again, more reasonably, they have been taken as types severally of the moral, the intellectual and the theological virtues. The idea at the bottom of the "Knight and Death" seems to be a combination of the Christian knight of Erasmus's *Enchiridion militis Christiani* with the type, traditional in medieval imagery, of the pilgrim on his way through the world. The imaginative force of the presentation, coming from a man of Dürer's powers, is intense; but what consciously occupied him most may well have been the problem how to draw accurately the proportions and action of a horse in motion. This problem he here solves for the first time, with the help of an Italian example: at least his design so closely repeats that of Leonardo da Vinci's famous and early destroyed equestrian statue of Francesco Sforza that we must certainly suppose him to have seen either the model itself or such a drawing of it as is still preserved by Leonardo's own hand. The face of the rider seems to recall that of the statue of Bartolommeo Colleoni at Venice; for the armour Dürer had recourse to an old drawing of his own, signed and dated in 1498. The "Melancolia," numbered "1" as though intended to be the first of a series, with its brooding winged genius sitting dejectedly amidst a litter of scientific instruments and symbols, is hard to interpret in detail, but impossible not to recognize in general terms as an embodiment of the spirit of intellectual research (the student's "temperament" was supposed to be one with the melancholic), resting sadly from its labours in a mood of lassitude and defeat. Comparatively cheerful beside these two is the remaining subject of the student saint reading in his chamber, with his dog and domestic lion resting near him, and a marvellous play of varied surface and chequered light on the floor and ceiling of his apartment and on all the objects which it contains. Besides these three masterpieces of line-engraving, the same years, 1512-1515, found Dürer occupied with his most important experiments in etching, both in dry-point ("The Holy Family and Saints" and the "St Jerome in the Wilderness") and with the acid bath. At the same time he was more taken up than ever, as is proved by the contents of a sketch-book at Dresden, with mathematical and anatomical studies on the proportions and structure of the human frame. A quite different kind of study, that of the postures of wrestlers in action, is illustrated by a little-known series of drawings, still of the same period, at Vienna. Almost the only well-authenticated painting of the time is a "Virgin and Child" in the Imperial Museum at Vienna. The portraits of the emperors Charles the Great and Sigismund (1512), in their present state at any rate, can hardly be recognized as being by the master's hand. An interval of five years separates the Vienna "Madonna" from the two fine heads of the apostles Philip and James in the Uffizi at Florence, the pair of boys' heads painted in tempera on linen in the Bibliothèque Nationale at Paris, the "Madonna with the Pink" at Augsburg, and the portrait of Wolgemut at Munich, all of 1516. Among engravings of the same time are three Madonnas, the apostles Thomas and Paul, a bagpiper and two peasants dancing, and three or four experiments in etching on plates of iron and zinc. In wood-engraving his energies were almost entirely given to bearing a part—which modern research has proved to have been not nearly so large as was traditionally supposed—in the great decorative schemes commanded by the Emperor Max in his own honour, and devised and carried out by a whole corps of men of letters and artists: namely, the Triumphal Gate and the Triumphal March or Procession. A third and smaller commemorative design, the Triumphal Car, originally designed to form part of the second but in the end issued separately, was entirely Dürer's own work. A far more successful and attractive effort of his genius in the same service is to be found in the

marginal decorations done by him in pen for the emperor's prayer-book. This unequalled treasure of German art and invention has in later times been broken up, the part executed by Dürer being preserved at Munich, the later sheets, which were decorated by other hands, having been transported to Besançon. Dürer's designs, drawn with the pen in pale lilac, pink and green, show an inexhaustible richness of invention and an airy freedom and playfulness of hand beyond what could be surmised from the sternness of those studies which he made direct from life and nature. They range from subjects of the homeliest and most mirthful realism to others serious and devout, and from literal or almost literal transcripts of natural form to the most whimsically abstract combinations of linear pattern and tendril and flourish.

All these undertakings for his imperial friend and patron were stopped by the emperor's death in 1519. A portrait-drawing by the master done at Augsburg a few months previously, one of his finest works, served him as the basis both of a commemorative picture and a woodcut. Other paintings of this and the succeeding year we may seek for in vain; but in line engravings we have four more Madonnas, two St Christophers, one or two more peasant subjects, the well-known St Anthony with the view of Nuremberg in the background, and the smaller of the two portraits of the Cardinal-Elector of Mainz; and in wood-engraving several fine heraldic pieces, including the arms of Nuremberg.

In the summer of 1520 the desire of Dürer to secure from Maximilian's successors a continuance of the patronage and privileges granted during his lifetime, together with an outbreak of sickness in Nuremberg, gave occasion to the master's fourth and last journey from home. Together with his wife and her maid he set out in July for the Netherlands in order to be present at the coronation of the young emperor Charles V., and if possible to conciliate the good graces of the all-powerful regent Margaret. In the latter part of his aim Dürer was but partially successful. His diary of his travels enables us to follow his movements almost day by day. He journeyed by the Rhine, Cologne, and thence by road to Antwerp, where he was handsomely received, and lived in whatever society was most distinguished, including that of Erasmus of Rotterdam. Besides his written notes, interesting traces of his travels exist in the shape of the scattered leaves of a sketch-book filled with delicate drawings in silver-point, chiefly views of places and studies of portrait and costume. Several of his finest portrait-drawings in chalk or charcoal, including those of his brother artists Lucas Van Leyden and Bernard Van Orley, as well as one of two fine portrait paintings of men, belong to the period of this journey. So does a magnificent drawing of a head of a nonagenarian with a flowing beard who sat to him at Antwerp, together with a picture from the same head in the character of St Jerome; the drawing is now at Vienna, the picture at Lisbon. Dürer's interest and curiosity, both artistic and personal, were evidently stimulated by his travels in the highest degree. Besides going to Aachen for the coronation, he made excursions down the Rhine from Cologne to Nijmwegen, and back overland by 's Hertogenbosch; to Brussels; to Bruges and Ghent; and to Zealand with the object of seeing a natural curiosity, a whale reported ashore. The vivid account of this last expedition given in his diary contrasts with the usual dry entries of interviews and disbursements. A still more striking contrast is the passionate outburst of sympathy and indignation with which, in the same diary, he comments on the supposed kidnapping of Luther by foul play on his return from the diet of Worms. Without being one of those who in his city took an avowed part against the old ecclesiastical system, and probably without seeing clearly whither the religious ferment of the time was tending—without, that is, being properly speaking a Reformer—Dürer in his art and his thoughts was the incarnation of those qualities of the German character and conscience which resulted in the Reformation; and, personally, with the fathers of the Reformation he lived in the warmest sympathy.

On the 12th of July 1521 Dürer reached home again. Drawings of this and the immediately following years prove that on his return his mind was full of schemes for religious pictures. For a great group of the Madonna surrounded with saints there are extant two varying sketches of the whole composition and a number of finished studies for individual heads and figures. Less abundant, but still sufficient to prove the artist's intention, are the preliminary studies to a picture of the Crucifixion. There exist also fine drawings for a "Lamentation over the body of Christ," an "Adoration of the Kings," and a "March to Calvary"; of the last-named composition, besides the beautiful and elaborate pen-and-ink drawing at Florence, three still more highly-wrought versions in green monochrome exist; whether any of them are certainly by the artist's own hand is matter of debate. But no religious paintings on the grand scale, corresponding to these drawings of 1521-1524, were ever carried out; perhaps partly because of the declining state of the artist's health, but more because of the degree to which he allowed his time and thoughts to be absorbed in the preparation of his theoretical works on geometry and perspective, proportion and fortification. Like Leonardo, but with much

less than Leonardo's genius for scientific speculation and divination, Dürer was a confirmed reasoner and theorist on the laws of nature and natural appearances. He himself attached great importance to his studies in this kind; his learned friends expected him to give their results to the world; which accordingly, though having little natural gift or felicity in verbal expression, he laboured strenuously to do. The consequence was that in the last and ripest years of his life he produced as an artist comparatively little. In painting there is the famous portrait of Hieronymus Holtzschuher at Berlin, in which the personality and general aspect of the sitter assert themselves with surprising power. This and the Antwerp head of Jerome are perhaps the most striking examples of Dürer's power of forcing into subordination to a general impression such a multiplicity of insistent detail as would have smothered any weaker conception than his. No other hand could have ventured to render the hair and beard of a sitter, as it was the habit of this inveterate linearist to do, not by indication of masses, but by means of an infinity of single lines swept, with a miraculous certainty and fineness of touch, in the richest and most intricate of decorative curves. To the same period belong a pleasing but somewhat weak "Madonna and Child" at Florence; and finally, still in the same year 1526, the two famous panels at Munich embodying the only one of the great religious conceptions of the master's later years which he lived to finish. These are the two pairs of saints, St John with St Peter in front and St Paul with St Mark in the background. The John and Paul are conceived and executed really in the great style, with a commanding nobility and force alike in the character of the heads, the attitudes, and the sweep of draperies; they represent the highest achievement of early German art in painting. In copper-engraving Dürer's work during the same years was confined entirely to portraits, those of the cardinal-elector of Mainz ("The Great Cardinal"), Frederick the Wise, elector of Saxony, Willibald Pirkheimer, Melanchthon and Erasmus. To the tale of his woodcuts, besides a few illustrations to his book on measurements (that is, geometry and perspective), and on fortification, he only added one Holy Family and one portrait, that of his friend Eoban Hesse. Of his theoretical books, he only succeeded in getting two finished and produced during his lifetime, that on geometry and perspective or measurement, to use his own title—which was published at Nuremberg in 1525, and that on fortification, published in 1527; the work on human proportions was brought out shortly after his death in 1528. His labours, whether artistic or theoretic, had for some time been carried on in the face of failing health. In the canals of the Low Countries he had caught a fever, of which he never shook off the effects. We have the evidence of this in his own written words, as well as in a sketch which he drew to indicate the seat of his suffering to some physician with whom he was in correspondence, and again in the record of his physical aspect which is preserved by a portrait engraved on wood just after his death, from a drawing made no doubt not long before in this portrait we see his shoulders already bent, the features somewhat gaunt, the old pride of the abundant locks shorn away. The end came on the night of the 6th of April 1528, so suddenly that there was no time to call his dearest friends to his bedside. He was buried in a vault which belonged to his wife's family, but was afterwards disturbed, in the cemetery of St John at Nuremberg. An appropriate *Requiescat* is contained in the words of Luther, in a letter written to their common friend Eoban Hesse:—"As for Dürer, assuredly affection bids us mourn for one who was the best of men, yet you may well hold him happy that he has made so good an end, and that Christ has taken him from the midst of this time of trouble and from greater troubles in store, lest he, that deserved to behold nothing but the best, should be compelled to behold the worst. Therefore may he rest in peace with his fathers: Amen."

The principal extant paintings of Dürer, with the places where they are to be found, have been mentioned above. Of his drawings, which for students are the most vitally interesting part of his works, the richest collections are in the Albertina at Vienna, the Berlin Museum and the British Museum. The Louvre also possesses some good examples, and many others are dispersed in various public collections, as in the Musée Bonnat at Bayonne, at Munich, Hamburg, Bremen, Frankfort, Dresden, Basel, Milan, Florence and Oxford, as well as in private hands all over Europe.

The principal editions of Dürer's theoretical writings are these:—

Geometry and Perspective.—Underweysung der Messung mit dem Zirckel und Richtscheyt, in Linien, Ebnen und ganzen Corporen (Nuremberg, 1525, 1533, 1538). A Latin translation of the same, with a long title (Paris, Weichel, 1532) and another ed. in 1535. Again in Latin, with the title *Institutionum geometricarum libri quatuor* (Arnheim, 1605).

Fortification.—Etliche Underricht zu Befestigung der Stett, Schloss und Flecken (Nuremberg, 1527), and other editions in 1530, 1538 and 1603 (Arnheim). A Latin translation, with the title *De urbibus, arcibus, castellisque muniendis ac condendis* (Paris, Weichel, 1535). See the article FORTIFICATION.

Human Proportion.—Hierinnen sind begriffen vier Bücher von menschlicher Proportion (Nuremberg, 1582, and Arnheim, 1603). Latin translation: *De symetria partium in rectis formis humanorum corporum libri in latinum conversi, de varietate figurarum, &c. libri ii.* (Nuremberg, 1528, 1532 and 1534); (Paris, 1535, 1537, 1557). French translation (Paris, 1557, Arnheim, 1613, 1614). Italian translation (Venice, 1591, 1594); Portuguese translation (1599); Dutch translation (Arnheim, 1622, 1662).

The private literary remains of Dürer, his diary, letters, &c., were first published, partially in Von Murr's *Journal zur Kunstgeschichte* (Nuremberg, 1785-1787); afterwards in Campe's *Reliquien von A. Dürer* (Nuremberg, 1827); again edited by Thausing, in the *Quellenschriften für Kunstgeschichte und Kunsttechnik* (Vienna, 1872), but most completely in Lange and Fuhse's *Dürers schriftlicher Nachlass* (Halle, 1893); W.M. Conway's *Literary Remains of A. Dürer* (London, 1889) contains extensive transcripts from the MSS. in the British Museum.

The principal remaining literature of the subject will be found in the following books and treatises—Johann Neudörfer, Schreib- und Rechenmeister zu Nürnberg, *Nachrichten über Künstlern und Werkleuten daselbst* (Nuremberg, 1547); republished in the Vienna *Quellenschrift* (1875); C. Scheurl, *Vita Antonii Kressen* (1515, reprinted in the collection of Pirkheimer's works, Frankfort 1610); Wimpheling, *Epitome rerum Germanicarum*, ch. 68 (Strassburg, 1565); Joachim von Sandrart, *Deutsche Academie* (Nuremberg, 1675); Doppelmayr, *Historische Nachricht von den nürnbergischen Mathematicis und Künstlern* (Nuremberg, 1730); C.G. von Murr, *Journal zur Kunstgeschichte*, as above; Adam Bartsch, *Le Peintre-Graveur*, vol. vii. (Vienna, 1808); J.P. Passavant, *Le Peintre-Graveur*, vol. iii. (Leipzig, 1842); J.F. Roth, *Leben Albrecht Dürers* (Leipzig, 1791); Heller, *Das Leben und die Werke Albrecht Dürers*, vol. ii. (Bamberg, 1827-1831); B. Hausmann, *Dürers Kupferstiche, Radirungen, Holzschnitte und Zeichnungen* (Hanover, 1861); R. von Rettberg, *Dürers Kupferstiche und Holzschnitte* (Munich, 1876); M. Thausing, *Dürer, Geschichte seines Lebens und seiner Kunst* (Leipzig, 1876, 2nd ed., 1884), English translation (from the 1st ed. by F.A. Eaton, London, 1882); W. Schmidt in Dohme's *Kunst und Künstler des Mittelalters und der Neuzeit* (Leipzig, 1877); *Œuvre de Albert Dürer reproduit et publié par Amand-Durand, texte par Georges Duplessis* (Paris, 1877); C. Ephrussi, *A. Dürer et ses dessins* (Paris, 1882); F. Lippmann, *Zeichnungen von A. Dürer in Nachbildungen* (5 vols. Berlin, 1883-1905); A. Springer, *Albrecht Dürer* (Berlin, 1892); D. Burckhardt, *Dürers Aufenthalt in Basel*, 1492-1494 (Munich, 1892); G. von Terey, *A Dürers venezianischer Aufenthalt*, 1494-1495 (Strassburg, 1892); S.R. Koehler, *A Chronological Catalogue of the Engravings, Dry Points and Etchings of A. Dürer* (New York, 1894); L. Cust, *A. Dürer, a Study of his Life and Works* (London, 1897); Dürer Society's Publications (10 vols., 1898-1907), edited by C. Dodgson and S.M. Peartree; H. Knackfuss, *Dürer* (Bielefeld and Leipzig, 6th ed., 1899), English translation, 1900; B. Haendcke, *Die Chronologie der Landschaften A. Dürers* (Strassburg, 1899); M. Zucker, *Albrecht Dürer* (Halle, 1899-1900); L. Justi, *Konstruierte Figuren und Köpfe unter den Werken Albrecht Dürers* (Leipzig, 1902); A. Pelzer, *A. Dürer und Friedrich II. von der Pfalz* (Strassburg, 1905); H. Wölfflin, *Die Kunst A. Dürers* (Munich, 1905); W. Weisbach, *Der junge Dürer* (Leipzig, 1906); V. Scherer, *A. Dürer* (*Klassiker der Kunst*, iv.), (2nd ed., Stuttgart, 1906).

Apart from books, a large and important amount of the literature on Dürer is contained in articles scattered through the leading art periodicals of Germany, such as the *Jahrbücher* of the Berlin and Vienna museums, *Repertorium für Kunstwissenschaft*, *Zeitschrift für bildende Kunst*, &c. A comprehensive survey of this literature is afforded by Prof. H.W. Singer's *Versuch einer Dürer-Bibliographie* (Strassburg, 1903); articles published more recently will be found completely enumerated in A. Jellinek's *Internationale Bibliographie der Kunstwissenschaft* (Berlin).

(S. C.)

DURESS (through Fr. from Lat. *duritia*, harshness, severity, *durus*, hard), in law, constraint or compulsion. Duress may be of two kinds. It may consist in personal restraint or actual violence or imprisonment; or it may be by threats (*per minas*), as where a person is compelled to an act by threats of immediate death or grievous bodily harm. Duress, in certain cases, may be pleaded as a defence of an act which would otherwise be a crime, but the extent to which the plea of duress can be urged is unascertained. At common law a contract entered into under duress is voidable at the option of one of the parties. See Coercion, Contract.

D’URFEY, THOMAS (1653-1723), better known as Tom d’Urfey, English song-writer and dramatist, belonged to a Huguenot family settled at Exeter, where he was born in 1653. Honoré d’Urfé, the author of *Astrée*, was his uncle. His first play, *The Siege of Memphis, or the Ambitious Queen*, a bombastic rhymed tragedy, was produced at the Theatre Royal in 1676. He was much more successful with his comedies, which had brisk, complicated plots carried out in lively dialogue. He had a light touch for fitting words on current topics to popular airs; moreover, many of his songs were set to music by his friends Dr John Blow, Henry Purcell and Thomas Farmer. Many of these songs were introduced into his plays. Addison in the *Guardian* (No. 67) relates that he remembered to have seen Charles II. leaning on Tom d’Urfey’s shoulder and humming a song with him. Even William III. liked to hear him sing his songs, and as a strong Tory he was sure of the favour of Princess Anne, who is said to have given Tom fifty guineas for a song on the Electress Sophia, the next heir in succession to the crown. “The crown’s far too weighty, for shoulders of eighty,” said d’Urfey, with an indirect compliment to the princess, “So Providence kept her away,—poor old Dowager Sophy.” Pope, in an amusing letter to Henry Cromwell (*Works*, ed. Elwin and Courthope, vi. 91) describes him as “the only poet of tolerable reputation in this country.” In spite of the success of his numerous comedies he was poor in his old age. But his gaiety and invincible good humour had made him friends in the craft, and by the influence of Addison his *Fond Husband, or The Plotting Sisters* was revived for d’Urfey’s benefit at Drury Lane on the 15th of June 1713. This performance, for which Pope wrote a prologue full of rather faint praise, seems to have eased the poet’s difficulties. He died on the 26th of February 1723, and was buried in St James’s Church, Piccadilly.

Collections of his songs with the music appeared during his lifetime, the most complete being the 1719-1720 edition (6 vols.) of *Wit and Mirth; or Pills to Purge Melancholy*. The best known of the twenty-nine pieces of his which actually found their way to the stage were *Love for Money; or The Boarding School* (Theatre Royal, 1691), *The Marriage-Hater Match’d* (1692), and *The Comical History of Don Quixote*, in three parts (1694, 1694 and 1696), which earned the especial censure of Jeremy Collier. In his burlesque opera, *Wonders in the Sun; or the Kingdom of the Birds* (1706, music by G.B. Draghi), the actors were dressed as parrots, crows, &c.

DURFORT, a village of south-western France, formerly in the province of Guienne, now in the department of Tarn-et-Garonne, 18 m. N.W. of Montauban by road. It was at one time the seat of a feudal lordship which gave its name to a family distinguished in French and English history. Though earlier lords are known, the pedigree of the family is only clearly traceable to Arnaud de Durfort (fl. 1305), who acquired the fief of Duras by his marriage with a niece of Pope Clement V. His descendant, Gaillard de Durfort, having embraced the side of the king of England, went to London in 1453, and was made governor of Calais and a knight of the Garter.

The greatness of the family dates, however, from the 17th century. Guy Aldonce (1605-1665), marquis de Duras and comte de Rozan, had, by his wife Elizabeth de la Tour d’Auvergne, sister of Marshal Turenne, six sons, three of whom played a distinguished part. The eldest, Jacques Henri (1625-1704), was governor of Franche Comté in 1674 and was created a marshal of France for his share in the conquest of that province (1675). The second, Guy Aldonce (1630-1702), comte de Lorges and duc de Quintin (known as the duc de Lorges), became a marshal of France in 1676, commanded the army in Germany from 1690 to 1695, and captured Heidelberg in 1693. The sixth son, Louis (1640?-1709), marquis de Blanquefort, came to England in the suite of James, duke of York, in 1663, and was naturalized in the same year. On the 19th of January 1672-1673 he was raised to the English peerage as Baron Duras of Holdenby, his title being derived from an estate in Northamptonshire bought from the duke of York, and in 1676 he married Mary, daughter and elder co-heiress of Sir George Sondes, created in that year Baron Throwley, Viscount Sondes and earl of Feversham. On the death of his father-in-law (16th of April 1677), Duras succeeded to his titles under a special remainder. He was appointed by Charles II.

successively to the command of the third and second troops of Horse Guards, was sent abroad on several important diplomatic missions, and became master of the horse (1679) and lord chamberlain to the queen (1680). In 1682 he was appointed a lord of the bed-chamber, and was present at the king's deathbed reconciliation with the Roman Church. Under James II. Feversham became a member of the privy council, and in 1685 was given the chief command against the rebels under Monmouth (*q.v.*), in which he mainly distinguished himself by his cruelty to the vanquished. He was rewarded with a knighthood of the Garter and the colonelcy of the first troop of Life Guards, and in 1686 he was appointed to the command of the army assembled by King James on Blackheath to overawe the people. On James's flight, Feversham succeeded in making his peace with William, on the intercession of the queen dowager, at whose instance he received the mastership of the Royal Hospital of St Catherine near the Tower (1698). He died without issue on the 8th of April 1709. [See G.E. C(ockayne), *Complete Peerage*, and art. in *Dict. Nat. Biog.*]

Jean Baptiste (1684-1770), due de Duras, son of Jacques Henri, was also a marshal of France. In 1733 he resigned the dukedom of Duras to his son, Emmanuel Félicité, himself receiving the brevet title of duc de Durfort. Emmanuel Félicité (1715-1789), duc de Duras, took part in all the wars of Louis XV. and was made a marshal of France in 1775. His grandson, Amédée Bretagne Malo (1771-1838), duc de Duras, is mainly known as the husband of Claire Louise Rose Bonne de Coëtnempren de Kersaint (1778-1828), daughter of Armand Guy Simon de Coëtnempren Kersaint (*q.v.*), who, as duchesse de Duras, presided over a once celebrated salon and wrote several novels once widely read.

The family of Durfort is represented in France now by the branch of Durfort-Civrac, dating from the 16th century. Jean Laurent (1740-1826), marquis de Civrac, married his cousin, the daughter of the duc de Lorges; his son, Guy Emeric Anne (1767-1837), duc de Civrac, became afterwards duc de Lorges. Henri, marquis de Durfort-Civrac (1812-1884), was a well-known politician, and was several times elected vice-president of the chamber of deputies.

DURGA, or Devi (Sanskrit for inaccessible), in Hindu mythology, the wife of Siva (*q.v.*) and daughter of Himavat (the Himalayas). She has many names and many characters. As Durga (so named from having slain the demon Durga) she is warlike and ferocious, and to her in this form are offered bloody sacrifices, and such ceremonies as the Durgapuja and Churrukpuga are held in her honour (see Kali). The chief festival in Bengal—sometimes termed the Christmas of Bengal—celebrates the goddess's birth in the sixth Hindu month (parts of September and October). Durga is pictured, in spite of her fierce nature, with a gentle face. She has ten arms, holding each a weapon, while her attendant lions and giants are grouped on each side.

DURHAM, JOHN GEORGE LAMBTON, 1st Earl of (1792-1840), English statesman, son of William Henry Lambton of Lambton Castle, Durham, was born in London on the 12th of April 1792. His mother was Anne Barbara Villiers, daughter of the 4th earl of Jersey. Lambton was only five years old when by his father's death at Pisa (1797) he succeeded to large estates in the north of England which had been in the uninterrupted possession of his family since the 12th century. In 1805 he went to Eton, and in 1809 obtained a commission in the 10th Hussars. In 1812, while still a minor, he made a runaway match with Henrietta, natural daughter of Lord Cholmondeley, whom he married at Gretna Green, and who died in 1815. In 1813 he was elected to the House of Commons as member for the county of Durham. Whig principles of a pronounced type were traditional in Lambton's family. His grandfather, General John Lambton, had refused a peerage in 1793 out of loyalty to Fox, and his father was not only one of Pitt's keenest opponents, but was chairman of "The Friends of the People" and author of that society's address to the nation in 1792. Lambton adhered to this tradition, and soon developed opinions of an extremely Radical type, which he fearlessly put forward in parliament and in the country with marked ability. His maiden speech in the

House of Commons was directed against the foreign policy of Lord Liverpool's government, who had sanctioned, and helped to enforce, the annexation of Norway by Sweden. In 1815 he vehemently opposed the corn tax, and in general began to take a prominent part in opposition to the Tories. In 1816 he made the acquaintance of Lafayette in Paris, and narrowly escaped arrest for alleged complicity in his escape. In 1817 he began to speak on every opportunity in favour of parliamentary reform.

His political position was strengthened by his marriage in December 1816 to Louisa Elizabeth, eldest daughter of Lord Grey, and as early as 1818 he was taken into the political confidence of his father-in-law and other leaders of the Whigs in matters touching the leadership and policy of the party. But from the first Lambton belonged to the avowedly Radical wing of the party, with whose aims Grey had little sympathy; and when he gave notice of a resolution in 1819 in favour of shortening the duration of parliaments, and of a wide extension of the franchise, he found himself discountenanced by old Whigs like Grey, Holland and Fitzwilliam. Having warmly espoused the cause of Queen Caroline, Lambton ably seconded Lord Tavistock's resolution in February 1821 censuring the government for their conduct towards the queen; and in April he made his first great speech in the House of Commons on parliamentary reform, when he proposed a scheme for the extension of the suffrage to all holders of property, the division of the country into electoral districts and the disfranchisement of rotten boroughs. He was now one of the recognized leaders of the advanced Liberals, forming a connecting link between the aristocratic Whig leaders and the irresponsible and often violent politicians of the great towns. His opposition to those members of his party who in 1825 were prepared for compromise on the question of Catholic emancipation led to his first conflict with Brougham, with whom he had been on terms of close friendship. While supporting the candidature of his brother-in-law, Lord Howick, for Northumberland in the elections of 1826, Lambton fought a duel with T.W. Beaumont, the Tory candidate, but without bloodshed on either side. Unlike his father-in-law, Lambton supported the ministry of Canning, though he had some grounds for personal grievance against the new prime minister, and after Canning's death that of Lord Goderich. On the advice of the latter Lambton was raised to the peerage in 1828 with the title of Baron Durham. Owing to his Liberal principles Lord Durham was on terms of friendship with the duke of Sussex, and also with Prince Leopold of Saxe-Coburg, who sought his advice in the difficult crisis in 1829 when he was offered the throne of Greece, and who, after he became king of the Belgians as Leopold I., continued to correspond with Durham as a trusted confidant; the same confidential relations also existed between Durham and Leopold's sister, the duchess of Kent, and her daughter, afterwards Queen Victoria.

In November 1830 when Grey became prime minister in succession to the duke of Wellington, Lord Durham entered the cabinet as lord privy seal. Parliamentary reform was in the forefront of the new government's policy, and with this question no statesman except Lord Grey himself was more closely indentified than Durham. To ardent reformers in the country the presence in the cabinet of "Radical Jack," the name by which Lambton had been popularly known in the north of England, was a pledge that thorough-going reform would not be shirked by the Whigs, now in office for the first time for twenty years. And it was to his son-in-law that Lord Grey confided the task of preparing a scheme to serve as the basis of the proposed legislation. Full justice has not generally been done to the leading part played by Lord Durham in preparing the great Reform Act. He was the chief author of the proposals which, after being defeated in 1831, became law with little alteration in 1832. He was chairman of the famous committee of four, which met at his house in Cleveland Row and drew up the scheme submitted by the government to parliament. His colleagues, who were appointed rather as his assistants than as his equals, were Lord John Russell, Sir James Graham and Lord Duncannon; and it was Durham who selected Lord John Russell, not then in the cabinet, to introduce the bill in the House of Commons; a selection that was hotly opposed by Brougham, whose later vindictive animosity against Durham is to be traced to his having been passed over in the selection of the committee of four. Durham was present with Grey at an audience of the king which led to the sudden dissolution of parliament in March 1831; and when the deadlock between the two Houses occurred over the second Reform Bill, he was the most eager in pressing on the prime minister the necessity for a creation of peers to overcome the resistance of the house of Lords.

After the passing of the Reform Act, Durham, whose health was bad and who had suffered the loss of two of his children, accepted a special and difficult diplomatic mission to Russia, which he carried out with much tact and ability, though without accomplishing its main purpose. On his return he resigned office in March 1833, ostensibly for reasons of health, but in reality owing to his disagreement with the government's Irish policy as conducted by Lord Stanley; in the same month he was created earl of Durham and Viscount Lambton. His

advanced opinions, in the assertion of which he was too little disposed to consider the convictions of others, gradually alienated the more moderate of his late colleagues, such as Melbourne and Palmerston, and even Lord Grey often found his son-in-law intractable and self-assertive; but the growing hostility of the treacherous Brougham was mainly due to Durham's undoubted popularity in the country, where he was regarded by many, including J.S. Mill, as Grey's probable successor in the leadership of the Liberal party. Durham was at this time courted by the youthful Disraeli, who, when Melbourne became prime minister in succession to Grey in 1834, declared that the Whigs could not exist as a party without Lord Durham. Brougham's animosity became undisguised at the great banquet given to Lord Grey at Edinburgh in September 1834, where he made a venomous attack on Durham, repeated shortly afterwards at Salisbury, and anonymously in the *Edinburgh Review*. On the other hand the strength of Durham's position in the country was shown on the occasion of his visit to Glasgow in October to receive the freedom of the city, when a concourse of more than a hundred thousand persons assembled to hear him speak at Glasgow Green, and where he replied to Brougham's attacks at a great banquet held in his honour. Brougham had over-reached himself; and although Durham was no favourite with William IV., the king's disgust with the lord chancellor was one of the principal reasons for his summary dismissal of the Whig ministry in 1834. When Melbourne returned to power after Peel's short administration, Durham's radicalism and impatient temper excluded him from the cabinet; and again in 1837, on his return from an appointment as ambassador extraordinary in St Petersburg (1835-1837), when there was some idea of his joining the ministry, Lord John Russell wrote: "Everybody, after the experience we have had, must doubt whether there can be peace or harmony in a cabinet of which Lord Durham is a member."

In July 1837 he resisted the entreaty of Lord Melbourne that he should undertake the government of Canada, where the condition of affairs had become alarming; but a few months later, giving way to the urgent insistence of the prime minister who promised him "the firmest and most unflinching support" of the government, he accepted the post of governor-general and lord high commissioner, with the almost dictatorial powers conferred on him by an act passed in February 1838, by which the constitution of Lower Canada was suspended for two years. Having secured the services of Charles Buller (*q.v.*) as first secretary, and having with more doubtful wisdom appointed Thomas Turton and Edward Gibbon Wakefield (*q.v.*) to be his unofficial assistants, Durham arrived at Quebec on the 28th of May 1838. Papineau's rebellion had been quelled, but the French Canadians were sullen, the attitude of the United States equivocal, and the general situation dangerous, especially in the Lower Province where government was practically in abeyance. Durham at once issued a conciliatory proclamation. His next step was to dismiss the executive council of his predecessor and to appoint a new one consisting of men uncommitted to any existing faction, a step much criticized at home but generally commended on the spot. On the 28th of June, the day of Queen Victoria's coronation, he issued a proclamation of amnesty, from the benefit of which eight persons only of those who had taken part in the rebellion were excepted; while an accompanying ordinance provided for the transference of these eight excepted persons from Montreal to Bermuda, where they were to be imprisoned without trial. Papineau and fifteen other fugitives were forbidden on pain of death to return to Canada. In a letter of congratulation to the queen, Durham took credit for the clemency of his policy towards the rebels, and it was defended on the same ground by Charles Buller and by public opinion in the colony.

In England, however, as soon as these proceedings became known, Brougham seized the opportunity for venting his malice against both Durham and the ministry. He had already raised objections to the appointment of Turton and Wakefield; he now attacked the ordinance in the House of Lords, challenging the legality of the clause transporting prisoners to Bermuda, where Durham had no jurisdiction. Melbourne and his colleagues, with the honourable exception of Lord John Russell, made little effort to defend the public servant to whom they had promised "the most unflinching support"; and, although both the prime minister and the colonial secretary when first fully informed of the governor-general's proceedings had hastened to assure him of their "entire approval," three weeks later, cowed by Brougham's malignant invective, they disallowed the ordinance, and carried an Act of Indemnity the terms of which were insulting to Durham. The latter immediately resigned; but before returning to England he put himself in the wrong by issuing a proclamation in which he not only justified his own conduct in detail, but made public complaint of his grievances against the ministers of the Crown, a step that alienated much sympathy which his unjust treatment by the government would otherwise have called forth, though it was defended by men like Charles Buller and J.S. Mill. The usual official honours given to a returning plenipotentiary were not accorded to Durham on his arrival at Plymouth on the

30th of November 1838, but the populace received him with acclamation. He immediately set about preparing his memorable “Report on the Affairs of British North America,” which was laid before parliament on the 31st of January 1839. This report, one of the greatest state papers in the English language, laid down the principles, then unrecognized, which have guided British colonial policy ever since. It was not written or composed by Charles Buller, as Brougham was the first to suggest, and the credit for the statesmanship it exhibits is Lord Durham’s alone, though he warmly acknowledged the assistance he had derived from Buller, Wakefield and others in preparing the materials on which it was based. With regard to the future government of British North America, Durham had at first inclined towards a federation of all the colonies on that continent, and this aim, afterwards achieved, remained in his eyes an ideal to be striven for; but as a more immediately practical policy he advised the legislative union of Upper and Lower Canada, his avowed aim being to organize a single state in which the British inhabitants would be in a majority. He further urged the creation of an executive council responsible to the colonial legislature; he advised state-aided emigration on the broadest possible scale, and the formation of an intercolonial railway for the development of the whole country. Meantime Durham, who almost alone among the statesmen of his time saw the importance of imperial expansion, interested himself in the emigration schemes of Gibbon Wakefield (*q.v.*); he became chairman of the New Zealand Company, and was thus concerned in the enterprise which forestalled France in asserting sovereignty over the islands of New Zealand in September 1839. His health, however, had long been failing, and he died at Cowes on the 28th of July 1840, just five days after the royal assent had been given to the bill giving effect to his project for uniting Upper and Lower Canada.

Lord Durham filled a larger place in the eyes of his contemporaries than many statesmen who have been better remembered. He was in his lifetime regarded as a great popular leader; and his accession to supreme political power was for some years considered probable by many; his opinions were, however, too extreme to command the confidence of any considerable party in parliament before 1840. That Brougham hated him and Melbourne feared him, is a tribute to his abilities; and in the first Reform Act, of which he was the chief author, and in the famous *Report* on the principles of colonial policy, he left an indelible mark on English history. His personal defects of character did much to mar the success of a career, which, it must be remembered, terminated at the age of forty-eight. He was impatient, hot-tempered, hypersensitive to criticism, vain and prone to take offence at fancied slights; but he was also generous and unvindictive, and while personally ambitious his care for the public interest was genuine and untiring.

By his first wife Durham had three daughters; by his second, who was a lady of the bedchamber to Queen Victoria but resigned on her husband’s return from Canada, he had two sons and three daughters. The eldest son, Charles William, the “Master Lambton” of Sir Thomas Lawrence’s celebrated picture, died in 1831; the second, George Frederick d’Arcy (1828-1879), succeeded his father as 2nd earl of Durham. The latter’s son, John George Lambton (b. 1855), became 3rd earl in 1879.

See Stuart J. Reid, *Life and Letters of the First Earl of Durham* (2 vols., London, 1906); *The Greville Memoirs*, parts i. and ii. (London, 1874-1887); Richard, duke of Buckingham and Chandos, *Memoirs of the Courts and Cabinets of William IV. and Victoria* (2 vols., London, 1861); William Harris, *History of the Radical Party in Parliament* (London, 1885); Harriet Martineau, *History of the Thirty Years’ Peace* (4 vols., London, 1877); William Kingsford, *History of Canada*, vol. x. (10 vols., Toronto, 1887-1898), H.E. Egerton, *Short History of British Colonial Policy* (London, 1897).

(R. J. M.)

DURHAM, a northern county of England, bounded N. by Northumberland, E. by the North Sea, S. by Yorkshire, and W. by Westmorland and Cumberland. Its area is 1014.6 sq. m. It is wholly on the eastern slope, the western angle being occupied by spurs of the Pennine chain, exceeding 2300 ft. in height at some points on the Cumberland border. West of a line from Barnard Castle by Wolsingham to the neighbourhood of Consett the whole of the land, excepting narrow valleys, lies at elevations exceeding 1000 ft. This area represents roughly one quarter of the total. The principal rivers rising in these hills are the Derwent, tributary to the Tyne, forming part of the county boundary with Northumberland, the Wear and the

Tees, which forms almost the whole of the boundary with Westmorland and Yorkshire. The dales traversed by these rivers in their upper parts, though sufficiently strongly contrasted with the dark, barren moors surrounding them, yet partake of somewhat the same wild character. Lower down, however, are beautiful and fertile valleys, the main rivers flowing between steep, well-wooded banks; while the lesser streams of the coastal district have carved out denes or ravines on the steep flanks of which vegetation is luxuriant. Castle Eden Dene, 7 m. N.W. of Hartlepool, is famous for its beautiful trees and wild flowers. The coastward slope is fairly steep in the northern half of the county, but it is steady, and the coast itself has no striking scenic features, save where the action of the waves upon the magnesian limestone has separated great masses, leaving towering fragments standing, and fretting the face of the rock with caverns and arches. The cluster of rocks named the Black Halls, 6 m. N.W. of Hartlepool, best exhibits these features. Other natural phenomena include the Linnkirk caves near Stanhope in Weardale in which numerous fossils and bones, with evidence of habitation by man, have been discovered; and the Hell Kettles, S. of Darlington, near the junction of the Tees and the Skerne, four cavities filled with water, reputed to be unfathomable, and measuring from 80 to 120 ft. in diameter. The water is sulphurous.

Except in the moorlands of the west only a few scraps of the county have been left in their natural state; but these portions are of great interest to the student of natural history. The ballast-hills at Shields, Jarrow and Hartlepool, formed by the discharge of material from ships arriving in ballast from foreign countries, are overgrown with aliens, many of which are elsewhere unknown in this country. Nearly fifty different species have been found. Stockton was almost the last retreat in England of the native black rat. Of the former abundance of deer, wild ox and boar every peat bog testifies by its remains; the boar appears to have existed in the reign of Henry VIII., and records of red deer in the county may be traced down to the middle of the 18th century.

Geology.—The uplift of the Pennine hills causes nearly all the stratified rocks of Durham to dip towards the east or south-east. Thus the oldest rocks are to be found in the west, while in passing eastward younger rocks are continually met. In the hilly district of Weardale and Teesdale the Carboniferous Limestone series prevails; this is a succession of thick beds of limestone with intervening sandstones and shales. Some of the calcareous beds are highly fossiliferous; those at Frosterley near Stanhope are full of the remains of corals and the stone is polished as a marble. Much of the higher ground in the west is capped by Millstone Grit, as at Muggleswick and Walsingham commons. The outcrop of this formation broadens eastward until it is covered by the Durham coalfield which occupies the centre of the county from Newcastle and South Shields to Barnard Castle. The Coal Measures are about 2000 ft. thick and contain upwards of 100 seams of coal, including many of great importance—the Brockwell coal, Low Main coal and High Main coal are some of the well-known seams. Fireclays of great value are obtained from beneath many of the coal seams. Apart from the coals, the Coal Measures are made up of beds of sandstone and shale, the former called “post” and the latter “plate” by the local miners. Permian magnesian limestone succeeds the Coal Measures on the east, it reaches from the Tees to South Shields in a broad tract and occupies the coast between that town and Hartlepool. Remarkable concretionary forms are found in the Fulwell Quarries simulating honeycomb and coral structures. The stone is quarried at Marsden for the manufacture of Epsom salts; it is also used for lime-making and building. Fish remains are not uncommon in it. The sandstones and marls seen between the magnesian limestone and the Coal Measures at South Shields, Newbottle and several miles farther south are usually classed as Permian, but they may possibly prove to belong to the lower series. In the south-east corner of the county, by Darlington, Stockton and Seaton Carew, the low ground is made of Triassic rocks, red marls and sandstones with beds of gypsum and rock salt. Coal Measures undoubtedly underlie the Permian and Triassic strata. Normal faults traverse the district, mostly from east to west. Great dykes and sills of basalt lie in the Tees valley above Middleton and one, the Great Whin Sill, may be followed in an easterly direction for over 120 m. The Cockfield dyke and Little Whin Sill are similar intrusions of basalt. Lead mines have been extensively worked in the limestone districts of Weardale and Teesdale; the limestone itself is quarried on a large scale for fluxing in the ironworks. Glacial deposits obscure the older rocks over much of the county, they contain travelled stones from the Pennines and Cheviots. Submerged forests appear off the coast at West Hartlepool and other points. A small patch of Silurian occurs near Cronkley on the Tees; here slate pencils were formerly made.

Agriculture.—Near the river Tees, and in some places bordering on the other rivers, the soil is loam or a rich clay. At a farther distance from these rivers it is of inferior quality, with patches of gravel interspersed. The hills east of the line from Barnard Castle to Consett are covered with a dry loam, the fertility of which varies with its depth. West of the line the

summits and flanks of the hills are in great part waste moorland. Only some two-thirds of the total area of the county are under cultivation, and nearly two-thirds of this are in permanent pasture. There are also nearly 60,000 acres of hill-pasture. Of the diminished area under corn crops oats occupy more than one-half, and barley much exceeds wheat. Nearly two-thirds of the average under green crops are occupied by turnips, as many cattle are raised and have a long-standing reputation. The cows are especially good yielders of milk. The sheep are also highly esteemed, particularly the Teesdale breed. Those of Weardale are small, but their mutton is finely flavoured.

Mining.—The mountain limestone contains veins of lead ore and zinc ore. The beds of coal in the Coal Measures have long been a source of enormous wealth. The mines are among the most extensive and productive in the kingdom. At Sunderland the coal trade furnishes employment for hundreds of vessels, independently of the “keels” or lighters which convey the coal from the termini of the railways and tramways to the ships. The seams worked extend horizontally for many miles, and are from 20 to 100 fathoms beneath the surface. The Frosterley marble has been quarried for many centuries near Stanhope for decorative purposes, in Durham cathedral and elsewhere taking the place of Purbeck marble, while in modern houses it is used chiefly for chimney-pieces. Ironstone is worked in the neighbourhood of Whickham and elsewhere. Excellent slate is quarried at several places. The neighbourhood of Wolsingham abounds in fine millstones. The Newcastle grindstones are procured at Gateshead Fell; and firestone for building ovens, furnaces and the like is obtained in various parts of Durham, and exported in considerable quantity.

Other Industries.—The manufacturing industries are extensive, and all are founded upon the presence of coal, of which, moreover, large quantities are exported. The industrial and mining districts may be taken to lie almost wholly east of a line from Darlington through Bishop Auckland to Consett. Textile industries are not carried on to any great extent, but a large number of hands are employed in the manufacture of machines, appliances, conveyances, tools, &c. Of this manufacture the branch of shipbuilding stands first; the yards on the Tyne are second only to those on the Clyde, and the industry is prosecuted also at Sunderland, the Hartlepools and Stockton-on-Tees. The founding and conversion of metal stands next in importance; and other industries include the manufacture of paper, chemicals (chiefly on the Tyne), glass and bottles and earthenware (at Gateshead and Sunderland). The output of limestone is greater than that of any other county in the United Kingdom. As regards iron, the presence of the coal and the proximity of the Cleveland iron district of North Yorkshire enable the county to produce over one million tons of pig-iron annually, though the output of iron from within the county itself is inconsiderable. There is a large production of salt from brine. The sea fisheries of Sunderland and Hartlepool are valuable.

Communications.—Railway communication is provided entirely by the North Eastern company. The main line runs northward through Darlington, Durham and Gateshead, and there are a large number of branches through the mining and industrial districts, while the company also owns some of the docks. From Stockton to Darlington ran the railway engineered by George Stephenson and opened in 1825. The chief ports of Durham are Jarrow and South Shields on the Tyne, Sunderland at the mouth of the Wear, Seaham Harbour, Hartlepool East and West and Stockton-on-Tees.

Administration and Population.—Durham is one of the Counties Palatine, the others being Lancashire and Cheshire. The area of the ancient county is 649,352 acres, and that of the administrative county 649,244 acres. There were formerly three outlying portions of the county, known as North Durham (including Norhamshire and Islandshire), Bedlingtonshire and Crayke. These were attached to the county as having formed parcels of the ancient “patrimony of St Cuthbert,” of which the land between Tyne and Tees was the chief portion. The population in 1891 was 1,016,454 and in 1901 1,187,361. The birth-rate is much above, the death-rate also above, but the percentage of illegitimacy considerably below, the average. The county is divided into 4 wards. The following are municipal boroughs: Darlington (pop. 44,511), Durham, city (14,679), Gateshead, county borough (109,888), Hartlepool (22,723), Jarrow (34,295), South Shields, county borough (97,263), Stockton-on-Tees (51,478), Sunderland, county borough (146,077), West Hartlepool (62,627). The other urban districts may be distributed so as to indicate roughly the most populous and industrial districts:

1. In the Tyne district (where Gateshead, Jarrow and South Shields are the chief centres)—Blaydon (19,623), Felling (22,467), Hebburn (20,901), Ryton (8452), Whickham (12,852).

2. North-western district—Annfield Plain (12,481), Benfieldside (7457), Consett (9694), Leadgate (4657), Tanfield (8276), Stanley (13,554).

3. Durham and Bishop Auckland district (continuation south of the preceding)—Bishop Auckland (11,969), Brandon and Byshottles (15,573), Crook (11,471), Shildon and East Thickley (11,759), Spennymoor (16,665), Tow Law (4371), Willington (7887).

4. Durham and Sunderland district (N.E. of preceding)—Hetton (13,673), Houghton-le-Spring (7858), Seaham Harbour (10,163), Southwick-on-Wear (12,643). The township of Chester-le-Street (11,753) is also in this district.

The only other urban districts are Barnard Castle (4421) in Teesdale and Stanhope (1964) in Weardale. Durham is in the north-eastern circuit, and assizes are held at Durham. It has one court of quarter sessions and is divided into 16 petty sessional divisions. All the boroughs have separate commissions of the peace. The ancient county, which is in the diocese of Durham, excepting part of one parish in that of York, contains 243 ecclesiastical parishes wholly or in part. There are 288 civil parishes. The county is divided into eight parliamentary divisions, each returning one member—Jarrow, Chester-le-Street, Houghton-le-Spring, Mid, North-west, Barnard Castle, Bishop Auckland, South-east. It also includes the parliamentary borough of Sunderland, returning two members, and the boroughs of Darlington, Durham, Gateshead, Hartlepool, South Shields and Stockton-on-Tees, returning one member each. Among educational establishments there may be mentioned the university and the grammar school in the city of Durham, and the Roman Catholic college of Ushaw near Durham.

History.—After the death of Ida in the 6th century the kingdom of Northumbria was divided into the two states of Bernicia and Deira, separated from each other by the Tees, the latter including the district afterwards known as Durham. The post-conquest palatinate arose by a process of slow growth from the grant of land made by Egfrith to St Cuthbert on his election to the see of Lindisfarne in 684. On the transference of the see to Chester-le-Street in the 9th century, Guthred the Dane endowed it with the whole district between the Tyne and the Wear, stretching west as far as Watling Street, a grant confirmed by Alfred; and when in 995 the see was finally established at Durham, the endowment was again largely enriched by various donations. Durham continued, however, to form part of the earldom of Northumbria, and not until after the purchase of the earldom by Bishop Walcher in 1075 did the bishops begin to exercise regal rights in their territory. The term *palatinus* is applied to the bishop in 1293, and from the 13th century onwards the bishops frequently claim such rights in their lands as the king enjoys in his kingdom. At the time of the Conquest the bishop’s possessions included nearly all the district between the Tees and the Tyne, except Sadberge, and also the outlying districts of Bedlingtonshire, Norhamshire, Islandshire and Crayke, together with Hexhamshire, the city of Carlisle, and part of Teviotdale. Henry I. deprived the bishopric of the last three, but in compensation made over to it the vills of Burdon, Aycliffe and Carlton, hitherto included in the earldom of Northumberland. The wapentake of Sadberge also formed part of the earldom of Northumberland; it was purchased for the see by Bishop Pudsey in 1189, but continued an independent franchise, with a separate sheriff, coroner and court of pleas. In the 14th century Sadberge was included in Stockton ward and was itself divided into two wards. The division into the four wards of Chester-le-Street, Darlington, Easington and Stockton existed in the 13th century, each ward having its own coroner and a three-weekly court corresponding to the hundred court. The diocese was divided into the archdeaconries of Durham and Northumberland. The former is mentioned in 1072, and in 1291 included the deaneries of Chester-le-Street, Auckland, Lanchester and Darlington.

Until the 15th century the most important administrative officer in the palatinate was the steward. Other officers were the sheriff, the coroners, the chamberlain and the chancellor. The palatine exchequer was organized in the 12th century. The palatine assembly represented the whole county, and dealt chiefly with fiscal questions. The bishop’s council, consisting of the clergy, the sheriff and the barons, regulated the judicial affairs, and later produced the Chancery and the courts of Admiralty and Marshalsea. The prior of Durham ranked first among the bishop’s barons. He had his own court, and almost exclusive jurisdiction over his men. The *quo warranto* proceedings of 1293 exhibit twelve lords enjoying more or less extensive franchises under the bishop. The repeated efforts of the crown to check the powers of the palatinate bishops culminated in 1536 in the Act of Resumption, which deprived the bishop of the power to pardon offences against the law or to appoint judicial officers; indictments and legal processes were in future to run in the name of the king, and offences to be described as against the peace of the king, not against that of the bishop. In 1596 restrictions were imposed on the powers of the chancery, and in 1646 the palatinate was formally abolished. It was revived, however, after the Restoration, and continued with much the same power until the act of 1836, which provided that the

palatine jurisdiction should in future be vested in the crown. There were ten palatinate barons in the 12th century, the most important being the Hiltons of Hilton Castle, the Bulmers of Brancepeth, the Conyers of Sockburne, the Hansards of Evenwood, and the Lumleys of Lumley Castle. The Nevilles owned large estates in the county; Raby Castle, their principal seat, was built by John de Neville in 1377. Owing to its isolated position the palatinate took little part or interest in any of the great rebellions of the Norman and Plantagenet period. During the Wars of the Roses Henry VI. passed through Durham, and the novelty of a royal visit procured him an enthusiastic reception. On the outbreak of the Great Rebellion Durham inclined to support the cause of the parliament, and in 1640 the high sheriff of the palatinate guaranteed to supply the Scottish army with provisions during their stay in the county. In 1642 the earl of Newcastle formed the western counties into an association for the king's service, but in 1644 the palatinate was again overrun by the Scottish army, and after the battle of Marston Moor fell entirely into the hands of the parliament.

Durham has never possessed any manufactures of importance, and the economic history of the county centres round the growth of the mining industry, which employed almost the whole of the non-agricultural population. Stephen possessed a mine in Durham which he granted to Bishop Pudsey, and in the same century colliers are mentioned at Coundon, Bishopwearmouth and Sedgefield. Cockfield Fell was one of the earliest Landsale collieries in Durham. Edward III. issued an order allowing coal dug at Newcastle to be taken across the Tyne, and Richard II. granted to the inhabitants of Durham licence to export the produce of the mines, without paying dues to the corporation of Newcastle. Among other early industries lead-mining was carried on in the western part of the county, and mustard was extensively cultivated. Gateshead had a considerable tanning trade and shipbuilding was carried on at Jarrow.

In 1614 a bill was introduced in parliament for securing representation to the county and city of Durham and the borough of Barnard Castle. The movement was strongly opposed by the bishop, as an infringement of his palatinate rights, and the county was first summoned to return members to parliament in 1654. After the Restoration the county and city returned two members each. By the Reform Act of 1832 the county returned two members for two divisions, and the boroughs of Gateshead, South Shields and Sunderland acquired representation. The boroughs of Darlington, Stockton and Hartlepool returned one member each from 1868 until the Redistribution Act of 1885.

Antiquities.—To the Anglo-Saxon period are to be referred portions of the churches of Monk Wearmouth (Sunderland), Jarrow, Escomb near Bishop Auckland, and numerous sculptured crosses, two of which are *in situ* at Aycliffe. The best remains of the Norman period are to be found in Durham cathedral and in the castle, also in some few parish churches, as at Pittington and Norton near Stockton. Of the Early English period are the eastern portion of the cathedral, the fine churches of Darlington, Hartlepool, and St Andrew, Auckland, Sedgefield, and portions of a few other churches. The Decorated and Perpendicular periods are very scantily represented, on account, as is supposed, of the incessant wars between England and Scotland in the 14th and 15th centuries. The principal monastic remains, besides those surrounding Durham cathedral, are those of its subordinate house or "cell," Finchale Priory, beautifully situated by the Wear. The most interesting castles are those of Durham, Raby, Brancepeth and Barnard. There are ruins of castelets or peel-towers at Dalden, Ludworth and Langley Dale. The hospitals of Sherburn, Greatham and Kepyer, founded by early bishops of Durham, retain but few ancient features.

See W. Hutchinson, *History and Antiquities of the County Palatine of Durham* (3 vols., Newcastle, 1785-1794); R. Surtees, *History and Antiquities of the County Palatine of Durham* (4 vols., London, 1816-1840); B. Bartlet, *The Bishoprick Garland, Collection of Legends, Songs, Ballads ... of Durham* (London, 1834); J. Raine, *History and Antiquities of North Durham* (London, 1852); Perry and Herman, *Illustrations of the Medieval Antiquities of the County of Durham* (Oxford, 1867); G.T. Lapsley, *The County Palatine of Durham* (New York, &c., 1900); *Victoria County History, Durham*. See also the Surtees Society's Publications, and *Transactions of the Architectural Society of Durham and Northumberland*.

DURHAM, a city and municipal and parliamentary borough, and the county town of

Durham, England, 256 m. N. by W. from London, on the North Eastern railway. Pop. (1901) 14,679. The nucleus of the site is a narrow, bold peninsula formed by a bend of the river Wear, on which stand the cathedral and the castle. The city, however, extends both E. and W. of this.

The position of the cathedral of St Cuthbert, its west end rising immediately from the steep wooded bank of the river, is surpassed in beauty by no other English cathedral. Its foundation arose from the fact that here, after wandering far over the north of England, the monks of Lindisfarne rested with the body of St Cuthbert, which they had removed from its tomb in fear of Danish invaders. This was in 995. Soon afterwards a church was built by Bishop Ealdhune, and the see was removed hither from Lindisfarne. The peninsula was called Dunholme (Hill Island), which in Norman times was softened to Duresme, whence Durham. It is said that the monks of Lindisfarne, knowing the name of the place where they should find retreat, but ignorant of its situation, were guided hither by a woman searching for her cow, and the bas-relief of a cow on the north wall of the church commemorates this incident. In 1093 Ealdhune's church was rebuilt by Bishop Carilef, who changed the early establishment of married priests into a Benedictine abbey. The grand Norman building in which his designs were carried out remains with numerous additions. The stone-vaulting is particularly noteworthy. The choir contains the earliest work, but Carilef's eastern apses made way for the exquisite chapel of the Nine Altars, with its rose windows and beautiful carving, of late Early English workmanship. The nave is massive Norman, with round pillars ornamented with surface-carving of various patterns. The western towers are Norman with an Early English superstructure. The famous Galilee chapel, of the finest late Norman work, projects from the west end. The central tower is a lofty and graceful Perpendicular structure. Other details especially worthy of notice are the altar screen of *c.* 1380, and the curious semi-classical font-cover of the 17th century. There is a fine sanctuary-knocker on the north door. The cloisters are of the early part of the 15th century. The chapter-house is a modern restoration of the original Norman structure, a very fine example, which was destroyed by James Wyatt *c.* 1796, in the course of restoration of which much was ill-judged. The cathedral library, formerly the dormitory and refectories of the abbey, contains a number of curious and interesting printed books and MSS., and the portable altar, vestments and other relics found in St Cuthbert's grave. The Galilee contains the supposed remains of the Venerable Bede. The total length of the cathedral within is 496½ ft., the greatest height within (except the lantern) 74½ ft., and the height of the central tower 218 ft. The diocese of Durham covers the whole county excepting a small fragment, and also very small parts of Northumberland and Yorkshire.

Cathedral.

The naturally strong position selected for the resting-place of St Cuthbert's remains was possibly artificially fortified also, but it was not until 1072 that William the Conqueror caused the erection of a castle to the north of the cathedral across the neck of the peninsula. Of this there remain a beautiful crypt-chapel, and a few details incorporated in later work. Other interesting portions are the Norman gallery, with its fine arcade, Bishop Hatfield's hall of *c.* 1350, a reconstruction of the previous Norman one by Bishop Pudsey, and the Black Staircase of fine woodwork of the 17th century. The keep is a modern reconstruction. The castle, with the exception of some apartments used by the judges of assize, is appropriated to the uses of Durham University. On the peninsula are also the churches of St Mary le Bow in the North Bailey and St Mary the Less, the one a 17th-century building on a very ancient site, possibly that on which the first church rose over St Cuthbert's remains; the other possessing slight traces of Norman work, but almost completely modernized. Of other churches in Durham, the site of St Oswald is apparently pre-Norman, and the building contains Norman work of Bishop Pudsey, also some fine early 15th-century woodwork. St Margaret's and St Giles' churches show work of the same period, and the second of these has earlier portions.

Castle.

Several of the streets of Durham preserve an appearance of antiquity. Three of the bridges crossing the Wear are old, that of Framwellgate having been built in the 13th century and rebuilt in the 15th. In the neighbourhood of the city certain sites are of interest as adding detail to its history. To the south on Maiden Hill there is an encampment, occupied, if not constructed, by the Romans. Immediately W. of Durham is Neville's Cross, of which little remains. The battle of Neville's Cross was fought in 1346, resulting in the defeat of the invading Scots by the English under Lord Neville and Henry Percy. The Scots had encamped at Beaurepaire or Bearpark, where a few ruins mark the site of the county residence of the priors of Durham, which had suffered from previous invaders. On the Wear below Durham is the priory of Finchale (1196), of which there are considerable remains of Early English date and later, but in the main Decorated. The valley of the Wear in the neighbourhood of Durham is well wooded and picturesque, but there are numerous collieries on the uplands

above it, and the beauty of the county is marred.

University.

Among educational establishments in Durham the university stands first. The earliest connexion of the ecclesiastical foundation at Durham with an actual educational foundation was made by Prior Richard de Hoton (1290-1308), who erected a hall in Oxford for students from Durham, who had previously enjoyed no such provision. In 1380 Bishop Hatfield refounded this hall as Durham College, which became Trinity College (see OXFORD) on a new foundation (1555) when the possessions of the abbey of Durham had been surrendered in 1540, after which Durham College survived as a secular foundation only for a few years. Henry VIII. had the unfulfilled intention of founding a college in Durham, and a similar attempt failed in the time of the Commonwealth. In 1831 the scheme for a college was projected by the chapter; an act of 1832 specified the foundation as a university, and in Michaelmas 1833 its doors were opened. The first warden, and a prime mover in the scheme of foundation, was Archdeacon Charles Thorp (d. 1862). In 1837 the university received its charter from William IV. The dean and chapter of the cathedral are governors, and the bishop of Durham is visitor, but the active management is in the hands of the warden, senate and convocation. The system and life of the university are broadly similar to those of the greater universities of Oxford and Cambridge. Proctorial administration is carried on by two proctors annually nominated by the warden. Among the various residential divisions of the university may be mentioned Bishop Hatfield's Hall (1846), which, through its endowment, by means of such methods of economy as provision for all meals in common, permits men of limited means to become students. The degree for bachelor of arts is awarded after two public examinations, and may be taken in two years, with a total of six months' residence in each year. Special examinations are provided for candidates who seek honours, and those who obtain honours are admissible, after a certain period, to the mastership of arts without further examination, but in other cases further examination must have been taken, or an essay presented as a qualification for this degree. A theological course is provided for bachelors of the university, those who have passed a similar course elsewhere, or non-graduates aged nineteen who have passed a certain standard of examination. Instruction in civil engineering and mining was established as early as 1837, but was subsequently given up; and in 1871 the university and the North of England Institute of Mining and Mechanical Engineers co-operated to found the college of physical science at Newcastle-upon-Tyne, which provides such instruction and was incorporated with the university in 1874. The college of medicine at Newcastle has been in connexion with Durham University since 1852, and the professors there are professors of the university. In 1895 degrees for women were established, and in 1889 a hostel was opened for the accommodation of women, who may take any course of instruction except the theological. In 1889 musical degrees were instituted, and a professorship was founded in 1897. Among other subjects may be mentioned the granting of degrees in hygiene, and of diplomas in public health and education (see J.T. Fowler, *Durham University*, uniform with series of College Histories; London, 1904).

The grammar school was refounded by Henry VIII. out of the monastic school. It is a flourishing institution on the lines of the public schools, and has "king's scholarships" tenable in the school, and scholarships and exhibitions tenable at the universities. There are also a diocesan training college for schoolmasters and mistresses, and a high school for girls; and 4 m. W. of the city is the great Roman Catholic College of St Cuthbert, Ushaw, the representative of the old college at Douai. Here are preserved the magnificent natural history collections of Charles Waterton. Other buildings worthy of notice in Durham are the town-hall, a 16th-century building reconstructed in 1851, the police station, and the guildhall, the shire hall and county buildings, and the county hospital. There are ironworks and manufactures of hosiery, carpets and mustard in the city. The parliamentary borough returns one member. The corporation consists of a mayor, 6 aldermen and 18 councillors. Area, 1070 acres.

History of the City.—The foundation of the city followed on that of the church by the monks of Lindisfarne at the close of the 10th century. The history of the city is closely associated with that of the palatinate of Durham. The bishop of Durham among other privileges claimed a mint in the city, which, according to Boldon Book, rendered ten marks yearly until its value was reduced by that established by Henry II. at Newcastle, and it was temporarily abolished by the same king. The earliest charter, dated 1179 or 1180, is a grant of exemption from toll merchet and heriot made by Bishop Hugh Pudsey and confirmed by Pope Alexander. Before that time, however, the monks had a little borough at Elvet, which is divided from Durham by the Wear and afterwards became part of the city. In 1183 the city was at farm and rendered sixty marks. It was at first governed by a bailiff appointed by the bishop, but in 1565 Bishop Pilkington ordained that the government should consist, in

addition to the bailiff, of one alderman and twelve assistants, the latter to continue in office for life, and the former to be chosen every year from among their number. This form of government was replaced in 1602, under the charter of Bishop Matthew, by that of a mayor, 12 aldermen and 24 burgesses, the aldermen and burgesses forming a common council and electing a mayor every year from among the aldermen. This was confirmed by James I., but in 1684 the corporation were obliged to resign their charters to Bishop Crew, who granted them a new one, probably reserving to himself a right of veto on the election of the mayor and aldermen. At the time of the Revolution, however, Bishop Matthew's charter was revived, and continued to be the governing charter of the city until 1770, when, owing to dissensions as to the election of the common council, the number of aldermen was reduced to four and the charter became void. No mayor or aldermen were elected for ten years, but in 1780 Bishop Egerton, on the petition of the burgesses, granted them a new charter, which was practically a confirmation of that of 1602, and remained in force until the Municipal Reform Act of 1835. Being within the county palatine, the city of Durham sent no members to parliament, until, after several attempts beginning in 1614, it was enabled by an act of 1673 to return two members, which it continued to do until 1885, when by the Redistribution of Seats Act the number was reduced to one.

The corporation of Durham claim their fair and market rights under Bishop Pudsey's charter of 1179, confirmed in 1565, as a weekly market on Saturday and three yearly fairs on the feasts of St Cuthbert in September and March and on Whit Monday, each continuing for two days. In 1610 the bishop of Durham brought a suit in chancery against the burgesses and recovered from them the markets and fairs, which he afterwards leased to the corporation for a rent of £20 yearly until they were purchased from the Ecclesiastical Commissioners in 1860. Durham has never been noted for any particular trade; and the attempts to introduce the manufacture of cloth and wool in the 17th and 18th centuries were failures. The manufacture of carpets was begun in 1814.

DURHAM, a city and the county-seat of Durham county, North Carolina, U.S.A., in a township of the same name, 25 m. N.W. of Raleigh. Pop. (1900) 6679, of whom 2241 were negroes; (1910) 18,241; of the township (1900) 19,055; (1910) 27,606. Adjacent to the city and also in the township are East Durham and West Durham (both unincorporated), which industrially are virtually part of the city. Durham is served by the Southern, the Seaboard Air Line, the Norfolk & Western, and the Durham & Southern railways, the last a short line connecting at Apex and Dunn, N.C., respectively with the main line of the Seaboard and the Atlantic Coast Line railways. Durham is nearly surrounded by hills. Its streets are shaded by elms. The city is the seat of Trinity College (Methodist Episcopal, South), opened in 1851 as a normal college, growing out of an academy called Union Institute, which was established in the north-western part of Randolph county in 1838 and was incorporated in 1841. In 1852 the college was empowered to grant degrees; in 1856 it became the property of the North Carolina Conference of the Methodist Episcopal Church, South; in 1859 it received its present name; and in 1892 it was removed to a park near Durham, included in 1901 in the corporate limits of the city. A new charter was adopted in 1903, and a law school was organized in 1904. The college has received many gifts from the Duke family of Durham. In 1908 its endowment and property were valued at about $1,198,400, and the number of its students was 288. Although not officially connected with the college, the *South Atlantic Quarterly*, founded by a patriotic society of the college and published at Durham since 1902, is controlled and edited by members of the college faculty. The *North Carolina Journal of Education* and the *Papers of the Trinity College Historical Society* also are edited by members of the college faculty. The Trinity Park school is preparatory for the college. Near the city are Watts hospital (for whites) and Lincoln hospital (for negroes). Durham's chief economic interest is in the manufacture of granulated smoking tobacco, for which it became noted after the Civil War. In the city are two large factories and store houses of the American Tobacco Company. The tobacco industry was founded by W.T. Blackwell (1839-1904) and Washington Duke (1820-1905). The city also manufactures cigars, cigarettes, snuff, a fertilizer having tobacco dust as the base, cotton goods, lumber, window sashes, blinds, drugs and hosiery. Durham has a large trade with the surrounding region. The town of Durham was incorporated in 1869, and became the county-seat of the newly-erected county in 1881, and in 1899 was chartered as a city. Its growth is due to the tobacco and cotton industries. In the Bennett house, at Durham Station, near the city, General J.E.

Johnston surrendered on the 26th of April 1865 the Confederate army under his command to General W.T. Sherman.

DURIAN (Malay, *duri*, a thorn), the fruit of *Durio zibethinus*, a tree of the natural order Bombaceae, which attains a height of 70 or 80 ft., has oblong, tapering leaves, rounded at the base, and yellowish-green flowers, and bears a general resemblance to the elm. The durio is cultivated in Sumatra, Java, Celebes and the Moluccas, and northwards as far as Mindanao in the Philippines; also in the Malay Peninsula, in Tenasserim, on the Bay of Bengal, to 14° N. lat., and in Siam to the 13th and 14th parallels. The fruit is spherical, and 6 to 8 in. in diameter, approaching the size of a large coco-nut; it has a hard external husk or shell, and is completely armed with strong pyramidal tubercles, meeting one another at the base, and terminating in sharp thorny points; these sometimes inflict severe injuries on persons upon whom the fruit may chance to fall when ripe. On dividing the fruit at the joins of the carpels, where the spines arch a little, it is found to contain five oval cells, each filled with a cream-coloured, glutinous, smooth pulp, in which are embedded from one to five seeds about the size of chestnuts. The pulp and the seeds, which latter are eaten roasted, are the edible parts of the fruit. With regard to the taste of the pulp, A.R. Wallace remarks, “A rich butter-like custard, highly flavoured with almonds, gives the best idea of it, but intermingled with it come wafts of flavour that call to mind cream-cheese, onion-sauce, brown sherry and other incongruities;... it is neither acid, nor sweet, nor juicy, yet one feels the want of none of these qualities, for it is perfect as it is.” The fruit, especially when not fresh from the tree, has, notwithstanding, a most offensive smell, which has been compared to that of rotten onions or of putrid animal matter. The Dyaks of the Sarawak river in Borneo esteem the durian above all other fruit, eat it unripe both cooked and raw, and salt the pulp for use as a relish with rice.

See Linschoten, *Discours of Voyages*, bk. i. chap. 57, p. 102, fol. (London, 1598); Bickmore, *Travels in the East Indian Archipelago*, p. 91 (1868); Wallace, *The Malay Archipelago* (3rd ed., 1872).

DURIS, of Samos, Greek historian, according to his own account a descendant of Alcibiades, was born about 340 B.C. He must have been born and passed his early years in exile, since from 352 to 324 Samos was occupied by Athenian cleruchs, who had expelled the original inhabitants. He was a pupil of Theophrastus of Eresus, whom he met at Athens. When quite young, he obtained a prize for boxing at the Olympic games; a statue by Hippias was set up in commemoration of his victory (Pausanias vi. 13. 5). He was for some time despot of his native island. Duris was the author of a comprehensive historical work (Ἱστορίαι) on Hellenico-Macedonian history, from the battle of Leuctra (371) down to the death of Lysimachus (281), which was largely used by Diodorus Siculus. Other works by him included a life of Agathocles of Syracuse, the annals (ὧροι) of Samos chronologically arranged according to the lists of the priests of Hera, and a number of treatises on literary and artistic subjects. Ancient authorities do not appear to have held a very high opinion of his merits as a historian. Plutarch (*Pericles*, 28) expresses doubt as to his trustworthiness, Dionysius of Halicarnassus (*De compos. verborum*, 4) speaks disparagingly of his style, and Photius (*cod.* 176) regards the arrangement of his work as altogether faulty. Cicero (*ad Att.* vi. 1) accords him qualified praise as an industrious writer.

Fragments in C.W. Müller, *Frag. Hist. Graec.* ii. 446, where the passage of Pausanias referred to above and the date of Duris’s victory at Olympia are discussed.

DÜRKHEIM, a town of Germany, in the Bavarian Palatinate, near the foot of the Hardt Mountains, and at the entrance of the valley of the Isenach, 15 m. N.W. of Spires on the railway Monsheim-Neustadt. Pop. 6300. It possesses two Evangelical churches and one Roman Catholic, a town hall occupying the site of the castle of the princes of Leiningen-Hartenburg, an antiquarian and a scientific society, a public library and a high school. It is well known as a health resort, for the grape cure and for the baths of the brine springs of Philippshalle, in the neighbourhood, which not only supply the bathing establishment, but produce considerable quantities of marketable salt. There is a brisk trade in wine and oil; tobacco, glass and paper are manufactured.

As a dependency of the Benedictine abbey of Limburg, which was built and endowed by Conrad II., Dürkheim or Thurnigheim came into the possession of the counts of Leiningen, who in the 14th century made it the seat of a fortress, and enclosed it with wall and ditch. In the three following centuries it had its full share of the military vicissitudes of the Palatinate; but it was rebuilt after the French invasion of 1689, and greatly fostered by its counts in the beginning of next century. In 1794 its new castle was sacked by the French, and in 1849 it was the scene of a contest between the Prussians and the insurrectionists. The ruins of the Benedictine abbey of Limburg lie about 1 m. S.W. of the town; and in the neighbourhood rises the Kastanienberg, with the ancient rude stone fortification of the Heidenmauer or Heathen’s Wall.

DURLACH, a town of Germany, in the grand-duchy of Baden, 2½ m. by rail from Carlsruhe, with which it is connected by a canal and an avenue of poplars, on the left bank of the Pfinz, at the foot of the vineyard-covered Thurmberg, which is crowned by a watch-tower and to the summit of which a funicular railway ascends. Pop. (1905) 6207. It possesses a castle erected in 1565 and now used as barracks, an ancient town hall, a church with an excellent organ, a high-grade school, an orphan asylum, and in the market-place a statue of the margrave Charles II. It has manufactures of sewing-machines, brushes, chemicals, tobacco, beer, vinegar and chicory; and considerable trade in market produce.

Durlach was bestowed by the emperor Frederick II. on the margrave Hermann V. of Zähringen as an allodial possession, but afterwards came into the hands of Rudolph of Habsburg. It was chosen as his residence by the margrave Charles II. in 1565, and retained this distinction till the foundation of Carlsruhe in 1715, though it was almost totally destroyed by the French in 1688. In 1846 it was the seat of a congress of the Liberal party of the Baden parliament; and in 1849 it was the scene of an encounter between the Prussians and the insurgents. Reichenbach the mechanician, and E.L. Posselt (1763-1804) the historian, were natives of the town.

See Fecht, *Geschichte der Stadt Durlach* (Heidelberg, 1869).

DUROC, GÉRAUD CHRISTOPHE MICHEL, duc de Frioul (1772-1813), French general, was born at Pont à Mousson (Meurthe et Moselle) on the 25th of October 1772. The son of an officer, he was educated at the military schools of his native town and of Châlons. He was gazetted second lieutenant (artillery) in the 4th regiment in 1793, and advanced steadily in the service. Captain Duroc became aide-de-camp to Napoleon in 1796, and distinguished himself at Isonzo, Brenta and Gradisca in the Italian campaigns of 1796-97. He served in Egypt, and was seriously wounded at Aboukir. His devotion to Napoleon was rewarded by complete confidence. He became first aide-de-camp (1798), general of brigade (1800), and governor of the Tuileries. After the battle of Marengo he was sent on missions to Vienna, St Petersburg, Stockholm and Copenhagen. As grand marshal of the Tuileries he was responsible for the measures taken to secure Napoleon’s personal safety whether in France or on his campaigns, and he directed the minutest details of the imperial household. After Austerlitz, where he commanded the grenadiers in the absence of General Oudinot, he was employed in a series of important negotiations with Frederick William of Prussia, with the elector of Saxony (December 1806), in the incorporation of certain states in the

Confederation of the Rhine, and in the conclusion of the armistice of Znaim (July 1808). In 1808 he was created duke of Friuli, and after the Russian campaign he became senator (1813). He was in attendance on Napoleon at the battle of Bautzen (20th-21st May 1813) in Saxony, when he was mortally wounded, and died in a farmhouse near the battlefield on the 23rd of May. Napoleon bought the farm and erected a monument to his memory. Duroc was buried in the Invalides.

The chief source for Duroc's biography is the *Moniteur* (31st of May 1797, 24th of October 1798, 30th of May 1813, &c.).

DUROCHER, JOSEPH MARIE ELISABETH (1817-1858), French geologist, was born at Rennes on the 31st of May 1817. Educated at the École Polytechnique and École des Mines in Paris, he qualified as a mining engineer. Early in his career he travelled in the northern parts of Europe to study the metalliferous deposits, and he contributed the articles on geology, mineralogy, metallurgy and chemistry to Paul Gaimard's *Voyages de la Commission scientifique du nord, en Scandinavie, en Laponie, au Spitzberg et aux Feröe, pendant les années 1838-1840*. In 1844 he became professor of geology and mineralogy at Rennes. His attention was now largely directed to the study of the artificial production of minerals, to the metamorphism of rocks, and to the genesis of igneous rocks. In 1857 he published his famous *Essai de pétrologie comparée*, in which he expressed the view that the igneous rocks have been derived from two magmas which coexist beneath the solid crust, and are respectively acid and basic. He died at Rennes on the 3rd of December 1858.

DURRA (also written *dourah*, *dhura*, &c.; Arabic for a pearl, hence a grain of corn), a cereal grass, *Sorghum vulgare*, extensively cultivated in tropical and semi-tropical countries, where the grain, made into bread, forms an important article of diet. In non-Arabic-speaking countries it is known by other names, such as Indian or African millet, pearl millet, Guinea corn and Kaffir corn. In India it is called jowari, jowaree, jawari, &c. (Hindī, *jawārī*).

DURUY, JEAN VICTOR (1811-1894), French historian and statesman, was born in Paris on the 11th of September 1811. The son of a workman at the factory of the Gobelins, he was at first intended for his father's trade, but succeeded in passing brilliantly through the École Normale Supérieure, where he studied under Michelet, whom he accompanied as secretary in his travels through France, supplying for him at the École Normale in 1836, when only twenty-four. Ill-health forced him to resign, and poverty drove him to undertake that extensive series of school textbooks which first brought him into public notice. He devoted himself with ardour to secondary school education, holding his chair in the Collège Henri IV. at Paris for over a quarter of a century. Already known as a historian by his *Histoire des Romains et des peuples soumis à leur domination* (2 vols., 1843-1844), he was chosen by Napoleon III. to assist him in his life of Julius Caesar, and his abilities being thus brought under the emperor's notice, he was in 1863 appointed minister of education. In this position he displayed incessant activity, and a desire for broad and liberal reform which aroused the bitter hostility of the clerical party. Among his measures may be cited his organization of higher education ("enseignement spécial"), his foundation of the "conférences publiques," which have now become universal throughout France, and of a course of secondary education for girls by lay teachers, and his introduction of modern history and modern languages into the curriculum both of the *lycées* and of the colleges. He greatly improved the state of primary education in France, and proposed to make it compulsory and gratuitous, but was not supported in this project by the emperor. In the new cabinet that followed the elections of 1869, Duruy was replaced by Louis Olivier Bourbeau, and was

made a senator. After the fall of the Empire he took no part in politics, except for an unsuccessful candidature for the senate in 1876. From 1881 to 1886 he served as a member of the Conseil Supérieur de l'Instruction Publique. In 1884 he was elected to the Academy in succession to Mignet. He died in Paris on the 25th of November 1894.

As a historian Duruy aimed in his earlier works at a graphic and picturesque narrative which should make his subject popular. His fame, however, rests mainly on the revised edition of his Roman history, which appeared in a greatly enlarged form in 7 vols. under the title of *Histoire des Romains depuis les temps les plus reculés jusqu'à la mort de Théodose* (1879-1885), a really great work; a magnificent illustrated edition was published from 1879 to 1885 (English translation by W.J. Clarke, in 6 vols., 1883-1886). His *Histoire des Grecs*, similarly illustrated, appeared in 3 vols. from 1886 to 1891 (English translation in 4 vols., 1892). He was the editor, from its commencement in 1846, of the *Histoire universelle, publiée par une société de professeurs et de savants*, for which he himself wrote a "Histoire sainte d'après la Bible," "Histoire grecque," "Histoire romaine," "Histoire du moyen âge," "Histoire des temps modernes," and "Abrégé de l'histoire de France." His other works include *Atlas historique de la France accompagné d'un volume de texte* (1849); *Histoire de France de 1453 à 1815* (1856), of which an expanded and illustrated edition appeared as *Histoire de France depuis l'invasion des barbares dans la Gaule romaine jusqu'à nos jours* (1892); *Histoire populaire de la France* (1862-1863); *Histoire populaire contemporaine de la France* (1864-1866); *Causeries de voyage* (1864); and *Introduction générale à l'histoire de France* (1865).

A memoir by Ernest Lavisse appeared in 1895 under the title of Un Ministre: *Victor Duruy*. See also the notice by Jules Simon (1895), and *Portraits et souvenirs* by S. Monod (1897).

DU RYER, PIERRE (1606-1658), French dramatist, was born in Paris in 1606. His earlier comedies are in the loose style of Alexandre Hardy, but after the production of the *Cid* (1636) he copied the manner of Corneille, and produced his masterpiece *Scévole*, probably in 1644 (the date generally given is 1646). *Alcionée* (1638) was so popular that the abbé d'Aubignac knew it by heart, and Queen Christina is said to have had it read to her three times in one day. Du Ryer was a prolific dramatist. Among his other works may be mentioned *Saül* (printed 1642), and a comedy, *Les Vendanges de Suresnes* (1635 or 1636). He died in Paris on the 6th of November 1658.

DUSE, ELEANORA (1859-), Italian actress, was born at Vigevano of a family of actors, and made her first stage appearance at a very early age. The hardships incident to touring with travelling companies unfavourably affected her health, but by 1885 she was recognized at home as Italy's greatest actress, and this verdict was confirmed by that of all the leading cities of Europe and America. In 1893 she made her first appearances in New York and in London. For some years she was closely associated with the romanticist Gabriele d'Annunzio, and several of his plays, notably *La Città morta* (1898) and *Francesca da Rimini* (1901), provided her with important parts. But some of her great successes during the 'eighties and early 'nineties—the days of her chief triumphs—were in Italian versions of such plays as *La Dame aux camélias*, in which Sarah Bernhardt was already famous; and Madame Duse's reputation as an actress was founded less on her "creations" than on her magnificent individuality. In contrast to the great French actress she avoided all "make-up"; her art depended on intense naturalness rather than stage effect, sympathetic force and poignant intellectuality rather than the theatrical emotionalism of the French tradition. Her dramatic genius gave a new reading to the parts, and during these years the admirers of the two leading actresses of Europe practically constituted two rival schools of appreciation. Ill-health kept Madame Duse off the stage for some time; but though, after 1900, it was no longer possible for her to avoid "make-up," her rank among the great actresses of history remained indisputable.

See also a biography by L. Rasi (1901); A. Symons, *Studies in Seven Arts* (1906).

DUSSEK, JOHANN LUDWIG (1761-1812), Bohemian pianist and composer, was born at Czaslau, in Bohemia, on the 9th of February 1761. His father, Johann Joseph Dussek, a musician of high reputation, was organist and choir-master in the collegiate church of Czaslau, and several other members of the family were distinguished as organists. Under the careful instruction of his father he made such rapid progress that he appeared in public as a pianist at the age of six. A year or two later he was placed as a choir boy at the convent of Iglau, and he obtained his first instruction in counterpoint from Spenar, the choir-master. When his voice broke he entered on a course of general study, first at the Jesuits' college, and then at the university of Prague, where he took his bachelor's degree in philosophy. During his curriculum of two and a half years he had paid unremitting attention to the practice and study of his art, and had received further instruction in composition from a Benedictine monk. In 1779 he was for a short time organist in the church of St Rombaut at Mechlin. At the close of his engagement he proceeded to Holland, where he attained great distinction as a pianist, and was employed by the stadtholder as musical instructor to his family. While at the Hague he published his first works, several sonatas and concertos for the piano. He had already composed at the age of thirteen a solemn mass and several small oratorios. In 1783 he visited Hamburg, and placed himself under the instruction of Philip Emmanuel Bach. After spending two years in Lithuania in the service of Prince Radziwill, he went in 1786 to Paris, where he remained, with the exception of a short period spent at Milan, until the outbreak of the Revolution, enjoying the special patronage of Marie Antoinette and great popularity with the public. In Milan he appeared not only as a pianist but also as a player of the harmonica, an instrument which was much sought after on account of its novelty in those days. Towards the close of 1789 he removed to London, where on the 2nd of March 1790 he appeared at Salomon's concerts, and he married a daughter of Dominico Corri, herself a clever harpist and pianist. Unfortunately he was tempted by the large sale of his numerous compositions to open a music-publishing warehouse in partnership with Montague Corri, a relative of his wife. The result was injurious to his fame and disastrous to his fortune. Writing solely for the sake of sale, he composed many pieces that were quite unworthy of his genius; and, as he was entirely destitute of business capacity, bankruptcy was inevitable. In 1800 he was obliged to flee to Hamburg to escape the claims of his creditors. Some years later he was attached in the capacity of musician to the household of Prince Louis Ferdinand of Prussia, with whom he formed an intimate friendship. On the death of his patron in 1806 he passed into the service of the prince of Isenburg as court musician. In 1809 he went to Paris to fill a similar situation in the household of Prince Talleyrand, which he held until his death on the 20th of March 1812.

Dussek had an important influence on the development of pianoforte music. As a performer he was distinguished by the purity of his tone, the combined power and delicacy of his touch, and the facility of his execution. His sonatas, known as *The Invocation*, *The Farewell* and *The Harmonic Elegy*, though not equally sustained throughout, contain movements that have scarcely been surpassed for solemnity and beauty of idea.

See also Alexander W. Thayer's articles in Dwight's *Journal of Music* (Boston, 1861).

DÜSSELDORF, a town of Germany, in the Prussian Rhine province, on the right bank of the Rhine, 24 m. by rail N. by W. from Cologne. Pop. (1885) 115,190; (1895) 175,985; (1905) 252,630. Düsseldorf is one of the handsomest cities of western Germany. Its situation on the great mid-European waterway and as the junction of several main lines of railway has largely favoured its rapid growth and industrial development. It is the principal banking centre of the Westphalian coal and iron trade, and the favourite residence of the leading merchants of the lower Rhine.

The city consists of five main portions—the Altstadt, the original town with narrow, irregular streets; the Karlstadt, dating from 1787 and so called after the electoral prince Charles Theodore; the Neustadt, laid out between 1690 and 1716; and the Friedrichstadt and the Königstadt, of recent formation. In addition, the former villages of Pempelfort,

Oberbilk, Unterbilk, Flingern and Derendorf have been incorporated and form the outer suburbs of the town proper. On the south side the town has been completely metamorphosed by the removal of the Köln-Mindner and Bergisch-Maerkisch stations to a central station lying to the east. The site thus gained was converted into new boulevards, while the railway to Neuss and Aix-la-Chapelle was diverted through the suburb of Bilk and thence across the Rhine by an iron bridge. A road bridge (completed 1898, 2087 ft. long), replacing the old bridge of boats, carries the electric tram-line to Crefeld. The town, with the exception of the Altstadt, is regularly built, but within its area are numerous open grounds and public squares, which prevent the regularity of its plan degenerating into monotony: the market-place, with the colossal bronze statue of the elector John William, the parade, the Allee Strasse, the Königs Allee, and the Königs Platz may be specially mentioned. Of the thirty-seven churches, of which twenty-six are Roman Catholic, the most noticeable are:—St Andrew's, formerly the Jesuit and court church, with frescoes by J. Hübner (1806-1882), E. Deger (1809-1885), and H. Mücke (1806-1891), and the embalmed bodies of several Rhenish electors; St Lambert's, with a tower 180 ft. high and containing a monument to Duke William (d. 1592); Maximilians, with frescoes by J.A.N. Settegast (1813-1890); the Romanesque St Martin's, and the new Gothic church of St Mary. Besides the old ducal palace, laid in ruins by the French in 1794, but restored in 1846, the secular buildings comprise the government offices, the post-office in Italian style, the town hall on the market square, the law courts, the municipal music hall, the municipal theatre, the assembly hall of the Rhenish provincial diet, an Italian Renaissance edifice erected in 1879, the academy of art (1881; in pure Renaissance), the industrial art museum (1896), the historical museum, and the industrial art school. The town also possesses a library of 50,000 volumes, several high-grade schools, and is the seat of a great number of commercial and intellectual associations; but to nothing is it more indebted for its celebrity than to the Academy of Painting. This famous institution, originally founded by the elector Charles Theodore in 1767, was reorganized by King Frederick William III. in 1822, and has since attained a high degree of prosperity as a centre of artistic culture. From 1822 till 1826 it was under the direction of Cornelius, a native of the town, from 1826 to 1859 under Schadow, and from 1859 to 1864 under E. Bendemann (1811-1889). From Bendemann's resignation it continued in the hands of a body of curators till 1873, when Hermann Wislicenus (1825-1899) of Weimar was chosen director. The noble collection of paintings which formerly adorned the Düsseldorf gallery was removed to Munich in 1805, and has not since been restored; but there is no lack of artistic treasures in the town. The academy possesses 14,000 original drawings and sketches by the great masters, 24,000 engravings, and 248 water-colour copies of Italian originals; the municipal gallery contains valuable specimens of the local school; and the same is the case with the Schulte collection. The principal names are Cornelius, Lessing, the brothers Andreas and Oswald Achenbach, A. Baur (b. 1835), A. Tidemand (1814-1876), and L. Knaus (b. 1829). An annual exhibition is held under the auspices of the Art Union; and the members of the Artists' Society, or *Malkasten*, as they are called, have annual festivals and masquerades.

The town is embellished with many handsome monuments—notably a bronze statue of Cornelius, by A. Donndorf (b. 1835), an equestrian statue of the emperor William I. (1896), and a large bronze group in front of the assembly hall of the diet, representing the river Rhine and its chief tributaries. In the suburb of Bilk there are the Floragarten and Volksgarten, the astronomical observatory and the harbour. Extensive quays afford accommodation for vessels of deep draught, and the trade with the Dutch cities and with London has been thereby greatly enhanced. Within recent years Düsseldorf has made remarkable progress as an industrial centre. The first place is occupied by the iron industries, embracing foundries, furnaces, engineering and machine shops, &c. Next come cotton spinning and weaving, calico printing, yarn-spinning, dyeing and similar textile branches, besides a variety of other industries.

A little to the north of the town lies the village of Düsselthal, with Count von der Recke-Volmerstein's establishment for homeless children in the former Trappist monastery, and in the suburb of Pempelfort is the *Jägerhof*, the residence at one time of Prince Frederick of Prussia, and afterwards of the prince of Hohenzollern-Sigmaringen.

Düsseldorf, as the form of the name—the village on the Düssel—clearly indicates, was long a place of small consideration. In 1288 it was raised to the rank of a town by Count Adolf of Berg; from his successors it obtained various privileges, and in 1385 was chosen as their residence. After it had suffered greatly in the Thirty Years' War and the War of the Spanish Succession, it recovered its prosperity under the patronage of the electoral prince John William of the Palatinate, who dwelt in the castle for many years before his death in 1716. In 1795 the town, after a violent bombardment, was surrendered to the French; and after the

peace of Lunéville it was deprived of its fortifications. In 1805 it became the capital of the Napoleonic duchy of Berg; and in 1815 it passed with the duchy into Prussian possession. Among its celebrities are Johann Georg and Friedrich Heinrich Jacobi, Heinrich Heine, Varnhagen von Ense, Peter von Cornelius, Wilhelm Camphausen and Heinrich von Sybel.

See H. Ferber, *Historische Wanderung durch die alte Stadt Düsseldorf* (Düsseldorf, 1889-1890); Brandt, *Studien zur Wirtschafts- und Ver-waltungsgeschichte der Stadt Düsseldorf* (Düsseldorf, 1902); and local *Guide* by Bone.

DUSSERAH, or Dasara, a Hindu new-moon festival (sometimes called Maha-navami), held in October, and specially connected with ancestral worship. In the native states, such as Mysore, the rajas give public entertainments lasting for ten days, and especially invite European officials to the festivities, which include horse-racing, athletic contests, and banquets.

See J.A. Dubois, *Hindu Manners, Customs and Ceremonies*, p. 577.

DUST, earth or other matter reduced to fine dry and powdery particles; the word is Teutonic and appears in such various forms as the Dutch *duist*, Danish *dyst*, for the dust of flour or meal, and in the older forms *donst*; the modern German *Dunst*, vapour, probably preserves the original form and meaning, that of something which can be blown about by the wind.

Atmospheric Dust.—The presence of dust in the atmosphere has probably been known from the earliest ages, as prehistoric man must have had plenty of opportunities of noticing it lighting up the paths of sunbeams that penetrated his dark caves, yet it is only of recent years that it has become the subject of scientific observation. Formerly it was considered as simply matter in the wrong place, the presence of which had to be tolerated, but was supposed to serve no useful purpose in nature. It was not till the year 1880 that atmospheric dust came under scientific investigation, when it soon became evident that it played a most important part in nature, and that instead of being a nuisance to be got rid of, it added much to the comforts and pleasures of life.

The atmosphere is composed of a number of gases which have a nearly constant proportion to each other, and of varying proportions of water vapour. This vapour, constantly rising from land and sea, mixes with the gases in the atmosphere and so long as it remains vapour is invisible, but when it becomes cooled by the actual processes in nature the vapour tends to condense to the liquid condition and form cloud particles. Before 1880 it had always been assumed that when this condensation took place, the vapour molecules simply combined with each other to form the little globules of water, but J. Aitken showed that vapour molecules in the atmosphere do not combine with each other, that before condensation can take place there must be some solid or liquid nucleus on which the vapour molecules can combine, and that the dust in the atmosphere forms the nuclei on which the water-vapour molecules condense. Every cloud particle being grown round a dust nucleus thus has a dust particle in it. The presence of dust in the atmosphere allows the condensation of the vapour to take place whenever the air is cooled to the saturation point, and if there were no dust present the condensation would not take place till the air was cooled far below that point, and become highly supersaturated; and when it did take place the condensation would be violent and result in heavy rain-drops without the formation of what we know as cloud. This might be in some ways an advantage, but living in such supersaturated air would have many disadvantages. The supersaturated air having no dust to condense on would condense on our clothes, the inside and outside walls of our dwellings, and on every solid and liquid surface with which it came in contact.

Many of the dust particles in the atmosphere which form the nuclei of condensation are extremely minute, so small as to be beyond the powers of the microscope, and at first sight it might appear to be impossible to get any reliable information as to their numbers. But

Aitken, having shown that water vapour must have a nucleus to condense on, saw that this placed in our hands the means of counting the dust particles in our atmosphere, and in 1888 showed how it could be done. As water vapour in the air condenses on the dust particles present and forms cloud particles, he showed that all that would be necessary would be to cause the dust particles to become centres of condensation, when they would be so increased in size as to come within the range of an ordinary magnifying lens, and that by counting the cloud particles it would be possible to determine the number of dust particles. To carry out this idea the air under examination was placed in an air-tight receiver and saturated with water vapour. It was then expanded by an air-pump, and in this way cooled and condensation produced. The cloud particles so formed were allowed to fall on a micrometer and their number counted by the aid of an ordinary short-focussed lens. Certain precautions are necessary in carrying out this process. There must not be more than 500 particles per cubic centimetre of air, or all the particles will not form nuclei, and will not therefore be thrown down as cloud particles. When the number in the air tested exceeds that figure, the dusty air must be mixed with such a quantity of dustless air as will reduce the number below 500 per c.c., and the correct number in the air tested is obtained by allowing for the proportion of dustless air to dusty air, and for the expansion necessary for cooling.

Thousands of tests of the atmospheric dust have been made with this instrument at many places over the world, and in no part of it has dustless air been found; indeed it is very rare to find air with less than 100 particles per c.c., whilst in most country places the numbers rise to thousands, and in cities such as London and Paris the number may be as high as 100,000 to 150,000 per c.c.

The sources of dust particles in the atmosphere are numerous. In nature volcanoes supply a large quantity, and the meteoric matter constantly falling towards the earth and becoming dissipated by the intense heat produced by the friction of the atmosphere keep up a constant supply. Large quantities of dust are also raised from the surface of the earth by strong winds, from dusty roads and dry soil, and there is good reason for supposing that large quantities of sand are carried from the deserts by the wind and transported great distances, the sand, for instance, from the desert of Africa being carried to Europe. It is, however, to artificial causes that most of the dust is due. The burning of coal is the principal source of these, not only when the coal is burned with the production of smoke, but also when smokeless, and even when the coal is first converted into gas and burned in the most perfect forms of combustion. It results from this that while in the air over the uninhabited parts of the earth and over the ocean the number of particles is small, being principally produced by natural causes or carried from distant lands, they are much more numerous in inhabited areas, especially in those where much coal is burned. It is evident that if there were not some purifying process in nature there would be a tendency for the dust particles to increase in numbers, because though some dust particles may fall out of the air, many of them are so small they have but little tendency to settle, but by becoming centres of cloud particles they are carried downwards to the earth, and, further, these when showering down as rain tend to wash the others out of the atmosphere. We may therefore look on all uninhabited areas of the earth as purifying areas, and their purifying power seems to depend partly on their extent, but principally on their rainfall. The following table illustrates the purifying effect of some of these areas obtained from the results of hundreds of observations. The areas referred to are: (1) Mediterranean Sea, the observations being made on the south coast of France on the air blowing inshore; (2) the Alps, the observations being made on the Rigi Kulm; (3) the Highlands of Scotland, the observations being made at various places; and (4) the Atlantic Ocean, the observations being made on the west coast of Scotland, when the wind blew from the ocean.

	Mediterranean.	Alps.	Highlands.	Atlantic.
Mean of lowest	891	381	141	72
Mean of number	1611	892	552	338

These numbers are all low for atmospheric dust, much lower than in air from inhabited areas. On the Rigi Kulm, for instance, the number was sometimes over 10,000 per c.c. when the wind was from inhabited areas and the sun causing ascending currents; and at the same place as the Atlantic air was tested the numbers went up to over 5000 per c.c. when the wind blew from the inhabited areas of Scotland, though the distance to the nearest was over 60 m.

E.D. Fridlander[1] made many observations on the dust of the atmosphere with the same

instrument as employed by Aitken. In crossing the Atlantic he got no low numbers, always over 2000 per c.c., but in the Gulf of St Lawrence he got a reading as low as 280 per c.c. In crossing the Pacific the lowest obtained was 245, in the Indian Ocean 243, in the Arabian Sea 280, in the Red Sea 383, and in the Mediterranean 875 per c.c. He has also made observations in Switzerland. The lowest number obtained by him was in the air at the top of the Bieshorn, 13,600 ft. above sea-level, where the number was as low as 157 per c.c. Professor G. Melander[2] of Helsingfors studied the dust in the atmosphere. His observations were made in Switzerland, Biskra in the Sahara, Finland, the borders of Russia, and in Norway; but in none of these places were low numbers observed. The minimum numbers were over 300 per c.c., while maximum numbers in some cases went high.

Aitken when observing on the Rigi Kulm noticed during some conditions of weather that there was a daily variation in the number of particles, a maximum near the hottest part of the day and a minimum in the morning, and attributed the rise in the numbers to the impure air of the valleys rising on the sun-heated slopes of the mountain or driven up by the wind. A. Rankin, at the Ben Nevis observatory, also observed this daily variation, and his observations also indicate a yearly variation at that station, the numbers being highest in March, April and May. This may possibly be due to small rainfall in these months, but more probably to the fact that south-easterly winds blow more frequently during these months on Ben Nevis than at any other season, and these winds bring the impure air from the more densely inhabited parts of the country.

Without atmospheric dust not only would we not have the glorious cloud scenery we at present enjoy, but we should have no haze in the atmosphere, none of the atmospheric effects that delight the artist. The white haze, the blue haze, the tender sunset glows of red, orange and yellow, would all be absent, and the moment the sun dipped below the horizon the earth would be in darkness; no twilight, no after-glows, such as those given some years ago by the volcanic dust from Krakatoa; none of the poetry of eventide. Why, it may be asked, is this so? Simply because all these are due to matter suspended in the air, to dust. Water has no such effects as long as it is a vapour, and if it condensed without the presence of dust, the particles would be far too few to give any appreciable effect and too heavy to remain in suspension.

Turning now to the investigations on this point, Aitken has shown that there is no evidence to indicate that water vapour has any hazing effect, and shows that the haze is entirely due to dust, the density of the haze increasing with the increase in the number of dust particles in the air, and also with the *relative* humidity; but the humidity does not act as vapour, but by condensing on the dust and increasing the size of the particles, as it is not the amount of vapour present but the degree of saturation that affects the result; the more saturated the air, the more vapour is condensed on the particles, they so become larger and their hazing effect increased.

The relation of haze or transparency of the air to the number of dust particles was observed on five visits to the Rigi Kulm. The visibility of Hochgerrach, a mountain 70 m. distant from the Rigi, was used for estimating the amount of haze when the air was clear. During the visits this mountain was visible thirteen times, and it was never seen except when the number of particles was low. On eight occasions the mountain was only one-half to one-fifth hazed, and on these days the number of particles was as low as from 326 to 850 per c.c. It was seen five times when the number was from 950 to 2000 per c.c., but the mountain on these occasions was only just visible, and it was never seen when the number was a little over 2000 per c.c.

It has been pointed out that the relative humidity has an effect on the dust by increasing the size of the particles and so increasing the haze. It was therefore necessary in working out the dust and haze observations made at the different places to arrange all the observations in tables according to the wet-bulb depressions at the time. All the observations taken when the wet-bulb depression was between 2° and 4° were put in one table, all those when it was between 4° and 7° in another, and all those when it was over 7° in a third. It should be here noted that when the dust particles were counted and the wet and dry bulb observations taken, an estimate of the amount of haze was also made. This was done by estimating the amount of haze on a mountain at a known distance. Suppose the mountain to be 25 m. distant, and at the time to be one-half hazed, then the limit of visibility of the mountain under the conditions would be 50 m., and that was taken as the number representing the transparency of the atmosphere at the time. In the tables above referred to along with the number of particles was entered the limit of visibility at the time; when this was done it was at once seen that as the number of particles increased the limit of visibility decreased, as will be seen from the following short table of the Rigi Kulm observations when

the wet-bulb depression was between 2° and 4°.

Date.	Lowest Number.	Highest Number.	Mean Number.	Limit of Visibility in Miles.	C.
19th May 1891	428	690	559	150	83,850
22nd May 1889	434	850	642	100	64,200
16th May 1893	1225	2600	1912	40	77,480
					} Mean 75,176.

When the number of particles is multiplied by the limit of visibility in the tables a fairly constant number C. is obtained; see preceding table. All the observations taken at the different places were treated in a similar manner and the means of all the observations at the different humidities were obtained, and the following table gives the mean values of C. at the different wet-bulb depressions of all the observations made at the different places.

Wet-bulb depression	2° to 4°	4° to 7°	7° and over
Mean values of C.	76,058	105,545	141,148

From the above table it will be seen that as the dryness of the air increased it required a larger number of particles to produce a complete haze, nearly double the number being required when the wet-bulb depression was over 7° than when it was only from 2° to 4°. To find the number of particles required to produce a complete haze, that is, to render a mountain just invisible, all that is necessary is to multiply the above constant C. by 160,930, the number of centimetres in a mile, when this is done with the observations made in the West Highlands we get the numbers given in the following table:—

Wet-bulb depression.	Number of Particles to produce a complete haze.
2° to 4°	12,500,000,000
4° to 7°	17,100,000,000
7° to 10°	22,600,000,000

The above table gives the number of particles of atmospheric dust in a column of air having a section of one centimetre square, at the different humidities, required to produce a complete haze, that is, to make a distant object invisible, and is of course quite independent of the length of the column.

In making these dust and transparency observations three things were noted: 1st, the number of particles; 2nd, the humidity; and 3rd, the limit of visibility. From the results above given, it is evident that if we now know any two of these we can calculate the third. Suppose we know the limit of visibility and the humidity, then the number of particles can be calculated by the aid of the above tables.

To show the hazing effects of dust it is not, however, necessary to use a dust counter. Aitken for some years made observations on the haze in the air at Falkirk by simply noting the direction of the wind, the wet-bulb depression at the time, and the transparency of the air. Falkirk is favourably situated for such observations owing to the peculiar distribution of the population surrounding it. The whole area from west, north-west to north, is very thinly populated, while in all other directions it is densely populated. It was found that the air from the thinly inhabited parts, that is, the north-west quadrant, was nine times clearer than the air from other directions with the same wet-bulb depression, and that the density of the haze was directly proportional to the density of the population of the area from which the wind blew. These observations also showed that the transparency of the air increases with the dryness, being 3.7 times clearer when the wet-bulb depression is 8° than when it is only 2°, and that the air coming from the densely inhabited parts is about 10 times more hazed than if there were no inhabitants in the country.

(J. A.*)

1 "Atmospheric Dust Observations from various parts of the World," *Quart. Journ. Roy. Met. Soc.* (July 1896).

2 *La Condensation de la vapeur d'eau dans l'atmosphère* (Helsingfors, 1897).

DUTCH EAST INDIA COMPANY, THE (*Oostindische Vereenigde Maatschappij*), a body founded by a charter from the Netherlands states-general on the 20th of March 1602. It had a double purpose: first to regulate and protect the already considerable trade carried on by the Dutch in the Indian Ocean, and then to help in prosecuting the long war of independence against Spain and Portugal. Before the union between Portugal and Spain in 1580-81, the Dutch had been the chief carriers of eastern produce from Lisbon to northern Europe. When they were shut out from the Portuguese trade by the Spanish king they were driven to sail to the East in order to make good their loss. Unsuccessful attempts were made to find a route to the East by the north of Europe and Asia, which would have been free from interference from the Spaniards and Portuguese. It was only when these failed that the Dutch decided to intrude on the already well-known route by the Cape of Good Hope, and to fight their way to the Spice Islands of the Malay Archipelago. A first expedition, commanded by Cornelius Houtman, a merchant long resident at Lisbon, sailed on the 2nd of April 1595. It was provided with an itinerary or book of sailing instructions drawn up by Jan Huyghen van Linschoten,[1] a Dutchman who had visited Goa. The voyage was marked by many disasters and losses, but the survivors who reached the Texel on their return on the 20th of August 1597 brought back some valuable cargo, and a treaty made with the sultan of Bantam in Java.

These results were sufficient to encourage a great outburst of commercial adventure. Companies described as “Van Ferne”—that is, of the distant seas—were formed, and by 1602 from sixty to seventy Dutch vessels had sailed to Hindustan and the Indian Archipelago. On those distant seas the traders could neither be controlled nor protected by their native government. They fought among themselves as well as with the natives and the Portuguese, and their competition sent up prices in the eastern markets and brought them down at home. Largely at the suggestion of Jan van Oldenbarneveldt, and in full accordance with the economic principles of the time, the states-general decided to combine the existing separate companies into one united Dutch East India Company, which could discharge the functions of a government in those remote seas, prosecute the war with Spain and Portugal, and regulate the trade. A capital estimated variously at a little above and a little under 6,500,000 florins, was raised by national subscription in shares of 3000 florins. The independence of the states which constituted the United Netherlands was recognized by the creation of local boards at Amsterdam, in Zealand, at Delft and Rotterdam, Hoorn and Enkhuizen. The boards directed the trade of their own districts, and were responsible to one another, but not for one another as towards the public. A general directorate of 60 members was chosen by the local boards. Amsterdam was represented by 20 directors, Zealand by 12, Delft and Rotterdam by 14, and Hoorn and Enkhuizen also by 14. The real governing authority was the “Collegium,” or board of control of 17 members, of whom 16 were chosen from the general directorate in proportion to the share which each local branch had contributed to the capital or joint stock. Amsterdam, which subscribed a half, had eight representatives; Zealand, which found a quarter, had four; Delft and Rotterdam, Hoorn and Enkhuizen had two respectively, since each of the pairs had subscribed an eighth. The seventeenth member was nominated in succession by the other members of the United Netherlands. A committee of ten was established at the Hague to transact the business of the company with the states-general. The “collegium” of seventeen nominated the governors-general who were appointed after 1608. The charter, which was granted for twenty-one years, conferred great powers on the company. It was endowed with a monopoly of the trade with the East Indies, was allowed to import free from all custom dues, though required to pay 3% on exports, and charged with a rent to the states. It was authorized to maintain armed forces by sea and land, to erect forts and plant colonies, to make war or peace, to arrange treaties in the name of the stadtholder, since eastern potentates could not be expected to understand what was meant by the states-general, and to coin money. It had full administrative, judicial and legislative authority over the whole of the sphere of operations, which extended from the west of the Straits of Magellan westward to the Cape of Good Hope.

The history of the Dutch East India Company from its formation in 1602 until its dissolution in 1798 is filled, until the close of the 17th century, with wars and diplomatic relations. Its headquarters were early fixed at Batavia in Java. But it extended its operations far and wide. It had to deal diplomatically with China and Japan; to conquer its footing in the Malay Archipelago and in Ceylon; to engage in rivalry with Portuguese and English; to

establish posts and factories at the Cape, in the Persian Gulf, on the coasts of Malabar and Coromandel and in Bengal. Only the main dates of its progress can be mentioned here. By 1619 it had founded its capital in Batavia in Java on the ruins of the native town of Jacatra. It expelled the Portuguese from Ceylon between 1638 and 1658, and from Malacca in 1641. Its establishment at the Cape of Good Hope, which was its only colony in the strict sense, began in 1652. A treaty with the native princes established its power in Sumatra in 1667. The flourishing age of the company dates from 1605 and lasted till the closing years of the century. When at the summit of its prosperity in 1669 it possessed 150 trading ships, 40 ships of war, 10,000 soldiers, and paid a dividend of 40%. In the last years of the 17th century its fortunes began to decline. Its decadence was due to a variety of causes. The rigid monopoly it enforced wherever it had the power provoked the anger of rivals. When Pieter Both, the first governor-general, was sent out in 1608, his instructions from the Board of Control were to see that Holland had the entire monopoly of the trade with the East Indies, and that no other nation had any share whatever. The pursuit of this policy led the company into violent hostility with the English, who were also opening a trade with the East. Between 1613 and 1632 the Dutch drove the English from the Spice Islands and the Malay Archipelago almost entirely. The English were reduced to a precarious footing at Bantam in Java. One incident of this conflict, the torture and judicial murder of the English factors at Amboyna in 1623, caused bitter hostility in England. The success of the company in the Malay Archipelago was counterbalanced by losses elsewhere. It had in all eight governments: Amboyna, Banda, Ternate, Macassar, Malacca, Ceylon, Cape of Good Hope and Java. Commissioners were placed in charge of its factories or trading posts in Bengal, on the Coromandel coast, at Surat, and at Gambroon (or Bunder Abbas) in the Persian Gulf, and in Siam. Its trade was divided into the “grand trade” between Europe and the East, which was conducted in convoys sailing from and returning to Amsterdam; and the “Indies to Indies” or coasting trade between its possessions and native ports.

The rivalry and the hostilities of French and English gradually drove the Dutch from the mainland of Asia and from Ceylon. The company suffered severely in the War of American Independence. But it extended and strengthened its hold on the great islands of the Malay Archipelago. The increase of its political and military burdens destroyed its profits. In the early 18th century it was already embarrassed, and was bankrupt when it was dissolved in 1798, though its credit remained unshaken, largely, if its enemies are to be believed, because it concealed the truth and published false accounts. In the later stages of its history its revenue was no longer derived from trade, but from forced contributions levied on its 717
subjects. At home, the directors, who were accused of nepotism and corruption, became unpopular at an early date. The company was subject to increasing demands and ever more severe regulation on the successive renewals of its charters at intervals of twenty-one years. The immediate causes of its destruction were the conquest of Holland by the French revolutionary armies, the fall of the government of the stadtholder, and the establishment of the Batavian Republic in 1798.

AUTHORITIES.—The great original work on the history of the Dutch East India Company is the monumental *Beschryving van oud en niew oost Indien* (Dordrecht and Amsterdam, 1724), by François Valentyn, in 8 vols., folio, profusely illustrated. Two modern works of the highest value are: J.K.J. de Jonge, *De Opkomst van het Nederlandsch Gezag in oost Indien* (The Hague and Amsterdam, 1862-1888), in 13 vols.; J.J. Meinsma, *Geschiedenis van de Nederlandsche oost-Indische Bezittingen* (3 vols., Delft and the Hague, 1872-1875). See also John Crawford, *History of the Indian Archipelago* (Edinburgh, 1820); Clive Day, *The Dutch in Java* (New York, 1904); Sir W.W. Hunter, *A History of British India* (London, 1899); and Pierre Bonnassieux, *Les Grandes Compagnies de commerce* (Paris, 1892).

1 Linschoten was born at Haarlem in or about 1563. He started his travels at the age of sixteen and, after some years in Spain, went with the Portuguese East India fleet to Goa, where he arrived in September 1583, returning in 1589. In 1594 and 1595 he took part in the Dutch Arctic voyages, and in 1598 settled at Enkhuizen, where he died on the 8th of February 1611. His *Navigatio ac itinerarium* (1595-1596) is a compilation based partly on his own experiences, partly on those of other travellers with whom he came in contact. It was translated into English and German in 1598; two Latin versions appeared in 1599 and a French translation in 1610. The famous English version was reprinted for the Hakluyt Society in 1885. Large selections, with an Introduction, are published in C. Raymond Beazley’s *Voyages and Travels*, vol. ii. (*English Garner*, London, 1903).

DUTCH LANGUAGE. When the Romans reached the territory now forming the kingdom of Holland, they found a number of tribes south of the Rhine, who—though here and there mixed with Germans—belonged to a non-Germanic race, and who, closely related to the Belgian tribes, spoke a language belonging to the Celtic group. Possibly they were also situated on the more elevated grounds north of the Rhine, at least vestiges of them may still be traced. We do not know anything about their being mixed with or subdued by the intruding German tribes. We can only guess it.

At that time the fertile delta of the Rhine was already occupied by German tribes who in language and national customs must have stood in some relation to the tribes living along the Rhine in Germany, later called Franks. The consonantal system of their language was in accordance with the other Low-German dialects, which is proved by the remains we have in the glosses of the Lex Salica, for the greater part handed down in a bad condition. These tribes, whom we shall take together under the name of Low-Franks—the Romans called them Batavi, Caninefates, Chamavi, &c.—were spread over Gelderland, Overysel, part of Utrecht and South Holland, and the south-western part of North Holland. When in the sixth century allied tribes from the present north Germany, who named themselves Saxons after one of those tribes living alongside the Elbe, conquered the territory occupied by the Franks a great many retreated from the eastern parts, and then the Franks, who already in the time of the Romans had begun to invade into the territory of the Belgian tribes, continued their wars of conquest in a southward direction and subdued all the land south of the branch of the Rhine that is called the “Waal.” Since that time the Frankish dialect came there, and the Celtic-speaking population of the south suffered its language to be entirely supplanted by that of the conquerors. Hence in the formerly Celtic-speaking parts of Brabant and Limburg we find but Frankish dialects, somewhat corresponding with those of part of Gelderland, Utrecht and Holland. The deviation that is perceptible concerns less the use of words than the way of laying the stress.

In part of Gelderland, east of the Ysel, and in Overysel, the older Frankish dialect (of the Salian Franks) was given up and the language of the victorious Saxons was assumed, perhaps here and there strongly mixed with the older language. The language which is spoken there, and farther to the north through Drente as far as in some parts of Groningen, is called Saxon. Indeed, these dialects correspond in a great many respects with the language of the Old-Saxon poem Heliand (*q.v.*) and with the North-German dialects—from the latter they deviate considerably in some respects. The chief point of conformity is the formation of the plural of the verb: *wi loopt, wi gåt*, *Heliand*: *wi hlopad, wi gangad*, which are *wèi loopen, wèi gaan* in the Frankish dialects. In the vocal system, too, there are peculiar differences.

In the north of Holland there lived, and still lives alongside the coast, a tribe with which Caesar did not come in contact. The Frisians were spread over a large distance along the shore as far as the mouth of the Elbe, and in the west at least as far as the country north of Haarlem. In the time of the Romans they cannot have extended their power farther southward. Later, however, this seems to have been the case. Maerlant and Melis Stoke (13th century) tell us that time was when their power extended even over part of Flanders. About the year 339 they were repelled as far as the mouth of the Meuse, and ever afterwards the Franks, led by their counts, pushed their dominion back farther and farther to the north, as far as the country north of Alkmaar. After all, a great many Frisian peculiarities may be perceived in the language of the country people of the parts which were once in their power.

To begin with the south: in Zeeland the population has quite given up the former probably non-Germanic language. Frisian influence is still perceptible in many words and expressions, but for all that the language has lost the Frisian character and assumed the nature of the neighbouring Frankish dialects in the present Belgium and Brabant. If it was then influenced by the south, later it was influenced rather by the language of Holland. Farther to the north Frisian elements may be perceived in Holland at the seashore and also in many respects still in North Holland. The real Frisian tongue has only been preserved in the province of Friesland, where intrusion of the dialect spoken in Holland is already perceptible since the 13th century. With the Frisian tongue this formed a new dialect in the towns, the “Stadfriesch,” whereas the country people in the villages and the peasants have preserved the old Frisian tongue as “Boerenfriesch.”

The more eastward dialects of Frisian in Groningen, the eastern part of Friesland (*Stellingawerf*) and West-Drente were first strongly mixed with Saxon; at the same time we find a strong mixture of Frisian and Saxo-Frankish east of the Zuider Zee. Later the Saxon dialect of the town of Groningen, once the capital of East-Drente, became prominent over

the whole province.

In all parts, however, the language of Holland, mixed with and changed by the living speech, is getting more and more influence, issuing from the towns and large villages.

This influence over the whole country began at the opening of the 17th century, and, in connexion with the prevalent written language, gradually produced a colloquial language, deviating from the written language as well as from the native idioms of the country, though assuming elements from both. In this colloquial speech the idiom of Holland forms the basis, whereas the written language formed itself on quite different principles.

If we compare the colloquial speech and the native idiom with the written language, we find remarkable differences, which are caused by the origin of the Dutch written language.

The first to write in any of the idioms of the Dutch language, if we leave apart the old version of the psalms in East Low Frankish, was an inhabitant of the neighbourhood of Maastricht, Henrik van Veldeke, who wrote a Servatius legend and an *Aeneid*; the latter we only know by a Mid High German copy. This dialect deviates from the western dialects and has likeness to the Middle-Frankish. His work had no influence whatever on the written language.

In the west of Belgium, in the districts of Antwerp, East and West Flanders and Brabant, great prosperity and strong development of commerce caused a vivid intellectual life. No wonder we find there the first writings in the West-Low-Frankish native idiom. This language spread over the neighbouring districts. At least in 1254 we find the same language used in the statute (*i.e.* privilege) of Middelburg.

In those parts a great deal was written in poetry and prose, and the writings in this language are known under the name of Middle-Dutch literature.

If originally the south took the lead in all departments, later the north gradually surpasses the south, and elements from the northern native idiom begin to intrude into the written language.

North of the Meuse and the Rhine little was written as yet in the 13th century. Not until about 1300 does literary life begin to develop here (Melis Stoke's *Rijmcronijk*), and these writings were written in the language of the south with slight deviations here and there. 718
Chancery and clergy had taken a written language to the north, deviating considerably from the native idiom in vogue there, which belonged to the Frisio-Frankish idioms. So this written language gradually spread over the west of the Netherlands and Belgium. The east of the Netherlands agreed in its chancery style more with the districts of Low Germany.

There was a great difference between the written language and the dialect spoken on the banks of the Y. This becomes quite conspicuous if we compare what Roemer Visscher, Coster, Bredero borrow from their native idiom with the language of Huygens or Cats, in the latter of which the southern elements predominate, mixed with the dialects of Zeeland and Holland. Vondel, too, in his first period was influenced by the idiom of Brabant. Only after 1625 does he get on more familiar terms with the Amsterdam dialect. In the various editions of his poems it may be seen how not only loan-words, but also words belonging to the southern idiom, are gradually replaced by other words, belonging to the vocabulary of North Holland, and still to be heard.

The written language passed from the south to the north, and, considerably changed at Amsterdam, was also assumed in the other provinces in the 17th century, after the Union of Utrecht. In the north, in Groningen and Friesland, the official writings and laws were still noted down in a Frisian or Saxo-Frisian idiom as late as the 15th and 16th centuries. When the contact with Holland grew stronger, and the government officials ever and again came in contact with Holland, chancery, too, gradually assumed the Holland idiom. The same took place in the eastern provinces.

This, however, did not yet make the written language popular, which did not happen before the population of the Dutch provinces got its *Statenbÿbel*, the well-known authorized version of the Bible, made at Dordrecht between 1626 and 1637.

By the frequent use of this so-called *Statenvertaling* the language of Holland obtained its vogue in all provinces on the point of religion, and many expressions, borrowed from that Bible, were preserved in the native idiom.

By the remarkable vicissitudes of these parts from the earliest time up to the moment when Holland became an independent kingdom, during which alternately German elements

under the Bavarian counts and French influences under the Burgundian princes were predominant, and also later in the 16th and 17th centuries elements from these languages were mixed with the language in common use. Moreover, various words passed from the eastern languages into Dutch by the colonial and commercial connexions, while at the same time many words were borrowed from Latin, the language of the learned people, especially in the 16th century, and from French, under the influence of the poetic clubs of the 17th and 18th centuries. In the time of the rhetoricians, in the 16th century, and of Coornhert, as well as in the days of Bredero, Hooft and Vondel, we repeatedly find opposition against these foreign words, often successful, so that in 1650 Vondel could say: "*Onze spraak is sedert weinige jaren herwaart van bastaard-woorden en onduitsch allengs geschuimt.*"[1] Some people, *e.g.* Hooft, went even so far as to make very clumsy versions of Latin and French bastard words, handed down of old.

Under the influence of the club "*Nil Volentibus Arduum*" and the predominant literary clubs of the 18th century, people became inclined towards expressing their thoughts as much as possible in pure Dutch. Therefore a large number of rules were given, with respect to prose as well as to poetry, in consequence of which the written language grew very stiff in choice of words and forms, and remains so till the latter half of the 19th century. The obtrusion of the French language during the reign of Napoleon had no effect. But the subsequent union of Holland and Belgium strengthened the French element, especially in the higher ranks of society. King William I. had tried to make Dutch more popular in Belgium by a general teaching of the Dutch language. When north and south were separated, the French became predominant in the south. Only in the Flemish provinces of Belgium the people tried to preserve the native idiom and to do away with French words. These endeavours, called "De Vlaamsche beweging", begun by F. v. Willems, Heremans and others in the south, were supported in the north by Professor de Vries at Leiden. In order to get a pure Dutch language, the idea of composing a general Dutch dictionary was introduced. M. de Vries and his partner L. te Winkel, however, did not begin this task before having given a new formulation of the rules for spelling. These rules, deviating in many respects from the spelling then in vogue, introduced by Siegenbeek in 1806, have been predominant up to the present moment. Since 1891 Dr R.A. Kollewyn and Dr F. Buitenrust Hettema have been engaged in trying to bring about a simplification in the spelling. As this simplification is not generally considered efficient, their principles are not yet generally adopted; see for instance C.H. den Hertog, *Waarom onaannemelyk?* (Groningen, 1893).

Excepting Belgium (Flanders, Antwerp, Brabant) the Dutch language is heard outside Holland in Dutch East India and in the West Indies. In East India pure Dutch has been preserved, though some Javanese and Malay bastard words may have slipped in by the habit of speaking to the population in the Malay tongue or in the native idiom. Hence no Indo-Dutch was formed there. This is different in the West Indies, where a great number of negro words and English words as well as English syntactical constructions have slipped in.

In the 17th century a number of Dutchmen, for the greater part from Holland and Zeeland, under Jan van Riebeek, had settled in South Africa, in Cape Town, where the Dutch navigation called into being a Dutch port. In course of time they were joined there by French emigrants (most of them Huguenots who left their country about 1688 and joined with other Huguenots from Holland in assuming the Dutch language), perhaps also by Portuguese and by Malay people, who, together with the English who settled there and after 1820 became numerous in Cape Colony, mixed some peculiarities of their language with the Dutch idioms. Thus in the first half of the 18th century the language arose which is now called the South African Dutch. Since 1880 the present Dutch language has became more frequently used in official writings, though with certain adaptations agreeably to the native idiom.

In order to offer an example of the Middle-Dutch language beside the present language, we give here a single strophe from Maerlant's *Wapene Martyn*, with a metrical translation in modern Dutch from the pen of Nikolaas Beets (1880).

God, diet al bi redene doet,
Gaf dat wandel ertsche goet
Der menschelt gemene,
Dattere mede ware gevoet,
Ende gecleet, ende gescoet,
Ende leven soude rene.
Nu es giericheit so verwoet,
Dat elc settet sinen moet
Om al te hebbene allene.

God, die het al met wijsheid doet,
Gaf dit verganklijk aardsche goed
Den menschen in't gemeen,
Op dat zij zouden zijn gevoed,
Het lijf gekleed, geschoeid de voet
En leven rein van zeen.
Maar zie nu hoe de hebzucht woedt
Dat iedereen in arren moed
't Al hebben wil alleen'

Hieromme stortmen menschenbloet, Hieromme stichtmen metter spoet Borge ende hoge stene Menegen te wene.	Hierom vergiet men menschenbloed En bouwt met roekeloozen spoed Burchtsloten, zwaar van steen, Tot smart van menigeen.

A Survey of the Sounds used in Dutch.—The Consonants. As regards the consonants, Dutch in the main does not differ from the other Low German languages. The explosive *g* and the *th* are wanting. Instead of the former there is a *g* with "fricative" pronunciation, and as in High German the *th* has passed over into *d*.

The final consonants in Middle Dutch are sharpened, and the sharp sounds are graphically represented; in Modern Dutch, on the other hand, the historical development of the language being more distinctly kept in view, and the agreement observed with the inflexional forms, the soft consonant is written more frequently than it is sounded; thus we have Middle Dutch *dach*, Modern Dutch *dag*, in analogy with the plural *dagen*.

The gutturals are *g*, *k*, *ch* and *h*.

G is the soft spirant, not used in English. In Middle Dutch this letter was also indicated by *gh*. *K* was pronounced like English *k*. In Middle Dutch *c* was sometimes used instead of *k*; now this is no longer done.

Ch (pronounced as German *ch* without the *i*-sound, not as English *ch*) loses its sound when combined with *s* to *sch* at the end of a syllable, for instance, *vleesch*, but the *s*-sound is not purely dental as in *dans*. As an initial consonant *sch* is nearly pronounced as *sg* (*schip*, English ship); only in Frisian and Saxon dialects the old consonant *sk* in *skip*, *skool* is retained.

H has the same pronunciation as in English.

The dentals are *d* and *t*. The *d* is formed by placing the point of the tongue against the upper teeth. At the end of a word *d* is sharpened into *t*, but written *d*, for instance, *goed*, pronounced *gut*. In the idiom of the east of the Netherlands final *d* is preserved. When between two vowels after *oe* (Engl. *ô* in do), *ō*, or *ui*, *d* is not pronounced, though it is written. After it has been left out, a *j*-sound has developed between the two vowels, so, for instance, *goede* became first *goe:e* and then *goeje*. Thus it is pronounced, though it is still spelled *goede*. After *ou d* disappeared and *ou* became *ouw*, for instance *koude* > *kouw*.

T has the same pronunciation as in English. In some dialects final *t* is dropped, for instance, *heef* for *heeft*, *nie* for *niet*.

S has the pronunciation of English *s* in sound, *z* that of English *z* in hazel; only in *zestig* and *zeventig z* has the pronunciation of *s*.

The labials are *b*, *f*, *v*, *p*.

At the beginning and in the body of a word *b* has the same sound as in English. At the end of a word, when shortened from *bb*, followed by a vowel, it became *p* in the pronunciation, so older *krabbe* became *krabb*, *krab* (the present spelling), which is now pronounced *krap*.

F has the same pronunciation as English *f*. In many cases older initial *f* passed into *v*, hence most words which have *f* in English have initial *v* in Dutch, for instance *vader*, *vol*, *vechten*.

This *v*, initial and between vowels, has the pronunciation of English *v* in lover. Dutch *p* is the same as English *p*, also the liquids and nasals.

The *w* in Dutch is mostly labiodental; in the eastern parts before vowels bilabial pronunciation is heard.

Vowels.—A has in open syllables the sound of English *a* in father, in closed syllables that of English *a* in ass, but more open; when there is a clear sound in closed syllables the spelling is *aa* (*jaar*), in open syllables *a* (*maken*), pronounced as *a* in ask; in *bad*, *nat*, *a* = *ă*. An original short *a* and a long *a* in open syllables are even in Middle Dutch pronounced alike, and may be rhymed with each other (*dagen*, *lagen*, a rhyme which was not permitted in Middle High German). In the Saxon dialects *â* was expressed by *ao*, *a* or *â* in the Frisio-Saxon districts passes into *è* before *r*, as *jèr* (*jaar*). Middle Dutch preserved *a* in several words where in Modern Dutch it passes into *e* before *r* (*arg*, *erg*; *sarc*, *zerk*; *warf*, *werf*); in others, as *aarde*, *staart*, *zwaard*, the Middle Dutch had *e* and *a* (*erde*, *stert*, *swert*, *swart*, *start*; Modern Dutch *zwaard*, *staart*). In foreign words, likewise, *e* before *r* has become *a*; *paars*, *perse*; *lantaarn*, *lanterne* (in the dialects *e* is still frequently retained).

E. The sound of the *e* derived from *a* does not differ from that of an original *e*, or of an *e* derived from *i*, as they appear in open syllables (*steden*, *vele*, pronounced as *a* in English

name). If the *e* derived from *a* or *i* or the original *e* occurs in closed syllables, it has a short sound, as in English men, end, Modern Dutch *stem*. The *e* in closed syllables with a full sound (as English *a*; Sweet, *ei*) is spelled *ee*: *veel*, *week* (*e* from *î*), *beek*. The sharp, clear *ee* is indicated by the same letters in both open and closed syllables: *eer*, *sneeuw*, *zee*.

In some dialects this *ee* is pronounced like English *ee*, not only in the present dialects, but also in the 17th century.

The pronunciation of *ei* (from *ai*, or *eg*: *ag*, French *ai*, *ei*, *ée*) is that of English *i*, for instance, Dutch *ei*, English egg, is pronounced like English *I*.

I is pronounced short (somewhat like *i* of English pit), for instance in *pit*, *binden*, *sikkel*; it has a clear sound in *fabrikant*, though it has no stress.

Ie is pronounced like English *ee* in see, but somewhat shorter; so, *fabriek*, *fabrieken*, *Pieter*; also in *bieden*, *stierf*, &c. For original long *î*, Middle Dutch *ii* and *ij*, afterwards *ÿ*, was used. This vowel, though still written *y*, is pronounced like English *i* in I, like; so in *sysje* (English siskin), *lÿken*, &c.

The letter *o* represents three sounds:—(1) the short sharp *o* and (2) the short soft *o*, the former like the *o* in English not and French *soldat* (Dutch *bod*, *belofte*, *tocht*, *kolf*), the latter like the English *o* in don, the French *o* in *ballon* (Dutch *dof*, *ploffen*, *ochtend*, *vol*), and (3) the full, clear *o* as in English note, French *noter* (Dutch *kolen*, *sloten*, *verloren*). The sharp clear *oo*, in *stroom*, *dood*, has almost the same sound as the full *o*, in some dialects (among others the Saxon) it is pronounced as *o* with a glide *o*, in others (Flemish and Hollandsch) somewhat like *au*. In Middle Dutch, the lengthening of the vowels was frequently indicated by *e* (before *r* sometimes by *i*, as in *oir*); hence *ae* for *â*, *oe* for *ô*. Where *oe* occurs in the modern language, it has the sound of *u* (pronounced like the *u* in High German, and answering to the Gothic *ô*), which in Middle Dutch was frequently represented by *ou*. *oe* is pronounced *ou* (*au*; Sweet, p. 6) in West Flemish and the Groningen dialects. Before labials and gutturals *oe* in Middle Dutch was expressed by *ue* and *oe* (*bouc*, *souken*, and also *guet*, but usually *goet*, *soeken*, *boec*). The Saxon dialects still preserve an *ô* sound which agrees with the Dutch *oe* (*bôk*, *môder*); in two words—*romer* (*roemer*, however, is also used) and *spook*—*o* has passed from these dialects into Dutch. As the *u* (Old German *û*), which in the Dutch tongue has passed into *ui* except before *r* and *w*, retains the *û*-sound in the Saxon districts, some words have come into Dutch from these dialects, being written with *oe* from the similar sound of *oe* (from *ô*) in Dutch and *û* in Saxon (*snoet*, *boer*, *soezen*), by the side of which are Frankish words (*snuit*, *suizen*, &c.).

In the language of the people *oe* before *m* is often pronounced as *ŏ*, for instance *bloem* and *blom*.

Eu is not a diphthong, but the modification (*Umlaut*) of the clear *ō*; it has the same sound as German *ö* in *schön*; so in *vleugel*, *leugen*, *keuken*.

U before a double consonant or before a consonant in monosyllables has about the same pronunciation as in English stuff, rug; so in *kunnen*, *snurken*, *put*. When used in open syllables it has the same sound as in French *nature*.

In the 16th and 17th centuries, Middle Dutch *û* passed over through *oi* into *ui* by the influence of the Holland dialect. In the Saxon districts *û* kept the old pronunciation, but only in the language of the peasants. The common language has everywhere *ui*, pronounced nearly as German *eu*, English *oy*; so in *duizend*, *vuil*, *buigen*, &c.

Ou and *au* in *vrouw* and *blauw* are nearly pronounced in the same way, very much like English *ow* in crowd.

AUTHORITIES.—For a full survey of a history of the Dutch language the reader is referred to Jan te Winkel, “Geschichte der niederländischen Sprache,” *Grundriss der germ. Philologie*, 2, p. 704 (Strassburg, K. Grübner). Here an elaborate account may be found on p. 704 of the different works on the grammar and phonology of the various periods of the Dutch language. For explanation and history of words of the current language see the *Woordenboek der Nederlandsche Taal*, by De Vries and Te Winkel, continued by A. Kluyver, A. Beets, for a time by J.W. Müller and De Vreese, who left at their nomination as professors at Utrecht and Ghent. The Middle Dutch language may be known from the *Middelnederlandsch Woordenboek*, first by E. Verwys and J. Verdam, after the death of Verwys by Verdam alone. For the dialects the different grammars and glossaries issued at Martinus Nÿhoff (The Hague) and Kemink & Son (Utrecht) are of great importance. The Flemish dialect may be found in De Bo, *Westvlaamsch Idioticon*; other Belgian dialects are recorded in the publications of the *Vlaamsche Academie* (Ghent). Phonetic explanations are given in Roorda’s or in ten Bruggencate’s *Phonetic Works*, and a survey of the pronunciation in Branco van Dantzig’s *Dutch Pronunciation* and Dykstra’s *Dutch Grammar*.

(J. H. G.)

1 *i.e.* “Within a few years our language has been gradually skimmed of bastard words and non-Dutch elements.”

DUTCH LITERATURE. The languages now known as Dutch and Flemish did not begin to take distinct shape till about the end of the 11th century. From a few existing fragments—two incantations from the 8th century, a version of the Psalms from the 9th century, and several charters—a supposed Old Dutch language has been recognized; but Dutch literature actually commences in the 13th century, as Middle Dutch, the creation of the first national movement in Brabant, Flanders, Holland and Zealand.

From the wreck of Frankish anarchy no genuine folk-tales of Dutch antiquity have come down to us, and scarcely any echoes of German myth. On the other hand, the sagas of Charlemagne and Arthur appear immediately in Middle Dutch forms. These were evidently introduced by wandering minstrels and jongleurs, and translated to gratify the curiosity of the noble women. It is rarely that the name of such a translator has reached us, but we happen to know that the fragments we possess of the French romance of *William of Orange* were written in Dutch by a certain Klaas van Haarlem, between 1191 and 1217. The *Chanson de Roland* was translated about the same time, and considerably later *Parthenopeus de Blois*. The Flemish minstrel Diederic van Assenede completed his version of *Floris et Blanchefleur* about 1250. The Arthurian legends appear to have been brought to Flanders by some Flemish colonists in Wales, on their return to their mother-country. About 1250 a Brabantine minstrel translated Walter Map’s *Lancelot du lac* at the command of his liege, Lodewijk van Velthem. The *Gauvain* was translated by Penninc and Vostaert before 1260, while the first original Dutch writer, the famous Jakob van Maerlant, occupied himself about 1260 with several romances dealing with Merlin and the Holy Grail. The earliest existing fragments of the epic of *Reynard the Fox* were written in Latin by Flemish priests, and about 1250 the first part of a very important version in Dutch was made by Willem the Minstrel, of whom it is unfortunate that we know no more save that he was the translator of a lost romance, *Madoc*. In his existing work the author follows Pierre de Saint-Cloud, but not slavishly; and he is the first really admirable writer that we meet with in Dutch literature. The second part was added by another hand at the end of the 14th century.

Willem the Minstrel.

It is not necessary to dwell at any length on the monkish legends and the hymns to the Virgin Mary which were abundantly produced during the 13th century, and which, though destitute of all literary merit, were of use as exercises in the infancy of the language. The first lyrical writer of Holland was John I., duke of Brabant, who practised the *minnelied* with success, but whose songs are only known to us through a Swabian version of a few of them. In 1544 the earliest collection of Dutch folk-songs saw the light, and in this volume one or two romances of the 14th century are preserved, of which *Het Daghet in den Oosten* is the best known. Almost the earliest fragment of Dutch popular poetry, but of later time, is an historical ballad describing the murder of Count Floris V. in 1296. A very curious collection of mystical medieval hymns by Sister Hadewych, a nun of Brabant, was first printed in 1875 by Heremans and Ledeganck.

720

John I., duke of Brabant.

Hitherto, as we have seen, the Middle Dutch language had placed itself at the service of the aristocratic and monastic orders, flattering the traditions of chivalry and of religion, but scarcely finding anything to say to the bulk of the population. With the close of the 13th century a change came over the face of Dutch literature. The Flemish towns began to prosper and to assert their commercial supremacy over the North Sea. Under such mild rulers as William II. and Floris V., Dort, Amsterdam, and other cities contrived to win such privileges as amounted almost to political independence, and with this liberty there arose a new sort of literary expression. The founder and creator of this original Dutch literature was Jacob van Maerlant (*q.v.*). His *Naturen Bloeme*, written about 1263, forms an epoch in Dutch literature; it is a collection of moral and satirical addresses to all classes of society. With his *Rijmbijbel* (Rhyming Bible) he foreshadowed the courage and free-thought of the Reformation. It was not until 1284 that he began his masterpiece, *De Spieghel Historiael* (The Mirror of History), at the command of Count Floris V. Of his disciples, the most considerable in South Holland was Jan van

Maerlant.

Boendale. Boendale (1280-1365), known as Jan de Klerk. He was born in Brabant, and became clerk to the justices at Antwerp in 1310. He was entrusted with various important missions. His works are historical and moral in character. In him the last trace of the old chivalric and romantic element has disappeared. He completed his famous rhyme chronicle, the *Brabantsche Yeesten*, in 1350; it contains the history of Brabant down to that date, and was brought down to 1440 by an anonymous later writer. For English readers it is disappointing that Boendale's other great historical work (*Van den derden Edewaert, coninc van Ingelant ...*, ed. J.F. Willems, Ghent, 1840), an account of Edward III. and his expedition to Flanders in 1338, has survived only in some fragments. The remainder of Boendale's works are didactic poems, pursuing still further the moral thread first taken up by Maerlant, and founded on medieval scholastic literature. In Ypres the school of Maerlant was represented by Jan de Weert, a surgeon, who died in 1362, and who was the

Weert. author of two remarkable works of moral satire and exhortation, the *Nieuwe Doctrinael of Spieghel der Sonden*, and a *Disputacie van Rogier end van Janne*. In the beginning of the 13th century Gielijs van Molhem wrote a Dutch version of part of the *Miserere* of the Picard poet who concealed his identity under the name of the recluse of Moiliens. The poem consisted of meditations on the origin and destiny of man, and on the sins of pride, envy, &c. The translation, completed later by an author calling himself Heinrec, was critically edited (Groningen, 1893) by P. Leendertz. In North Holland a greater talent than that of Weert or of Boendale was exhibited by Melis

Stoke. Stoke, a monk of Egmond, who wrote the history of the state of Holland to the year 1305; this work, the *Rijmkronik*, was printed in 1591, and edited in 1885 for the Utrecht Historical Society; and for its exactitude and minute detail it has proved of inestimable service to later historians.

With the middle of the 14th century the chivalric spirit came once more into fashion. A certain revival of the forms of feudal life made its appearance under William III. and his successors. Knightly romances came once more into vogue, but the newborn didactic poetry contended vigorously against the supremacy of what was lyrical and epical. It will be seen that from the very first the literary spirit in Holland began to assert itself in a homely and

Heelu. utilitarian spirit. Jan van Heelu, a Brabanter, was the author of an epic poem[1] on the battle of Woeronc (1288), dedicated to Princess Margaret of

Aken. England, and to him has been attributed the still finer romance of the *War of Grimbergen*.[2] Still more thoroughly aristocratic in feeling was Hein van Aken, a priest of Louvain, who lived about 1255-1330, and who combined to a very curious extent the romantic and didactic elements. As early as 1280 he had completed his translation[3] of the *Roman de la rose*, which he must have commenced in the lifetime of Jean de Meung. More remarkable than any of his translated works, however, is his original romance, completed in 1318, *Heinric en Margriete van Limborch*,[4] upon which he was at work for twenty-seven years. During the Bavarian period (1349-1433) very little original writing of much value was produced in Holland. Buodewijn van der Loren wrote one excellent piece on the Maid of Ghent, in 1389. Augustijnken van Dordt was a peripatetic minstrel of North Holland, who composed for the sheriff Aelbrecht and for the count of Blois from 1350 to 1370. Such of his verses as have been handed down to us are allegorical and moral. Willem van Hildegaersberch (1350-1408) was another northern poet, of a more strictly political cast. Many of his writings exist still unpublished, and are very rough in style

Dirk Potter. and wanting in form. Towards the end of the 14th century an erotic poet of considerable power arose in the person of the lord of Waddinxsveen and Hubrechtsambacht, Dirk Potter van der Loo (*c.* 1365-1428), who was secretary at the court of the counts of Holland. During an embassy in Rome (1411-1412) this eminent diplomatist made himself acquainted with the writings of Boccaccio, and commenced a vast poem on the course of love, *Der Minnen Loep*,[5] which is a wonderful mixture of classical and Biblical instances of amorous adventures set in a framework of didactic philosophy. In Dirk Potter the last traces of the chivalric element died out of Dutch literature, and left poetry entirely in the hands of the school of Maerlant. Many early songs, with some of later date, are preserved in a *Liedekens-Boeck* printed by Jan Roulans (Antwerp, 1544). The unique copy in the Wolfenbüttel library was edited by Hoffmann von Fallersleben in *Horae Belgicae* (vol. xi., 1855).

It is now time to consider the growth of prose literature in the Low Countries. The oldest pieces of Dutch prose now in existence are charters of the towns of Flanders and Zealand, dated 1249, 1251 and 1254. A prose translation of the Old Testament was made about 1300, and there exists a *Life of Jesus* about the same date. Of the mystical preachers whose religious writings have reached us, the Brussels friar, Jan van Ruysbroec (1294-1381), is the most important. But the most interesting relics of medieval Dutch prose, as far as the

formation of the language is concerned, are the popular romances in which the romantic stories of the *trouvères* and minstrels were translated for the benefit of the unlettered public into simple language. As in most European nations, the religious drama takes a prominent place in every survey of medieval literature in Holland. Unfortunately the text of all the earliest mysteries, the language of which would have an extraordinary interest for us, has been lost. We possess records of dramas having been played at various places—*Our Lord's Resurrection*, at the Hague, in 1400; *Our Lady the Virgin*, at Arnheim, in 1452; and *The Three Kings*, at Delft, in 1498. The earliest existing fragment, however, is part of a *Limburg-Maastricht Passover Play*[6] of about 1360. The latest Dutch miracle play was the *Mystery of the Holy Sacrament*, composed by a certain Smeken, at Breda, and performed on St John's day, 1500. This play was printed in 1867. With these purely theological dramas there were acted mundane farces, performed outside the churches by semi-religious companies; these curious moralities were known as "Abelespelen" and "Sotternieën." In these pieces we discover the first traces of that genius for low comedy which was afterwards to take perfect form in the dramas of Brederôo and the paintings of Teniers.

Religious drama.

The theatrical companies just alluded to, "Gesellen van den Spele," formed the germ out of which developed the famous "Chambers of Rhetoric"[7] which united within themselves all the literary movements that occupied the Low Countries during the 15th and 16th centuries. The poets of Holland had already discovered in late medieval times the value of gilds in promoting the arts and industrial handicrafts. The term "collèges de rhétorique" is supposed to have been introduced about 1440 to the courtiers of the Burgundian dynasty, but the institutions themselves existed long before. These literary gilds lasted till the end of the 16th century, and during the greater part of that time preserved a completely medieval character, even when the influences of the Renaissance and the Reformation obliged them to modify in some degree their outward forms. They were in almost all cases absolutely middle-class in tone, and opposed to aristocratic ideas and tendencies in thought. Of these remarkable bodies the earliest were almost entirely engaged in preparing mysteries and miracle-plays for the populace. Each chamber, and in process of time every town in the Low Countries, possessed one, and took as its title some fanciful or heraldic sign. At Diest "The Eyes of Christ," dated from 1302, and an earlier one, the "Lily," is mentioned. "The Alpha and Omega," at Ypres, was founded about 1398; that of the "Violet," at Antwerp, followed in 1400; the "Book," at Brussels, in 1401; the "Berberry," at Courtrai, in 1427; the "Holy Ghost," at Bruges, in 1428; the "Floweret Jesse," at Middelburg, in 1430; the "Oak Tree," at Vlaardingen, in 1433; and the "Marigold," at Gouda, in 1437. The most celebrated of all the chambers, that of the "Eglantine" at Amsterdam, with its motto *In Liefde Bloeyende* (Blossoming in Love), was not instituted until 1496. Among the most influential chambers not above mentioned should be included the "Fountain" at Dort, the "Corn Flower" at the Hague, the "White Columbine" at Leiden, the "Blue Columbine" at Rotterdam, the "Red Rose" at Schiedam, the "Thistle" at Zierikzee, "Jesus with the Balsam" at Ghent, and the "Garland of Mary" at Brussels. And not in these important places only, but in almost every little town, the rhetoricians exerted their influence, mainly in what we may call a social direction. Their wealth was in most cases considerable, and it very soon became evident that no festival or procession could take place in a town unless the "Kamer" patronized it. Towards the end of the 15th century the Ghent chamber of "Jesus with the Balsam" began to exercise a sovereign power over the other Flemish chambers, which was emulated later on in Holland by the "Eglantine" at Amsterdam. But this official recognition proved of no consequence in literature, and it was not in Ghent, but in Antwerp, that intellectual life first began to stir. In Holland the burghers only formed the chambers, while in Flanders the representatives of the noble families were honorary members, and assisted with their money at the arrangement of ecclesiastical or political pageants. Their pompous *landjuweelen*, or tournaments of rhetoric, at which rich prizes were contended for, were the great occasions upon which the members of the chambers distinguished themselves. Between 1426 and 1620 at least 66 of these festivals were held. There was a specially splendid *landjuweel* at Antwerp in 1496, in which 28 chambers took part, but the gayest of all was that celebrated at Antwerp on the 3rd of August 1561. To this the "Book" at Brussels sent 340 members, all on horseback, and clad in crimson mantles. The town of Antwerp gave a ton of gold to be given in prizes, which were shared among 1893 rhetoricians. This was the zenith of the splendour of the "Kamers van Rhetorica," and after this time they soon fell into disfavour. We can trace the progress of literary composition under the chambers, although none of their official productions has descended to us. Their dramatic pieces were certainly of a didactic cast, with a strong farcical flavour, and continued the tradition of Maerlant and his school. They very rarely dealt with historical or even Biblical personages, but entirely with allegorical and moral

Chambers of Rhetoric.

abstractions, until the age of humanism introduced upon the stage the names without much of the spirit of mythology. Of the pure farces of the rhetorical chambers we can speak with still more confidence, for some of them have come down to us, and among the authors famed for their skill in this sort of writing are named Cornelis Everaert of Bruges and Laurens Janssen of Haarlem. The material of these farces is extremely raw, consisting of rough jests at the expense of priests and foolish husbands, silly old men and their light wives. Laurens Janssen is also deserving of remembrance for a satire against the clergy, written in 1583. The chambers also encouraged the composition of songs, but with very little success; they produced no lyrical genius more considerable than Matthijs de Casteleyn (1488-1550), the founder of the Flemish chamber of "Pax Vobiscum" at Oudenarde, and author of *De Conste van Rhetorijcken* (Ghent, 1573), a personage whose influence as a fashioner of language would have been more healthy if his astounding metrical feats and harlequin *tours de force* had not been performed in a dialect debased with all the worst bastard phrases of the Burgundian period.

Houwaert.

In the middle of the 16th century a group of rhetoricians in Brabant and Flanders attempted to put a little new life into the stereotyped forms of the preceding age by introducing in original composition the new-found branches of Latin and Greek poetry. The leader of these men was Jean Baptista Houwaert[8] (1533-1599), a personage of considerable political influence in his generation. Houwaert held the title of "Counsellor and Master in Ordinary of the Exchequer to the Dukedom of Brabant"; he played a prominent part in the revolution of the Low Countries against Spain; and when the prince of Orange entered Brussels victoriously (Sept. 23rd, 1577), Houwaert met him in pomp at the head of the two chambers of rhetoric—the "Book" and the "Garland of Mary." He did not remain faithful to his convictions, for he composed in 1593 a poem in honour of the cardinal-archduke Ernest of Austria, the governor of the Spanish Netherlands. He considered himself a devout disciple of Matthijs de Casteleyn, but his great characteristic was his unbounded love of classical and mythological fancy. His didactic poems are composed in a wonderfully rococo style, and swarm with misplaced Latinities. In his bastard Burgundian tongue he boasted of having "poëtelijck geïnventeert ende rhetorijckelijck ghecomponeert" for the Brussels chamber such dramas as *Aeneas and Dido*, *Mars and Venus*, *Narcissus and Echo*, or *Leander and Hero*—named together the *Commerce of Amorosity* (1583). But of all his writings, *Pegasides Pleyn* (Antwerp, 1582-1583), or the Palace of Maidens, is the most remarkable; this is a didactic poem in sixteen books, dedicated to a discussion of the variety of earthly love. Houwaert's contemporaries nicknamed him "the Homer of Brabant"; later criticism has preferred to see in him an important link in that chain of homely didactic Dutch which ends in Cats. His writings are composed in a Burgundian so base that they hardly belong to Flemish literature at all. Into the same miserable dialect Cornelis van Ghistele of Antwerp translated, between 1555 and 1583, parts of Terence, Virgil, Horace, and Ovid, while the painter Karel van Mander (1547-1609) put a French version of the *Iliad* and of the *Eclogues* of Virgil into an equally ill-fitting Flemish dress. In no country of Europe did the humanism of the 16th century at first affect the national literature so slightly or to so little purpose.

Psalms and hymns.

The stir and revival of intellectual life that arrived with the Reformation found its first expression in the composition of Psalms. The earliest printed collection appeared at Antwerp in 1540, under the title of *Souter-Liedekens*, and was dedicated to a Dutch nobleman, Willem van Zuylen van Nieuvelt, by whose name it is usually known. This collection, however, was made before the Reformation in Holland really set in. For the Protestant congregations Jan Utenhove printed a volume of Psalms in London in 1566; Lucas de Heere (1534-1585), and immediately after him, with much greater success, Petrus Datheen (1531-1590), translated the hymns of Clément Marot. For printing this last volume, in 1567, Herman Schinkel of Delft was burned to death in 1568. Datheen was not a rhetorician, but a person of humble origin, who wrote in the vulgar tongue, and his hymns spread far and wide among the people. Until 1773 they were in constant use in the state church of Holland. But the great events of the period of reformation are not marked by psalms only in Dutch literature. Two collections of hymns and lyrical pieces, printed in 1562 and 1569, perpetuate the fervour and despair of the martyrs of the Mennonite Church. Similar utterances of the persecuted Protestants were published at Haarlem and Leeuwarden, at Ghent and at Bruges. Very different in tone were the battle-songs of liberty and triumph sung a generation later by the victorious Reformers, the "Geuzen" or "Gueux" (*q.v.*). The famous song-book of 1588, the *Geusen Lieden Boecxken*, was full of ardent and heroic sentiment, expressed often in marvellously brilliant phrases. In this collection appeared for the first time such classical snatches of Dutch song as the Ballad of

Battle-songs.

Heiligerlee, the Ballad of Egmond and Horn, and the song of the Storm of Leiden. The political ballads, with their ridicule of the Spanish leaders, form a section of the *Boecxken* which has proved of inestimable value to historians. All these lyrics, however, whether of victory or of martyrdom, are still very rough in form and language.

Anna Bijns.

The first writer who used the Dutch tongue with grace and precision of style was a woman and a professed opponent of Lutheranism and reformed thought. Modern Dutch literature practically begins with Anna Bijns (*c.* 1494-1575). Against the crowd of rhetoricians and psalm-makers of the early part of the 16th century she stands out in relief as the one poet of real genius. The language, oscillating before her time between French and German, formless, corrupt and invertebrate, took shape and comeliness, which none of the male pedants could give it, from the impassioned hands of a woman. Anna Bijns, who is believed to have been born at Antwerp in 1494, was a schoolmistress at that city in her middle life, and in old age she still "instructed youth in the Catholic religion." She died on the 10th of April 1575. Hendrik Peppinck, a Franciscan, who edited her third volume of poems when she was an old woman in 1567, speaks of her as "a maiden small of descent, but great of understanding, and godly of life." Her first known volume bears the date 1528, and displays her as already deeply versed in the mysteries of religion. We gather from all this that she was a lay nun, and she certainly occupied a position of great honour and influence at Antwerp. She was named "the Sappho of Brabant" and the "Princess of all Rhetoricians." She bent the powerful weapon of her verse against the faith and character of Luther. In her volume of 1528 the Lutherans are scarcely mentioned; in that of 1538 every page is occupied with invectives against them; while the third volume of 1567 is the voice of one from whom her age has passed. All the poems of Anna Bijns which we possess are called *refereinen* or refrains.[9] Her mastery over verse-form was extremely remarkable, and these refrains are really modified chants-royal. The writings of Anna Bijns offer many points of interest to the philologist. In her the period of Middle Dutch closes, and the modern Dutch begins. In a few grammatical peculiarities—such as the formation of the genitive by some verbs which now govern the accusative, and the use of *ghe* before the infinitive—her language still belongs to Middle Dutch; but these exceptions are rare, and she really initiated that modern speech which Filips van Marnix adopted and made classical in the next generation.

Marnix.

In Filips van Marnix, lord of St Aldegonde (1538-1598), a much greater personage came forward in the ranks of liberty and reform. He was born at Brussels in 1538, and began life as a disciple of Calvin and Beza in the schools of Geneva. It was as a defender of the Dutch iconoclasts that he first appeared in print, with his tract on *The Images thrown down in Holland in August 1566*. He soon became one of the leading spirits in the war of Dutch independence, the intimate friend of the prince of Orange, and the author of the glorious *Wilhelmuslied*. It was in the autumn of 1568 that Marnix composed this, the national hymn of Dutch liberty and Protestantism. In 1569 he completed a no less important and celebrated prose work, the *Biencorf* or Beehive of the Romish Church. In this satire he was inspired in a great measure by Rabelais, of whom he was an intelligent disciple. It is written in prose that may be said to mark an epoch in the language and literature of Holland. Overwhelmed with the press of public business, Marnix wrote little more until in 1580 he published his *Psalms of David newly translated out of the Hebrew Tongue*. He occupied the last years of his life in preparing a Dutch version of the Bible, translated direct from the original. At his death only Genesis was found completely revised; but in 1619 the synod of Dort placed the unfinished work in the hands of four divines, who completed it.

Coornhert.

In Dirck Volckertsen Coornhert[10] (1522-1590) Holland for the first time produced a writer at once eager to compose in his native tongue and to employ the weapons of humanism. Coornhert was a typical burgher of North Holland, equally interested in the progress of national emancipation and in the development of national literature. He was a native of Amsterdam, but he did not take part in the labours of the old chamber of the Eglantine, but quite early in life proceeded to Haarlem, and was notary, secretary and finally pensionary of the town. In 1566 he was imprisoned for his support of the Reformers, and in 1572 he became secretary to the states of Holland. He practised the art of etching, and spent all his spare time in the pursuit of classical learning. He was nearly forty years of age before he made any practical use of his attainments. In 1561 he printed his translation of the *De officiis* of Cicero, and in 1562 of the *De beneficiis* of Seneca. In these volumes he opposed with no less zeal than Marnix had done the bastard forms still employed in prose by the rhetoricians of Flanders and Brabant. During the next decade he occupied himself chiefly with plays and poems, conceived and expressed with far less freedom than his prose, and more in the approved conventional fashion of the

rhetoricians; he collected his poems in 1575. The next ten years he occupied in polemical writing, from the evangelical point of view, against the Calvinists. In 1585 he translated Boethius, and then gave his full attention to his original masterpiece, the *Zedekunst* (1586), or Art of Ethics, a philosophical treatise in prose, in which he studied to adapt the Dutch tongue to the grace and simplicity of Montaigne's French. His humanism unites the Bible, Plutarch and Marcus Aurelius in one grand system of ethics, and is expressed in a style remarkable for brightness and purity. He died at Gouda on the 29th of October 1590; his works, in three enormous folio volumes, were first collected in 1630.

Amsterdam the centre of letters.

Towards the end of the period of transition, Amsterdam became the centre of all literary enterprise in Holland. In 1585 two of the most important chambers of rhetoric in Flanders, the "White Lavender" and the "Fig Tree," took flight from the south, and settled themselves in Amsterdam by the side of the "Eglantine." The last-named institution had already observed the new tendency of the age, and was prepared to encourage intellectual reform of every kind, and its influence spread through Holland and Zealand. In Flanders, meanwhile, crushed under the yoke of Parma, literature and native thought absolutely expired. From this time forward, and until the emancipation of the southern provinces, the domain of our inquiry is confined to the district north of the Scheldt.

Spieghel.

In the chamber of the Eglantine at Amsterdam two men took a very prominent place, more by their intelligence and modern spirit than by their original genius. Hendrick Laurenssen Spieghel (1549-1612) was a humanist of a type more advanced and less polemical than Coornhert. He wrote a charming poem in praise of dancing; but his chief contributions to literature were his *Tweespraeck van de nederduytsche letterkunst*, a philological exhortation, in the manner of Joachim du Bellay's famous tract, urging the Dutch nation to purify and enrich its tongue at the fountains of antiquity, and a didactic epic, entitled *Hertspieghel* (1614),[11] which has been greatly praised, but which is now much more antiquated in style and more difficult to enjoy than Coornhert's prose of a similar tendency. That Spieghel was a Catholic prevented him perhaps from exercising as much public influence as he exercised privately among his younger friends. The same may be said of the man who, in 1614, first collected Spieghel's writings, and published them in a volume with his own verses. Roemer Pieterssen Visscher[12] (1547-1620) proceeded a step further than Spieghel in the cultivation of polite letters. He was deeply tinged with a spirit of classical learning that was much more genuine and nearer to the true antique than any that had previously been known in Holland. His own disciples called him the Dutch Martial, but he was at best little more than an amateur in poetry, although an amateur whose function it was to perceive and encourage the genius of professional writers. Roemer Visscher stands at the threshold of the new Renaissance literature, himself practising the faded arts of the rhetoricians, but pointing by his counsel and his conversation to the naturalism of the great period.

Roemer Visscher.

The Renaissance.

It was in the salon at Amsterdam which the beautiful daughters of Roemer Visscher formed around their father and themselves that the new school began to take form. The republic of the United Provinces, with Amsterdam at its head, had suddenly risen to the first rank among the nations of Europe, and it was under the influence of so much new emotion and brilliant ambition that the country no less suddenly asserted itself in a great school of painting and poetry. The intellect of the whole Low Countries was concentrated in Holland and Zealand, while the six great universities, Leiden, Groningen, Utrecht, Amsterdam, Harderwijk and Franeker, were enriched by a flock of learned exiles from Flanders and Brabant. It had occurred, however, to Roemer Visscher only that the path of literary honour lay, not along the utilitarian road cut out by Maerlant and Boendale, but in the study of beauty and antiquity. In this he was curiously aided by the school of ripe and enthusiastic scholars who began to flourish at Leiden, such as Drusius, Vossius and Hugo Grotius, who themselves wrote little in Dutch, but who chastened the style of the rising generation by insisting on a pure and liberal Latinity. Out of that generation arose the greatest names in the literature of Holland—Vondel, Hooft, Cats, Huygens—in whose hands the language, so long left barbarous and neglected, took at once its highest finish and melody. By the side of this serious and aesthetic growth there is to be noticed a quickening of the broad and farcical humour which had been characteristic of the Dutch nation from its commencement. For fifty years, and these the most glorious in the annals of Holland, these two streams of influence, one towards beauty and melody, the other towards lively comedy, ran side by side, often in the same channel, and producing a rich harvest of great works. It was in the house of the daughters of Roemer Visscher that the tragedies of Vondel and the comedies of Bredero, the

farces of Coster and the odes of Huygens, alike found their first admirers and their best critics.

Roemer Visscher's daughters.

Of the famous daughters of Roemer, two cultivated literature with marked success. Anna (1584-1651) was the author of a descriptive and didactic poem, *De Roemster van den Aemstel* (The Glory of the Aemstel), and of various miscellaneous writings; Tesselschade (1594-1649) wrote some lyrics which still place her at the head of the female poets of Holland, and she translated the great poem of Tasso. They were women of universal accomplishment, graceful manners and singular beauty; and their company attracted to the house of Roemer Visscher all the most gifted youths of the time, several of whom were suitors, but in vain, for the hand of Anna or of Tesselschade.

Hooft.

Of this Amsterdam school, the first to emerge into public notice was Pieter Cornelissen Hooft (1581-1647). His *Achilles and Polyxena* (1598) displayed a precocious ease in the use of rhetorical artifices of style. In his pastoral drama of *Granida* (1605) he proved himself a pupil of Guarini. In tragedy he produced *Baeto* and *Geraad van Velsen*; in history he published in 1626 his *Life of Henry the Great*, while from 1628 to 1642 he was engaged upon his master-work, the *History of Holland*. Hooft desired to be a severe purist in style, and to a great extent he succeeded, but, like most of the writers of his age, he permitted himself too many Latinisms. In his poetry, especially in the lyrical and pastoral verse of his youth, he is full of Italian reminiscences both of style and matter; in his noble prose work he has set himself to be a disciple of Tacitus. Motley has spoken of Hooft as one of the greatest historians, not merely of Holland, but of Europe. His influence in purifying the language of his country, and in enlarging its sphere of experience, can hardly be overrated.

Bredero.

Very different from the long and prosperous career of Hooft was the brief, painful life of the greatest comic dramatist that Holland has produced. Gerbrand Adriaanssen Bredero[13] (1585-1618), the son of an Amsterdam shoemaker, was born on the 16th of March 1585. He knew no Latin; he had no taste for humanism; he was a simple growth of the rich humour of the people. He entered the workshop of the painter Francisco Badens, but accomplished little in art. His life was embittered by a hopeless love for Tesselschade, to whom he dedicated his dramas, and whose beauty he celebrated in a whole cycle of love songs. His ideas on the subject of drama were at first a mere development of the medieval "Abelespelen." The "Oude Kammer," one of the chambers of rhetoric, furnished an opening for his dramatic powers. He commenced by dramatizing the romance of *Roderick and Alphonsus*, in 1611, and *Griane* in 1612, but in the latter year he struck out a new and more characteristic path in his *Farce of the Cow*. From this time until his death he continued to pour out comedies, farces and romantic dramas, in all of which he displayed a coarse, rough genius not unlike that of Ben Jonson, whose immediate contemporary he was. His last and best piece was *Jerolimo, the Spanish Brabanter*, a satire upon the exiles from the south who filled the halls of the Amsterdam chambers of rhetoric with their pompous speeches and preposterous Burgundian phraseology. The piece was based on a Dutch version (Delft, 1609) of an early Spanish picaresque romance, *La Vida de Lazarillo de Tormes* (Burgos, 1554). Bredero was closely allied in genius to the dramatists of the Shakespearian age, but he founded no school, and stands almost as a solitary figure in the literature of Holland. He died on the 23rd of August 1618. Theodore Rodenburg (d. 1644), ridiculed by Bredero for his pretentiousness, had a wider knowledge of contemporary foreign literature than the other dramatists. He adapted some of the dramas of Lope de Vega, which he had witnessed at Madrid, into Dutch, and in 1618 he adapted Cyril Tourneur's *Revenger's Tragedy*.

Coster.

The only individual at all clearly connected with Bredero in talent was Dr Samuel Coster,[14] who was born at Amsterdam on the 16th of September 1579. He studied medicine at Leiden, and practised at Amsterdam. He is chiefly remembered for having been the first to take advantage of the growing dissension in the body of the old chamber of the Eglantine to form a new institution. In 1617 Coster founded what he called the "First Dutch Academy." This was in fact a theatre, where, for the first time, dramas could be publicly acted under the patronage of no chamber of rhetoric. Coster himself had come before the world in 1612 with his farce of *Teuwis the Boor*, based on a folk-song in Jan Roulans's *Liedekens Boeckh*, and he continued this order of composition in direct emulation of Bredero, but with less talent. In 1615 he began a series of "blood-and-thunder" tragedies with his horrible *Itys*, and he continued this coarse style of tragic writing for several years. He survived at least until after 1648 as a supreme authority in Amsterdam upon all dramatic matters.

The first work of the greatest of all Dutch writers, Joost van den Vondel (1587-1679), was *Het Pascha* (1612), a tragedy or tragi-comedy on the exodus of the children of Israel, written, like all his succeeding dramas, on the recognized Dutch plan, in alexandrines, in five acts, and with choral interludes between the acts. There is comparatively little promise in *Het Pascha*. It was much inferior dramatically to the plays just being produced by Bredero, and metrically to the clear and eloquent tragedies and pastorals of Hooft; but it secured the young poet a position inferior only to theirs. Yet for a number of years he made no attempt to emphasize the impression he had produced on the public, but contented himself during the years that are the most fertile in a poet's life with translating and imitating portions of du Bartas's popular epic. The short and brilliant life of Bredero, his immediate contemporary and greatest rival, burned itself out in a succession of dramatic victories, and it was not until two years after the death of that great poet that Vondel appeared before the public with a second tragedy, the *Jerusalem laid Desolate*. Five years later, in 1625, he published what seemed an innocent study from the antique, his tragedy of *Palamedes, or Murdered Innocence*. All Amsterdam discovered, with smothered delight, that under the name of the hero was thinly concealed the figure of Barneveldt, whose execution in 1618 had been a triumph of the hated Calvinists. Thus, at the age of forty-one, the obscure Vondel became in a week the most famous writer in Holland. For the next twelve years, and till the accession of Prince Frederick Henry, Vondel had to maintain a hand-to-hand combat with the "Saints of Dort." This was the period of his most resolute and stinging satires; Cats took up the cudgels on behalf of the counter-Remonstrants, and there raged a war of pamphlets in verse. A purely fortuitous circumstance led to the next great triumph in Vondel's slowly developing career. The Dutch Academy, founded in 1617 almost wholly as a dramatic gild, had become so inadequately provided with stage accommodation that in 1638, having coalesced with the two chambers of the "Eglantine" and the "White Lavender," it ventured on the erection of a large public theatre, the first in Amsterdam. Vondel, as the greatest poet of the day, was invited to write a piece for the first night; on the 3rd of January 1638 the theatre was opened with the performance of a new tragedy out of early Dutch history, the famous *Gysbreght van Aemstel*. The next ten years were rich in dramatic work from Vondel's hand; he supplied the theatre with heroic Scriptural pieces, of which the general reader will obtain the best idea if we point to the *Athalie* of Racine. In 1654, having already attained an age at which poetical production is usually discontinued by the most energetic of poets, he brought out the most exalted and sublime of all his works, the tragedy of *Lucifer*. Very late in life, through no fault of his own, financial ruin fell on the aged poet, and from 1658 to 1668—that is, from his seventieth to his eightieth year—this venerable and illustrious person, the main literary glory of Holland through her whole history, was forced to earn his bread as a common clerk in a bank, miserably paid, and accused of wasting his masters' time by the writing of verses. The city released him at last from this wretched bondage by a pension, and the wonderful old man went on writing odes and tragedies almost to his ninetieth year. He died at last in 1679, of no disease, having outlived all his contemporaries and almost all his friends, but calm, sane and good-humoured to the last, serenely conscious of the legacy he left to a not too grateful country. Vondel is the typical example of Dutch intelligence and imagination at their highest development. Not merely is he to Holland all that Camoens is to Portugal and Mickiewicz to Poland, but he stands on a level with these men in the positive value of his writings.

Vondel.

Lyrical art was represented on its more spontaneous side by the songs and ballads of Jan Janssen Starter (b. 1594), an Englishman by birth, who was brought to Amsterdam in his thirteenth year. Very early in life he was made a member of the "Eglantine," and he worked beside Bredero for two years; but in 1614 he wandered away to Leeuwarden, in Friesland, where he founded a literary gild, and brought out, in 1618, his plays *Timbre de Cardone*, *Fenicie van Messine*, the subject of which is identical with that of Shakespeare's *Much Ado about Nothing*, and *Daraïda*. But his great contribution to literature was his exquisite collection of lyrics, entitled the *Friesche Lusthof*, or Frisian Pleasance (1621). He returned to Amsterdam, but after 1625 we hear no more of him, and he is believed to have died as a soldier in Germany. The songs of Starter are in close relation to the lyrics of the English Elizabethans, and have the same exquisite simplicity and audacity of style.

Starter.

While the genius of Holland clustered around the circle of Amsterdam, a school of scarcely less brilliance arose in Middelburg, the capital of Zealand. The ruling spirit of this school was the famous Jakob Cats (1577-1660). In this voluminous writer, to whom modern criticism almost denies the name of poet, the genuine Dutch habit of thought, the utilitarian and didactic spirit which we have already

Cats.

observed in Houwaert and in Boendale, reached its zenith of fluency and popularity. During early middle life he produced the most important of his writings, his pastoral of *Galathea*, and his didactic poems, the *Maechdenplicht* and the *Sinne- en Minne-Beelden.* In 1624 he removed from Middelburg to Dort, where he soon after published his tedious ethical work called *Houwelick*, or Marriage; and this was followed from time to time by one after another of his monotonous moral pieces. Cats is an exceedingly dull and prosaic writer, whose alexandrines roll smoothly on without any power of riveting the attention or delighting the fancy. Yet his popularity with the middle classes in Holland has always been immense, and his influence extremely hurtful to the growth of all branches of literary art. Among the disciples of Cats, Jakob Westerbaen (1599-1670) was the most successful. His works included translations from Virgil, Ovid, Seneca, Terence and Juvenal, besides original poems. The Jesuit Adriaen Poirters (1606-1675) closely followed Cats in his remarkable *Masquer of the World*. A poet of Amsterdam, Jan Hermansz Krul (1602-1644), preferred to follow the southern fashion, and wrote didactic pieces in the Catsian manner.

A poet of dignified imagination and versatile form was Sir Constantijn Huygens (1596-1687), the diplomatist. He threw in his lot with the great school of Amsterdam, and became the intimate friend and companion of Vondel, Hooft and the daughters of Roemer Visscher. His famous poem in praise of the Hague, *Batava Tempe*, appeared in 1622, and was, from a technical point of view, the most accomplished and elegant poem till that time produced in Holland. His collected poems, *Otiorum libri sex*, were printed in 1625. *Oogentroost*, or Eye Consolation, was the fantastic title of a remarkable poem dedicated in 1647 to his blind friend, Lucretia van Trello. He printed in 1654 a topographical piece describing his own mansion, *Hofwijck*. Huygens represents the direction in which it would have been desirable that Dutch literature, now completely founded by Hooft and Vondel, should forthwith proceed, while Cats represents the tame and mundane spirit which was actually adopted by the nation. Huygens had little of the sweetness of Hooft or of the sublimity of Vondel, but his genius was eminently bright and vivacious, and he was a consummate artist in metrical form. The Dutch language has never proved so light and supple in any hands as in his, and he attempted no class of writing, whether in prose or verse, that he did not adorn by his delicate taste and sound judgment. A blind admiration for John Donne, whose poems he translated, was the greatest fault of Huygens, who, in spite of his conceits, remains one of the most pleasing of Dutch writers. In addition to all this he comes down to us with the personal recommendation of having been “one of the most lovable men that ever lived.”

Huygens.

Three Dutchmen of the 17th century distinguished themselves very prominently in the movement of learning and philosophic thought, but the illustrious names of Hugo Grotius (1583-1645) and of Baruch Spinoza (1632-1677) can scarcely be said to belong to Dutch literature. Balthasar Bekker (1634-1698), on the contrary, a Reformed preacher of Amsterdam, was a disciple of Descartes, who deserves to be remembered as the greatest philosophical writer who has used the Dutch language. His masterpiece, *Betoverde Wereld*, or the World Bewitched, appeared in 1691-1693. Bekker is popularly remembered most honourably by his determined attacks upon the system of a penal code for witchcraft.

Bekker.

From 1600 to 1650 was the blossoming time in Dutch literature. During this period the names of greatest genius were first made known to the public, and the vigour and grace of literary expression reached their highest development. It happened, however, that three men of particularly commanding talent survived to an extreme old age, and under the shadow of Vondel, Cats and Huygens there sprang up a new generation which sustained the great tradition until about 1680, when the final decline set in. Jan Vos (d. 1667) gained one illustrious success with his tragedy of *Aaron and Titus* in 1641, and lost still more in 1642 by his obscene farce of *Oene*. His second tragedy of *Medea*, in 1665, and his collected poems in 1662, supported his position as the foremost pupil of Vondel. Geeraerdt Brandt (1626-1685), the author of a *History of the Reformation* (4 vols., 1671-1704), deserves remembrance less as a tragic dramatist than as a consummate biographer, whose lives of Vondel and of De Ruyter are among the masterpieces of Dutch prose. Johan Antonides van der Goes (1647-1684) followed Vos as a skilful imitator of Vondel’s tragical manner. His Chinese tragedies, *Trazil* (1665) and *Zungchin* (1666), scarcely gave promise of the brilliant force and fancy of his *Yslroom*, a poem in praise of Amsterdam, 1671. He died suddenly, in early life, leaving unfinished an epic poem on the life of St. Paul. Reyer Anslo (1626-1669) marks the decline of taste and vigour; his once famous descriptive epic, *The Plague at Naples*, is singularly tame and rococo in style. Joachim Oudaen (1628-1692) wrote in his youth two promising tragedies, *Johanna Gray* (1648) and

Vos.
Brandt.

Goes.
Anslo.

Oudaen. Luiken.

Konradyn (1649). The Amsterdam section of the school of Cats produced Jeremias de Decker (1609-1666), author of *The Praise of Avarice*, a satirical poem in imitation of Erasmus, and Joannes Vollenhove (1631-1708), voluminous writers of didactic verse. The engraver Jan Luiken (1649-1708) published in 1671 a very remarkable volume of poems. In lyrical poetry Starter had a single disciple, Daniel Jonctijs (1600-1652), who published a volume of love songs in 1639 under the affected and untranslatable title of *Rooselijns oochjens ontleed*. None of these poets, except in some slight degree Luiken, set before himself any more ambitious task than to repeat with skill the effects of his predecessors.

Heemskerk. Heinsius.

Meanwhile the romantic and voluminous romances of the French school of Scudéry and Honoré d'Urfé had invaded Holland and become fashionable. Johan van Heemskerk (1597-1656), a councillor of the Hague, set himself to reproduce this product in native form, and published in 1637 his *Batavian Arcadia*, the first original Dutch romance, in which a party of romantic youths journey from the Hague to Katwijk, and undergo all sorts of romantic adventures. This book was extremely popular, and was imitated by Hendrik Zoeteboom in his *Zaanlandsche Arcadia* (1658), and by Lambertus Bos in his *Dordtsche Arcadia* (1662). A far more spirited and original romance is the *Mirandor* (1675) of Nikolaes Heinsius the younger (b. 1655), a book which resembles *Gil Blas*, and precedes it.

Gallican dramatists.

The drama fell into Gallicized hands at the death of Vondel and his immediate disciples. Lodewijck Meijer translated Corneille, and brought out his plays on the stage at Amsterdam, where he was manager of the national theatre or Schouwburg after Jan Vos. In connexion with Andries Pels (d. 1681), author of the tragedy of *Dido's Death*, Meijer constructed a dramatic club, entitled "Nil Volentibus Arduum," the great object of which was to inflict the French taste upon the public. Pels furthermore came forward as the censor of letters and satirist of barbarism in *Horace's Art of Poetry expounded*, in 1677, and in his *Use and Misuse of the Stage*, in 1681. Willem van Focquenbroch (1640-1679) was the most voluminous comic writer of this period. The close of the century saw the rise of two thoroughly Gallican dramatists, Jan van Paffenrode (d. 1673) and Pieter Bernagie (1656-1699), who may not unfairly be compared respectively to the Englishmen Farquhar and Shadwell. Thomas Asselijn (1630-1695) was a writer of more considerable talent and more homely instincts. He attempted to resist the dictatorship of Pels, and to follow the national tradition of Bredero. He is the creator of the characteristic Dutch type, the comic lover, Jan Klaaszen, whom he presented on the stage in a series of ridiculous situations. Abraham Alewijn (b. 1664), author of *Jan Los* (1721), possessed a coarse vein of dramatic humour; he lived in Java, and his plays were produced in Batavia. Finally Pieter Langendijk, the author of a farce borrowed from *Don Quixote*, claims notice among the dramatists of this period, although he lived from 1683 to 1756, and properly belongs to the next century. With him the tradition of native comedy expired.

Decline of poetry.

The Augustan period of poetry in Holland was even more blank and dull than in the other countries of northern Europe. Of the name preserved in the history of literature there are but very few that call for repetition here. Arnold Hoogvliet (1687-1763) wrote a passable poem in honour of the town of Vlaardingen, and a terrible Biblical epic, in the manner of Blackmore, on the history of Abraham. Hubert Cornelissen Poot (1680-1733) showed an unusual love of nature and freshness of observation in his descriptive pieces. Sybrand Feitama (1694-1758), who translated Voltaire's *Henriade* (1743), and wrote much dreary verse of the same class himself, is less worthy of notice than Dirk Smits (1702-1752), the mild and elegiac singer of Rotterdam. Tragic drama was more or less capably represented by Lucretia Wilhelmina van Merken (1722-1789), wife of the very dreary dramatist Nicholaas Simon van Winter (1718-1795).

Van Effen.

In the midst of this complete dissolution of poetical style, a writer arose who revived an interest in literature, and gave to Dutch prose the classical grace of the 18th century. Justus van Effen[15] (1684-1735) was born at Utrecht, fell into poverty early in life, and was thrown very much among the company of French émigrés, in connexion with whom he began literary life in 1713 by editing a French journal. Coming to London just when the *Tatler* and *Spectator* were in their first vogue, Van Effen studied Addison deeply, translated Swift and Defoe into French, and finally determined to transfer the beauties of English prose into his native language. It was not, however, until 1731, after having wasted the greater part of his life in writing French, that he began to publish his *Hollandsche Spectator*, which his death in 1735 soon brought to a close. Still, what he composed during the last four years of his life, in all its freshness,

manliness and versatility, constitutes the most valuable legacy to Dutch literature that the middle of the 18th century left behind it.

The supremacy of the poetical clubs in every town produced a very weakening and Della-Cruscan effect upon literature, from which the first revolt was made by the famous brothers Van Haren,[16] so honourably known as diplomatists in the history of the Netherlands. Willem van Haren (1710-1768) wrote verses from his earliest youth, while Onno Zwier van Haren (1713-1779), strangely enough, did not begin to do so until he had passed middle life. They were friends of Voltaire, and they were both ambitious of success in epic writing, as understood in France at that period. Willem published in 1741 his *Gevallen van Friso*, a historical epos, and a long series of odes and solemn lyrical pieces. Onno, in a somewhat lighter strain, wrote *Piet and Agnietje, or Pandora's Box*, and a long series of tragedies in the manner of Voltaire. The baroness Juliana Cornelia de Lannoy (1738-1782) was a writer of considerable talent, also of the school of Voltaire; her poems were highly esteemed by Bilderdijk, and she has a neatness of touch and clearness of penetration that give vivacity to her studies of social life. Jakobus Bellamy (1757-1786) was the son of a Swiss baker at Flushing; his pompous odes (*Gezangen myner Jeugd*, 1782; *Vaderlandsche Gezangen*, 1782) struck the final note of the false taste and Gallic pedantry that had deformed Dutch literature now for a century, and were for a short time excessively admired.

The brothers Van Haren.

Baroness de Lannoy.

Bellamy.

The year 1777 has been mentioned as the turning-point in the history of letters in the Netherlands. It was in that year that Elizabeth (Betjen) Wolff[17] (1738-1804), a widow lady in Amsterdam, persuaded her friend Agatha (Aagjen) Deken (1741-1804), a poor but extremely intelligent governess, to throw up her situation and live with her. For nearly thirty years these women continued together, writing in combination, and when the elder friend died on the 5th of November 1804, her companion survived her only nine days. Madam Wolff had appeared as a poetess so early as 1762, and again in 1769 and 1772, but her talent in verse was by no means very remarkable. But when the friends, in the third year of their association, published their *Letters on Divers Subjects*, it was plainly seen that in prose their talent was very remarkable indeed. Since the appearance of Heinsius's *Mirandor* more than a century had passed without any fresh start in novel-writing being made in Holland. In 1782 the ladies Wolff and Deken, inspired partly by contemporary English writers, and partly by Goethe, published their first novel, *Sara Burgerhar*. In spite of the close and obvious following of Richardson, this was a masterly production, and it was enthusiastically received. Another novel, *Willem Leevend*, followed in 1785, and *Cornelia Wildschut* in 1792. The ladies were residing in France at the breaking out of the Revolution, and they escaped the guillotine with difficulty. After this they wrote no more, having secured for themselves by their three unrivalled romances a place among the foremost writers of their country.

The ladies Wolff and Deken.

The last years of the 18th century were marked in Holland by a general revival of intellectual force. The romantic movement in Germany made itself deeply felt in all branches of Dutch literature, and German lyricism took the place hitherto held by French classicism. Pieter Nieuwland (1764-1794) was a feeble forerunner of the revival, but his short life and indifferent powers gave him no chance of directing the transition that he saw to be inevitable. One volume of poems appeared in 1788, and a second, posthumously, in 1797.

Nieuwland.

The real precursor and creator of a new epoch in letters was the famous Willem Bilderdijk (1756-1831) (*q.v.*). This remarkable man, whose force of character was even greater than his genius, impressed his personality on his generation so indelibly that to think of a Dutchman of the beginning of the 19th century is to think of Bilderdijk. In poetry his taste was strictly national and didactic; he began as a disciple of Cats, nor could he to the end of his life tolerate what he called "the puerilities of Shakespeare." His early love-songs, collected in 1781 and 1785, gave little promise of talent, but in his epic of *Elias* in 1786, he showed himself superior to all the Dutch poets since Huygens in mastery of form. For twenty years he lived a busy, eventful life, writing great quantities of verse, and then commenced his most productive period with his didactic poem of *The Disease of the Learned*, in 1807; in 1808 he imitated Pope's *Essay on Man*, and published the tragedy of *Floris V.*, and in 1809 commenced the work which he designed to be his masterpiece, the epic of *De Ondergang der eerste Wereld* (The Destruction of the First World), which he never finished, and which appeared as a fragment in 1820. To the foreign student Bilderdijk is a singularly uninviting and unpleasing figure. He unites in himself all the unlovely and provincial features which deform the worst of his countrymen.

Bilderdijk.

He was violent, ignorant and dull; his view of art was confined to its declamatory and least beautiful side, and perhaps no writer of equal talent has shown so complete an absence of taste and tact. Ten Brink has summed up the character of Bilderdijk's writings in an excellent passage:—"As an artist," he says, "he can perhaps be best described in short as the cleverest versemaker of the 18th century. His admirable erudition, his power over language, more extended and more colossal than that of any of his predecessors, enabled him to write pithy and thoroughly original verses, although the general tone of his thought and expression never rose above the ceremonious, stagy and theatrical character of the 18th century." But in spite of his outrageous faults, and partly because these faults were the exaggeration of a marked national failing, Bilderdijk long enjoyed an unbroken and unbounded popularity in Holland. Fortunately, however, a sounder spirit has arisen in criticism, and the prestige of Bilderdijk is no longer preserved so religiously.

Bilderdijk's scorn for the dramas of Shakespeare was almost rivalled by that he felt for the new German poetry. Notwithstanding his opposition, however, the romantic fervour found its way into Holland, and first of all in the persons of Hieronymus van Alphen (1746-1803) and Pieter Leonard van de Kastiele (1748-1810), who amused themselves by composing funeral poems of the school of Gessner and Blair. Van Alphen at one time was extolled as a writer of verses for children, but neither in this nor in the elegiac line did he possess nearly so much talent as Rhijnvis Feith (1753-1824), burgomaster of Zwolle, the very type of a prosperous and sentimental Dutchman. In his *Julia* (1783), a prose romance, Feith proved himself as completely the disciple of Goethe in *Werther* as Wolff and Deken had been of Richardson in *Sara Burgerhart*. In Johannes Kinker (1764-1845) a comic poet arose who, at the instigation of Bilderdijk, dedicated himself to the ridicule of Feith's sentimentalities. The same office was performed with more dignity and less vivacity by Baron W.E. van Perponcher (1741-1819), but Feith continued to hold the popular ear, and achieved an immense success with his poem *The Grave* in 1792. He then produced tragedies for a while, and in 1803 published *Antiquity*, a didactic epic. But his popularity waned before his death, and he was troubled by the mirth of such witty scoffers as Arend Fokke Simons (1755-1812), the disciple of Klopstock, and as P. de Wacker van Zon (1758-1818), who, in a series of very readable novels issued under the pseudonym of Bruno Daalberg, sharply ridiculed the sentimental and funereal school.

Under the Batavian republic a historian of great genius arose in the person of Johannes Henricus van der Palm (1763-1840), whose brilliant and patriotic *Gedenkschrift van Nederlands Herstelling* (1816) has somewhat obscured his great fame as a politician and an Orientalist. The work commenced by Van der Palm in prose was continued in verse by Cornelis Loots (1765-1834) and Jan Frederik Helmers (1767-1813). Loots, in his *Batavians of the Time of Caesar* (1805), read his countrymen a lesson in patriotism, which Helmers far exceeded in originality and force by his *Dutch Nation* in 1812. Neither of these poets, however, had sufficient art to render their pieces classical, or, indeed, enough to protect them during their lifetime from the sneers of Bilderdijk. Other political writers, whose lyrical energies were stimulated by the struggle with France, were Maurits Cornelis van Hall (1768-1858), Samuel Iperuszoon Wiselius (1769-1845) and Jan ten Brink (1771-1839), the second of whom immortalized himself and won the favour of Bilderdijk by ridiculing the pretensions of such frivolous tragedians as Shakespeare and Schiller.

Van der Palm. Loots.

Helmers.

The healthy and national spirit in which the ladies Wolff and Deken had written was adopted with great spirit by a novelist in the next generation, Adriaan Loosjes (1761-1818), a bookseller at Haarlem. His romantic stories of medieval life, especially his *Charlotte van Bourbon*, are curiously like shadows cast forward by the Waverley Novels, but he has little of Sir Walter Scott's historical truth of vision. His production was incessant and his popularity great for many years, but he was conscious all through that he was at best but a disciple of the authoresses of *Sara Burgerhart*. Another disciple whose name should not be passed over is Maria Jacoba de Neufville (1775-1856), author of *Little Duties*, an excellent story somewhat in the manner of Mrs Opie.

Loosjes.

A remarkable poet whose romantic genius strove to combine the power of Bilderdijk with the sweetness of Feith was Hendrik Tollens (1780-1856), whose verses have shown more vitality than those of most of his contemporaries. He struck out the admirable notion of celebrating the great deeds of Dutch history in a series of lyrical romances, many of which possess a lasting charm. Besides his folk-songs and popular ballads, he succeeded in a long descriptive poem, *A Winter in Nova*

Tollens.

Zembla, 1819. He lacks the full accomplishment of a literary artist, but his inspiration was natural and abundant, and he thoroughly deserved the popularity with which his patriotic ballads were rewarded. Willem Messchert (1790-1844), a friend and follower of Tollens, pushed the domestic and familiar tone of the latter to a still further point, especially in his genre poem of the *Golden Wedding*, 1825. Both these writers were natives and residents of Rotterdam, which also claims the honour of being the birthplace of Adrianus Bogaers (1795-1870), the most considerable poetical figure of the time. Without the force and profusion of Bilderdijk, Bogaers has more truth to nature, more sweetness of imagination, and a more genuine gift of poetry than that clamorous writer, and is slowly taking a higher position in Dutch literature as Bilderdijk comes to take a lower one. Bogaers printed his famous poem *Jochebed* in 1835, but it had then been in existence more than thirteen years, so that it belongs to the second period of imaginative revival in Europe, and connects the name of its author with those of Byron and Heine. Still more beautiful was his *Voyage of Heemskerk to Gibraltar* (1836), in which he rose to the highest level of his genius. In 1846 he privately printed his *Romances and Ballads*. Bogaers had a great objection to publicity, and his reputation was long delayed by the secrecy with which he circulated his writings among a few intimate friends. A poet of considerable talent, whose powers were awakened by personal intercourse with Bogaers and Tollens, was Antoni Christiaan Winand Staring (1767-1840), who first at the age of fifty-three came before the world with a volume of *Poems*, but who continued to write till past his seventieth year. His amorous and humorous lyrics recall the best period of Dutch song, and are worthy to be named beside those of Starter and Vondel.

Messchert.

Bogaers.

Staring.

After 1830 Holland took a more prominent position in European thought than she could claim since the end of the 17th century. In scientific and religious literature her men of letters showed themselves cognizant of the newest shades of opinion, and freely ventilated their ideas. The language resisted the pressure of German from the outside, and from within broke through its long stagnation and enriched itself, as a medium for literary expression, with a multitude of fresh and colloquial forms. At the same time, no very great genius arose in Holland in any branch of literature. The vast labours of Jakobus van Lennep (1802-1868) consist of innumerable translations, historical novels and national romances, which have gained for him the title of the leader of the Dutch romantic school.

19th century influences.

The novels of Sir Walter Scott had a great influence on Dutch literature, and the period was rich in historical novels. J. van der Hage (1806-1854), who wrote under the pseudonym of Jan Frederick Oltmans, was the author of the famous novels, *Castle Loevenstein in 1570* (1834), and *The Shepherd* (1838), both dealing with the national history. Other popular works were the antique romance *Charikles and Euphorion* (1831) of Petrus van Limburg-Brouwer (1795-1847), author of a history of Greek mythology; the *Mejuffrouw Lèclerc* (1849), and the *Portretten van Joost van den Vondel* (1876) of the literary historian and critic J.A.A. Alberdingk Thijm (1820-1899); the *Jan Faessen* (1856) of Lodewijk Mulder (b. 1822); and the *Lucretia d'Este* of W.P. Walters (1827-1891). Johannes Kneppelhout (1814-1885) sketched university life at Leiden in two amusing volumes of *Studententypen* (1841) and *Studentenleven* (1844). Reinier Cornelis Bakhuizen van den Brink (1810-1865) was the chief critic of the romantic movement, and Everhard Johannes Potgieter (1808-1875) its mystical philosopher and esoteric lyrical poet. The genius and influence of Potgieter were very considerable, but they were exceeded by the gifts of Nicolaes Beets (*q.v.*), author of the famous *Camera Obscura* (1836), a masterpiece of humour and character. Johannes Pieter Hasebroek (1812-1896), who has been called the Dutch Charles Lamb, wrote in 1840 an admirable collection of essays entitled *Truth and Dreams*. Willem Hofdijk (1816-1888) wrote a collection of ballads, *Kennemerland* (1849-1852), and a series of epic and dramatic poems in the romantic style. Bernard ter Haar (1806-1881), an Amsterdam pastor and, in the last year of his life, a professor at Utrecht, made a reputation as a poet by his *Johannes and Theagenes, a legend of apostolic times* (1838). His poems were collected in 1866 and 1879. A poet of unusual power and promise was lost in the early death of Pieter Augustus de Genestet (1803-1861). His *Eve of Saint Nicholas* appeared in 1849, and was followed by two volumes of verse in 1851 and 1861, the second of which contains some poems that have attained great popularity. Among the poets should not be forgotten two writers of verse for children, Jan Pieter Heije (1809-1876) and J.J.A. Gouverneur (1809-1889). Criticism was represented by W.J.A. Jonckbloet (1817-1885), author of an excellent *History of Dutch Literature* (1868-1870), C. Busken Huet, and Jan ten Brink (1834-1901), author of a great number of valuable works on literary history, notably of a history of Dutch literature (1897), and a series of biographies of 19th century Dutch writers (new edition, 1902). His novels

were collected in 13 volumes in 1885. With Isaak da Costa (*q.v.*), W.J. van Zeggelen (1811-1879), and J.J.L. Ten Kate (*q.v.*), the domestic tendency of Cats and Bilderdijk overpowered the influence of romanticism. The romantic drama found its best exponent in H.J. Schiminel (*q.v.*), who found a disciple in D.F. van Heyst (b. 1831), whose *George van Lalaing* was produced in 1873. Hugo Beijerman (ps. Glanor) produced a good play in his *Uitgaan* (1873), which was followed by other successes. Rosier Faessen (b. 1833) published his dramatic works in 1883.

Recent developments.

The recent literature of Holland presents the interesting phenomenon of an aesthetic revolution, carefully and cleverly planned, crowned with unanticipated success, and dying away in a languor encouraged by the complete absence of organized resistance. It would perhaps be difficult to point to another European example so well defined of the vicissitudes which keep the history of literature varied and fresh. For the thirty or forty years preceding 1880 the course of *belles-lettres* in Holland was smooth and even sluggish. The Dutch writers had slipped into a conventionality of treatment and a strict limitation of form from which even the most striking talents among them could scarcely escape. In 1880 the most eminent authors of this early period were ready to pass away, and they appeared to be preparing no successors to take their place. The greatest humorist of Holland, Nicolaas Beets, had drawn his works together. The most interesting novelist, Mrs Gertrude Bosboom-Toussaint, had in her last psychological stories shown an unexpected sympathy with new ideas. M.G.L. van Loghem (b. 1849), known under the pseudonym of “Fiore delle Neve,” made a great success by his *Een liefde in het Zuiden* (1881), followed in 1882 by *Liana*, and in 1884 by *Van eene Sultane*. Among the novelists were Gerard Keller (b. 1829), author of *From Home* (1867); Johan Gram (b. 1833), of whose novels *De Familie Schaffels* (1870) is the best known; Hendrik de Veer (1829-1890), author of *Frans Holster* (1871); Justus van Maurik (b. 1846), who wrote plays and short sketches of Amsterdam life (*Uit het Volk*, 1879), and Arnold Buning (b. 1846), whose *Marine Sketches* (1880) won great popularity. The colonial novels of N. Marie C. Sloot, born in Java in 1853, are widely read in Holland and Belgium, and many of them have been translated into German. A number of them were collected (Schiedam, 1900-1902) as *Romantische Werken*. Adèle Opzoomer (b. 1856; pseud. A.C.S. Wallis) made her first success in 1877 with *In Days of Strife*. The two leading Dutch men of letters, however, besides Beets and Douwes Dekker, were critics, Conrad Busken-Huet (*q.v.*) and Carel Vosmaer (*q.v.*). In Huet the principles of the 1840-1880 period were summed up; he had been during all those years the fearless and trusty watch-dog of Dutch letters, as he understood them. He lived just long enough to become aware that a revolution was approaching, not to comprehend its character; but his accomplished fidelity to literary principle and his wide knowledge have been honoured even by the most bitter of the younger school. Vosmaer, although in certain directions more sympathetic than Huet, and himself an innovator, has not escaped so easily, because he has been charged with want of courage in accepting what he knew to be inevitable.

In November 1881 there died a youth named Jacques Perk (1860-1881), who had done no more than publish a few sonnets in the *Spectator*, a journal published by Vosmaer. He was no sooner dead, however, than his posthumous poems, and in particular a cycle of sonnets called *Mathilde*, were published (1882), and awakened extraordinary emotion. Perk had rejected all the formulas of rhetorical poetry, and had broken up the conventional rhythms. There had been heard no music like his in Holland for two hundred years. A group of young men, united in a sort of esoteric adoration of the memory of Perk, collected around his name. They joined to their band a man somewhat older than themselves, Marcellus Emants (born 1848), poet, novelist and dramatist, who had come forward in 1879 with a symbolical poem called *Lilith*, which had been stigmatized as audacious and meaningless; encouraged by the admiration of his juniors, Emants published in 1881 a treatise on *Young Holland*, in the form of a novel in which the first open attack was made on the old school. The next appearance was that of Willem Kloos (born 1857), who had been the editor and intimate friend of Perk, and who now undertook to lead the army of rebellion. His violent attacks on recognized authority in aesthetics began in 1882, and created a considerable scandal. For some time, however, the new poets and critics found a great difficulty in being heard, since all the channels of periodical literature were closed to them. But in 1883 Emants expressed his intellectual aspirations in his poem *The Twilight of the Gods*, and in 1884 the young school founded a review, *De Nieuwe Gids*, which was able to offer a direct challenge to *De Gids*, the ultra-respectable Dutch quarterly. In this year a new element was introduced: hitherto the influences of the young Dutch poetry had chiefly come from England; they were those of Shelley, Mrs Browning, the Rossettis. In 1884 Frans Netscher began to imitate with avidity the French naturalists. For some time, then, the new Dutch literature became a sort

of mixture of Shelley and Zola, very violent, heady and bewildering. In 1885 the *Persephone and other Poems* of Albert Verwey (b. 1865) introduced a lyrical poet of real merit to Holland; Emants published his novel *Goudakker's Illusions*. This was the great flowering moment of the new school. It was at this juncture that the principal recent writer of Holland, Louis Couperus (b. 1863), made his first definite appearance. Born in the Hague, the opening years of his boyhood were spent in Java, and he had preserved in all his nature a certain tropical magnificence. In 1884 a little volume of lyrics, and in 1886 the more important *Orchids*, showed in Couperus a poet whose sympathies were at first entirely with the new school. But he was destined to be a novelist, and his earliest story, *Eline Vere* (1889), already took him out of the ranks of his contemporaries. In 1890 he published *Destiny* (known as *Footsteps of Fate* in the English version), and in 1892 *Ecstasy*. This was followed in 1894 by *Majesty*, in 1896 by *World-wide Peace*, in 1898 by *Metamorphosis*, a delicate study of character, in 1899 by Fidessa, in 1901 by *Quiet Force*, and in 1902 by the first volume of a tetralogy called *The Books of Small Souls*. Of all these later books, some of which have been translated into English, by Couperus, it is perhaps *Ecstasy* in which the peculiar quality of his work is seen at present to the greatest advantage. This is an extreme sensitiveness to psychological phenomena, expressed in terms of singular delicacy and beauty. The talent of Couperus is like a rich but simple tropical flower laden with colour and odour. He separated himself, as he developed, from the more fanatical members of the group, and addressed himself to the wider public. Another writer, of a totally different class, resembling Couperus only in his defiance of the ruling system of aesthetics, is the prominent Ultramontane politician and bishop, E.J.A.M. Schaepmann (born 1844), whose poem of *Aja Sofia* originally appeared in 1886. Recent novelists of some polemical vigour are H. Borel and van Hulzen. A very delightful talent was revealed by Frederick van Eeden in *Little Johnny* (1887), a prose fairy-tale; in *Ellen* (1891), a cycle of mysterious and musical elegies; and in *From the Cold Pools of Death* (1901), a very melancholy novel. Another poet of less refinement of spirit, but even greater sumptuousness of form, appeared in Helène Swarth-Lapidoth (born 1859), whose *Pictures and Voices* belongs to 1887. In that year also, in which Dutch literature reached its height of fecundity, was published the powerful and scandalous naturalistic novel, *A Love*, by L. van Deyssel (K.J.L. Alberdingk Thijm) who had hitherto been known chiefly as a most uncompromising critic. After 1887 the condition of modern Dutch literature remained comparatively stationary, and within the last decade of the 19th century was definitely declining. In 1889, it is true, a new poet Herman Gorter, made his appearance with a volume of strange verses called *May*, eccentric both in prosody and in treatment. He held his own without any marked advance towards lucidity or variety. Since the recognition of Gorter, however, no really remarkable talent has made itself prominent in Dutch poetry, unless we except P.C. Boutens, whose *Verses* in 1898 were received with great respect. Willem Kloos, still the acute and somewhat turbulent leader of the school, collected his poems in 1894 and his critical essays in 1896. L. van Deyssel, though an effective reviewer, continued to lack the erudition which years should have brought to him. Gorter remained tenebrous, Helène Swarth-Lapidoth still gorgeous; the others, with the exception of Couperus, showed symptoms of sinking into silence. The entire school, now that the struggle for recognition is over, and its members are accepted as little classics and the tyrants of taste, rests on its triumphs and seems to limit itself to a repetition of its old experiments. The leading dramatist of the close of the century was Hermann Heijermans (b. 1864), a Jew of strong realistic and socialistic tendencies, and the author of innumerable gloomy plays. His *Ghetto* (1898) and *Ora et Labora* (1901) particularly display his peculiar talent. Other notable products of drama are those of de Koo, whose *Tobias Bolderman* (1900) and *Vier Ton* (1901) are effective comedies. Dutch literature presented features of remarkable interest between 1882 and 1888, but since that time the general heightening of the average of merit, the abandonment of the old dry conventions, and a recognition of the artistic value of words and forms, are more evident to a foreign observer than any very important single expression of the national genius in literary art. An exception should be made in favour of the powerful peasant-stories of Steijn Streuvels (Frank Lateur), a young baker by trade, whose *Summer Land* (1901) was a most promising production.

AUTHORITIES.—Dr W.J.A. Jonckbloet, *Geschiedenis der Nederlandsche Letterkunde* (4th ed., 1889-1892); Dr J. ten Brink, *Kleine Geschiedenis der Nederlandschen Letteren* (Haarlem, 1877); and the same author's *Geschiedenis der Nederlandsche Letterkunde* (1897), with elaborate illustrations, facsimiles of MSS. and title pages, &c.; Dr J. van Vloten, *Schets van de Geschiedenis der Nederlandschen Letteren* (1879); L. Schneider, *Geschichte der niederländischen Literatur* (Leipzig, 1887); G. Kalff, *Literatuur en tooneel te Amsterdam in de zeventiende Eeuw* (Haarlem, 1895).

Interesting observations on the development of the new school in Dutch literature will be found in Willem Kloos, *Veertien Jaar Literatuur-Geschiedenis* (2 vols., 1880-1896), and in L.

van Deyssel, *Verzamelde Opstelen* (4 vols., 1890-1897), and in the series of monographs and bibliographies by Prof. J. ten Brink, *Geschiedenis der Noord-Nederlandsche Letteren in de XIX^e^ Eeuw* (Rotterdam, new ed. 1902, &c.).

(E. G.)

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1 Edited by J.F. Willems (Brussels, 1836).

2 Edited by C.P. Serrure and Ph. Blommaert (Ghent, 1852-1854).

3 Edited by Dr E. Verwijs (Leiden, 1868).

4 Edited by L.P.C. v. den Bergh (Leiden, 1846-1847).

5 Edited by P. Leendertz (Leiden, 1845-1847).

6 Edited by Dr Jul. Zacher in Haupt's *Zeitschrift für deutsches Altertum*, vol. ii. (Leipzig, 1842).

7 See Schotel, *Geschiedenis der Rederijkers in Nederland* (1862-1864), Amsterdam.

8 For Houwaert, see a study by K.F. Stallaert in the *Nederlandsch Museum* (1885).

9 Ed. Dr W.L. van Helten (1875).

10 For Coornhert see also J. ten Brink, *D.V. Coornhert en zijne wellevenkunst* (Amsterdam, 1860).

11 The best edition is by P. Vlaming (Amsterdam, 1723).

12 On Visscher and his daughters see N. Beets, *Al de gedichten van Anna Roemers Visscher* (1881), and E. Gosse, *Studies in the Literature of Northern Europe* (1879).

13 See J. ten Brink, *G.A. Brederoo* (Utrecht, 1859; 3rd ed. 1887-1888); also J.H.W. Unger, *Brederoo, eine Bibliographie* (1884). His works were edited (3 vols., 1885-1890) by J. ten Brink and others.

14 See R.A. Kollewijn's edition of *Samuel Coster's Werken* (1883).

15 See Dr W. Bisschop, *Justus van Effen ...* (Utrecht, 1859).

16 See Dr J. van Vloten, *Leven enwerken van Willem en Onno van Haren* (1874), and Busken-Huet, *De van Harens* (1875).

17 See Dr J. van Vloten, *Elisabeth Wolff ...* (1880).

DUTCH WARS, a convenient general title for a series of European wars between 1652 and 1678, which centred chiefly upon the political and commercial relations of the Netherlands with England and France. By Englishmen the term "Dutch Wars" is usually applied to the two purely naval wars of 1652-53 and 1663-67 and to the Anglo-Dutch or naval part of the war that began in 1672. But the last of these was part of a much wider struggle by land, known to Continental historians as the Dutch War of 1672-78, and the second part of this article deals with their struggle on the various frontiers of France, which was illustrated by the genius of Turenne and Condé.

I. Naval Operations

First Dutch War (*1652-53*).—Though political causes were at work, the main incentive to hostility between the peoples was commercial rivalry. It was therefore natural that their first encounters should have taken place between fleets engaged in convoying trade, or in endeavouring to intercept the trade of their enemy. Blows were exchanged before war was formally declared. On the 12th of May 1652 an English officer, Captain Young, stopped a Dutch convoy near the Start in order to enforce the salute to the English flag, which England then demanded from all who used the seas round her coast. The demand was resisted, and was only yielded to after a sharp conflict. Though the Dutch were still endeavouring to negotiate a peace with the Council of State which governed in the British Isles after the execution Of King Charles I., they made ready for war. In May forty sail of their war-ships appeared off Dover under command of Martin Harpertzoon Tromp—then the best known of their admirals. There were then 8 British ships in Dover under Rear-Admiral Nicholas Bourne, and 15 near Rye under Robert Blake, a member of parliament, and soldier who had gained a great reputation in the Civil War. Blake came into the Straits of Dover with his ships, and on the 19th of May a sharp collision took place between him and Tromp.

Bourne joined his countryman after the action began. The encounter, which the Dutch attributed to the English, and the English to the Dutch, made war inevitable, even if the relations of the two powers had allowed of the maintenance of peace. The first operations on both sides took the form of attacks on trade. Sir George Ayscue, who had lately returned from the West Indies, whither he had been sent to subdue the Royalist party in Barbados, had a sharp encounter with a Dutch convoy while on his way up Channel to the Downs, and had captured several prizes. The Council of State, being mainly anxious to destroy the Dutch trade and fisheries, began by reinforcing Blake, and sending him north to scatter the Dutch herring fleet. He had with him 60 vessels. Ayscue remained in the Downs with 16. Soon after Blake had gone, Tromp appeared in the Downs with a stronger force and threatened an attack on Ayscue. Want of wind prevented the operation. Tromp was also most intent on collecting the home-coming Dutch convoys, and seeing them safe into port. He therefore also sailed north to meet the Baltic trade. No meeting, however, took place between him and Blake, while bad weather scattered the Dutch. Their herring fishery was ruined for the year, and the outcry against Tromp was loud. He was notoriously no friend to the Loevenstein party then prevalent in Holland, and was displaced, his place being taken by Cornelius de Witt and Michiel Adriaanzoon de Ruyter. De Ruyter was sent into the Channel to convoy the outward-bound convoys, and meet the home-coming trade. On the 16th of August he had an encounter off Plymouth with Ayscue, whom he worsted, and then cruised at the Land’s End. The failure of Ayscue, who was not employed again in this war, induced the Council of State to send Blake, who had now returned from the north, into the Channel. He was not, however, more successful. His fleet was allowed to become scattered, and the Dutchman brought his convoy back safe after a partial action with Penn, Blake’s subordinate, on the 16th of August.

So far the operations had been confined to commerce destroying, or to the protection of trade by convoy. The next moves were more purely warlike. In the 27th of September the Dutch appeared in force off the mouth of the Thames, and Blake, whose fleet was collected in the Downs, stood to sea. On the 28th of September the first real battle of the war was fought off the Kentish Knock, a shoal opposite the coast of Essex. The English fleet standing to the north passed to west of the Dutch, and then turned. In the close engagement which followed, the Dutch were defeated. They did not fight well, and their failure was attributed in part to the discontent of their seamen with the removal of Tromp, and the unpopularity of de Witt. The states-general found it necessary to replace Tromp, who was at once sent to sea, again with the charge of seeing the outward-bound trade down Channel, and waiting for the homeward-bound. Blake had not remained on the coast of Holland, for the Council of State was still almost as intent as the Dutch on convoying trade or molesting the enemy’s. It brought its fleet back, and then divided the ships, sending some to the north with Penn, and keeping the others, 40 in all, with Blake in the Downs. Thus when Tromp appeared “at the back of the Goodwins” with a fleet of 80 war-ships and a crowd of merchant vessels on the 29th of November, Blake was not in a position to engage him with any assured prospect of success. But he made the attempt, and a hot engagement took place off Dungeness on the 30th. Two English vessels were taken, and the loss would have been greater if some of the English captains had not shown themselves backward. Many of the ships were merchant vessels pressed or hired, and commanded by their own skippers, who displayed little military spirit. Blake, who offered to resign, complained of the conduct of many of them, and some were punished. The Council of State saw the necessity for making a strong effort against Tromp, who ranged the Channel unopposed. Penn was recalled from the north, Richard Deane and George Monk were united with Blake as “admirals and generals at sea,” and a competent force was collected by the middle of February. The legend (for it is nothing more) that Tromp hoisted a broom at his mainmast-head to announce his intention to sweep the English off the sea, refers to this period.

On the 18th of February 1653 the Dutch admiral, who had now collected the homeward-bound convoys, was off Plymouth on his way back to Holland, and was attacked by the English fleet. The encounter, which lasted from the 18th to the 20th of February and ranged from Plymouth to Calais, is commonly named the “Three Days’ Battle” and was described by Clarendon as “stupendous.” The Dutch admiral brought his charge of merchant ships up Channel between him and the French shore. His war-ships were arranged in what was called a half-moon, and was in fact an obtuse angle with his flagship, the “Brederode,” at the apex. During the 18th and 19th, the attacks of the English though fierce were partial, and met with no great success. Tromp had to complain of the conduct of several of his captains. On the 20th his line was broken and some 60 of his merchant ships were captured. He anchored in some confusion in Calais roads. Yet by taking advantage of the dark, and the turn of the tide, he succeeded in carrying the great majority of his merchant ships home.

The English fleet had suffered severely, Blake himself was seriously wounded, and his colleague Deane was also hurt. Blake's wound disabled him greatly through the remainder of the war.

The Three Days' Battle was followed by a pause in the war. On the English side much damage had to be repaired. The administration of the navy, called upon as it was to deal with a war of unprecedented magnitude, was overtaxed by the obligation to refit ships, raise crews, and provide for the numerous sick or wounded. The close approach of the great political crisis in which Cromwell expelled the Long Parliament and established the Protectorate (17th of April 1653), may have had some influence. The fleet adhered to the new government on the 22nd of April. On the Dutch side much damage had to be repaired, and their complicated administration, by five independent admiralty boards, rendered rapid work impossible. They had also begun to realize that the quality of their ships was inferior. Reflection had further shown them that to hamper their fleets by imposing the direct protection of a great flock of merchant ships on them was not even an effectual way to protect commerce. When, therefore, Tromp was next sent to sea, it was with an unhampered fleet of war-ships, and for the purpose of bringing the English fleet to battle.

In spite of their heavy losses and their awkward administration, the Dutch were at sea before the end of May, and were close to the mouth of the Thames. The English fleet was not all ready. Part was in the river fitting out under Blake, who had not fully recovered from his wound. The bulk of it was, however, ready for service, and Blake's colleagues, Monk and Deane, attacked Tromp on the 2nd of June. Changes of wind made the battle somewhat confused. At first the English were to windward and they bore down with Rear-Admiral John Lawson in command of the van. Tromp, conscious that his ships were weaker in build, at first drew away, firing at the spars of the English ships in order to cripple them. A shift of the wind having given him the weather-gage, he concentrated a vigorous attack on Lawson. But the wind changed again and transferred the weather-gage to the English. Monk and Deane brought on a general action, in which the Dutch were outmatched, and forced to retreat to their own coast. Deane was slain by a cannon-shot by the side of his colleague Monk, who threw his cloak over the mangled body. Blake, informed by the sound of the cannon, which was audible on the Thames, that an action was in progress, hurried to sea and joined Monk in the pursuit of the Dutch on the 3rd of June. Tromp was driven into port and told the states-general that they must build better ships if they wished to beat the English at sea. Blake was forced by his still unhealed wound to go ashore, and the sole command was left to Monk, who remained cruising on the coast of Holland. The states-general now sought for peace, but Cromwell's demands were excessive, and could not be accepted without a surrender of the independence of Holland. A last effort was therefore made to regain the command of the sea. A great fleet was fitted out, partly at Flushing, partly in the Texel. Between the 26th and the 30th of July Tromp, by a series of skilful manœuvres, united the divided Dutch squadrons in the face of Monk's fleet, and on the 30th he stood out to sea with the wind in his favour, and gave battle. More than a hundred vessels were engaged on either side. The Dutch admiral manœuvred to keep, and Monk to gain, the weather-gage. The fleets passed on opposite tacks, and the Dutch tried to destroy their enemy with fire-ships without success. At last the weatherly qualities of the ships enabled Monk to break through the Dutch line, cutting some of their ships off from the others. The vessels thus cut off fled to the Maas, and Tromp with the others retired to the Texel. He was shot dead by a musket bullet in the retreat. The loss of life had been heavy on both sides. Six captains of Monk's fleet were slain. The Dutch now sought peace, and Cromwell offered better terms. During the fighting in the North Sea the Mediterranean trade of England had suffered severely. A squadron of trading ships and a few war vessels were blocked in Italian ports till some of them were taken and others forced to flee in March 1653 off Leghorn. The battle of the 31st of July was the last serious operation of the war, though peace was not formally made till some months later.

Second Dutch War (*1663-67*).—Although the formal declaration of war was not made by the government of King Charles II. till March 1665, the operations of the second Dutch War began in October 1663. The king and his brother the duke of York (James II.), who were largely interested in the slave-trading Guinea Company, were eager to remove the Dutch ports from the slave coast. They knew that war with the Republic, which had recovered very rapidly from the disasters of the war of 1652-53, would be popular with the trading classes in England. They relied also on the known reluctance of the Dutch government to go to war. In October 1663, therefore, a squadron was sent out under command of Sir Robert Holmes to attack the Dutch in Gambia and America. Their posts on the African coast were captured and New Amsterdam (now New York) taken. The states-general under the skilful management of the Grand Pensionary, John de Witt, retaliated by sending de Ruyter from

the Mediterranean, where he was cruising against the Barbary pirates, to follow Holmes. De Ruyter re-established the Dutch posts in Gambia, and, though he failed to retake New Amsterdam, did much injury to English trade before he returned to Holland. It may be pointed out that all colonial settlements belonged at that time exclusively to England, and the war was made entirely by her, and in her interest, Scotland and Ireland having no share. Numbers of Scotch sailors and of English deserters served in the Dutch fleet in this war—the bad administration of the navy and the constant ill-treatment of the crews having caused bitter discontent. Other attacks were made on Dutch trade during 1664, but the great operations of war did not begin till May 1665. In that month the duke of York was on the east coast of England with a fleet of 80 to 90 sail, composed, according to the custom of the time, of vessels of all sizes. A Dutch fleet of corresponding strength was sent to sea, under command of Baron Opdam van Wassenaer. In this war we do not find that the movements of fleets were subordinated to the work of providing convoy. They were sent to sea for the much more intelligent purpose of seeking out the enemy and driving him off. It was understood that the trade of the victor would be secure.

The first battle took place from 30 to 40 m. S.E. of Lowestoft, on the 3rd of June 1665. By the bad conduct of some of the captains in the centre of the Dutch line, the English, who fought with much spirit, were able to win a considerable victory. Opdam’s flagship was blown up and he perished. But the pursuit of the English fleet was feeble, and the retreat of the Dutch was ably covered by Cornelius van Tromp, son of Martin Tromp. Much scandal was caused by the mysterious circumstances in which an order to shorten sail was given in the English flagship, and doubts were expressed of the courage of the duke of York. He withdrew, or was withdrawn, from the active command at sea, and was replaced by the earl of Sandwich. On the Dutch side vigorous measures were taken to enforce good discipline. Four of the captains who had misbehaved on the 3rd of June were shot for cowardice, and others were dismissed. De Ruyter was named commander-in-chief, and John de Witt, or later his brother Cornelius, accompanied the admiral as delegate of the states-general to support his authority. The earl of Sandwich did nothing becoming a capable commander. Under his command the fleet made no attempt to blockade the Dutch coast, but was turned from its proper work to engage in a prize-hunting plot with the king of Denmark. The object was to plunder a Dutch convoy which had taken refuge at Bergen in Norway, then united to Denmark. The mutual interest of the associates led to the failure of the plot. Sir Thomas Teddeman, who was sent by Sandwich to attack the Dutch at Bergen, was suspected by the Danish governor of intending to play false, was fired on by the batteries, and was beaten off. De Ruyter covered the return of the trade to Holland. Sandwich, who had taken some prizes, unlawfully seized part of their cargoes for the benefit of himself and the other flag officers. A loud outcry was raised in the fleet and the country. Sandwich was displaced, and his command was transferred to Monk, with whom was associated the king’s cousin, Prince Rupert. The war had so far been unsuccessful for England. The victory of the 3rd of June was barren. Great injury was inflicted on English trade by Dutch cruisers, while the wasteful administration of his officers reduced the king’s treasury to much embarrassment. Winter suspended the movements of the fleets.

The year 1666 (called the *annus mirabilis*, for it included the plague and the fire of London) was marked by fierce fighting and changes of fortune. The French, who had signed a treaty with Holland in 1662, were reluctantly induced to intervene in the war as the enemies of England. By May a Dutch fleet of some eighty sail was at sea, preparing to watch the English, and unite with the French. Monk and Rupert were fitting out a fleet of nearly the same strength in the Thames. Under the influence of their fear of a French naval force King Charles’s ministers committed a great blunder. They detached Prince Rupert into the Channel with 20 ships, leaving Monk with only 57 to face the Dutch. The English commander put to sea, and found the enemy anchored on the coast of Flanders, in three divisions. He boldly attacked the van, hoping to cripple it before it could be helped by the centre and rear. This daring and well-judged move brought on the Four Days’ Battle of the 1st, 2nd, 3rd and 4th of June (O.S.). On the 1st the Dutch van, under Cornelius van Tromp, bore the brunt of the English attack. The fighting was very fierce. One English admiral, Sir William Berkeley, was slain, and another, Sir John Harman, was in great danger. Monk drew off at night without doing all the harm he had wished to the Dutch. During the 2nd of June the fleets engaged again, and on this day the self-will of Van Tromp, who commanded the rear in the battle, and the misconduct of some of the ships in the van, prevented De Ruyter from making full use of his numbers. Yet Monk was clearly overtaxed, and on the 3rd he prepared to retreat to the Thames. During this movement the “Prince” (100) carrying the flag of Admiral Sir Robert Ayscue, ran on the Galloper Sand, and was lost. In the evening Prince Rupert returned, and by hugging the coast of Kent to the south of the fleets, was able

to rejoin his colleague. Monk and Rupert renewed the battle on the 4th. It was fought with extreme fury, and terminated in the retreat of the English to the Thames with a loss of 20 ships and 6000 men.

The Dutch remained masters of the approach to the Thames till the 21st of July. They menaced the coast of Essex, and could easily have covered an invasion of England by a French army if Louis XIV. had been disposed to send one. Danger stimulated the English government to active exertions, and by the 21st of July Monk and Rupert were enabled by a happy combination of wind and tide to set to sea through the passage called the Swin. A storm which scattered both fleets delayed their meeting till the 25th of July. On that and the two succeeding days the Dutch were again defeated and driven into port. The English fleet then burnt the Dutch East India Company's dockyard at Terschelting, inflicting great loss. But the fruits of the victory were less than they would have been if it had been properly followed up. The British fleet withdrew to its own coast and within a month De Ruyter was at sea again, hoping to effect a junction with a French squadron. The French failed to keep tryst, and De Ruyter was watched by Rupert, who was now in sole command, Monk having been recalled to London to take command amid the confusion caused by the fire and the plague. Nor did the failure of King Charles's government to press the war with vigour end here. Embarrassed by want of money, on bad terms with his parliament, and secretly intent on schemes incompatible with a policy which could earn the approval of his subjects, the king preferred to spend what money he could command on raising troops, and neglected his fleet. Peace negotiations were begun with the Dutch, and the line-of-battle ships were put out of commission. A light squadron was, however, kept at sea to injure the Dutch trade, and as no armistice was arranged the Republic was free to continue warlike operations. The Dutch, being well aware of the disarmed condition of the English coast, sent out a powerful fleet again under the command of De Ruyter in June. It entered the Thames, forced the entrance of the Medway, and burnt both the dockyard at Chatham and a number of the finest ships in the navy which were lying in the river. A terrible panic prevailed in London, where an attack was expected. The Dutch were content with the injury they had done at Chatham, and dropped down the river. De Ruyter remained cruising in the Channel till the peace of Breda was signed in July. During the last months of the war Sir John Harman had fought a successful campaign in the West Indies against the French on whom he inflicted a severe defeat at Martinique on the 24th of June. By the terms of the peace England retained possession of New York, but the war, though it contained some passages glorious to her arms, was very disastrous to her commerce.

Third Dutch War (*1672-74*).—This war differed very materially in its inception and conduct from the first and second. They had been popular in England, and even the second gave Englishmen not a little to be proud of. The third was undertaken by the king in pursuit of a policy arranged between him and his cousin Louis XIV. Their avowed object was a partition of Holland, but there was a secret understanding that King Charles II. was to establish Roman Catholicism, and to make himself despotic in England, with the help of the French king. This hidden purpose was suspected, and the war became intensely unpopular with the English parliament and nation. Parliament would grant the king no supplies, and he could find the means of fitting out a fleet only by defrauding his creditors. The English fleets were, therefore, comparatively small, were ill-provided and had to co-operate with French squadrons which in the then raw state of King Louis' young navy, proved inefficient allies.

In this as in former wars, attacks on Dutch commerce preceded a formal declaration of hostilities. On the 13th of March 1672 Sir Robert Holmes fell upon a Dutch convoy under the command of Van Ness in the Channel. In the penury of the dockyards Holmes could not be provided with the force he was promised, and the enterprise was but partially successful. It was characteristic of the morality of his time and the spirit of the English navy as it had been shaped by the corrupt government of Charles II., that the officers concerned quarrelled violently and accused one another of fraud. A fleet of 60 sail was with difficulty got together under the duke of York, who now went to sea for the second time. The duke was joined in May, and at Portsmouth, by 40 French ships under the comte d'Estrées, a soldier and noble who had been made an admiral late in life. The allies entered the North Sea but did not take the offensive against the Dutch. The English were ill supplied, and were compelled to anchor at Southwold Bay on the coast of Suffolk in order to obtain water and provisions. The Dutch, who had to contend with an overwhelming French invasion on shore, nevertheless fitted out a fleet of 70 to 80 sail of the line and the command was given to De Ruyter. On the 28th of May 1672 he fell upon the allies in a N.W. wind. D'Estrées, who was stationed with his squadron at the south end of the line, went to sea on the port tack, heading to the S.E. The English, who constituted the centre and rear, stood out on the starboard tack. Thus the allies were at once divided into two widely separated bodies, and the Dutch admiral was

able to concentrate nearly his whole force on the centre division, which suffered severely. The flagship of the duke of York, the “Prince” (100), was so shattered that he was compelled to leave her, and go to the “St Michael.” The “Royal James” (100), the flagship of his second in command, the earl of Sandwich, after being much shattered by the Dutch artillery, was set alight by a fire-ship, and destroyed with enormous loss of life. The earl himself perished. His body was picked up three days afterwards, so disfigured that it was only recognized by the star on his coat. The ships at the head of the English line at last tacked to the support of the centre, and at evening De Ruyter drew off. A foolish attempt was made to claim his retreat as a victory, but the allies were too severely damaged to attempt an attack on the Dutch during the rest of the year. The Republic was so hard pressed by the French invasion that it had to land the gunpowder from its ships for the service of its army.

In 1673 the allies made an effort to invade Holland from the sea coast. Prince Rupert replaced the duke of York, who as a Roman Catholic was driven from office by the newly passed Test Act. He was supplied with 54 ships and was joined early in the year by d’Estrées with 27. Soldiers were embarked, and in May the allied fleet stood over to the Dutch coast. The distress of the Republic prevented it from equipping more than 55 ships, but the patriotism of the race was roused to white heat, and in De Ruyter they possessed an admiral of consummate skill and heroic character. He took up an anchorage at Schooneveld and stood on his guard. On the 28th of May Rupert and d’Estrées, believing that De Ruyter was too much afraid of their superior numbers to venture to sea, sent in a squadron of light vessels and fire-ships to attack him, but he took the offensive at once, scattering the light squadron, and falling with energy on the rest of the fleet, which, not being in expectation of a vigorous assault, was taken at a disadvantage. On this occasion the English placed the French in the centre, in order to avoid such a separation as had taken place in the battle at Southwold Bay. But the disposition made no difference in the result. De Ruyter concentrated on the van and centre of the allies, and in spite of his great inferiority of numbers was able to be superior at the point of attack. The allies were compelled to retreat, and De Ruyter, satisfied with having averted the invasion of his country, anchored at West-Kappel.

Seven days later, on the 4th of June, a second encounter took place. The French were now placed in the rear of the line as it engaged. The Dutch admiral, who had the advantage of the wind, fell on the English in the van and centre. His inferiority in numbers did not allow him to push his attack quite home, but he inflicted so much injury that the allies were forced to return to the Thames to refit. At the end of July the allies again appeared off the coast of Holland, bringing four thousand soldiers in the war-ships and two thousand in transports. De Ruyter’s fleet had been raised to 70 vessels, but the allies had also been reinforced and were 90 strong. On the 11th of August the Dutch admiral kept in the shallow waters of the coast looking for a favourable opportunity to attack. On the 11th of August the wind, which had been westerly, turned to the S.E., giving him the weather gage. The French division was leading, and De Ruyter fell furiously upon the English in the centre and rear. The French were kept in play by a small squadron under Bankert, while De Ruyter drove Prince Rupert in the centre out of the line, and in the rear Cornelius van Tromp fought a desperate duel with the English rear division commanded by Sir E. Spragge. The two admirals engaged in a species of personal conflict, and each was compelled to shift his flag to another vessel. While Sir E. Spragge, whose second flagship was shattered by the Dutch fire, was on his way to a third, his boat was sunk by a cannon shot and he was drowned.

The defeat of the allies was undeniable, and a violent quarrel broke out between them. Want of money, and the increasing violence of popular opposition to the French alliance, compelled the king to withdraw from the war. Peace was made in the following spring.

In this war, which presented no features of a creditable kind, the loss to English commerce from Dutch cruisers was so great that it was found necessary to suspend the clause of the navigation act which forbade the purchase of foreign-built vessels.

As England withdrew from her alliance with Louis XIV., the other powers of Europe, frightened by the growth of the aggressive French power, began to come forward to the support of Holland. The coalition then formed continued the struggle till 1678. But the war was conducted mainly on the land. The French king, who knew that his fleet was not as yet capable of meeting the Dutch single-handed, was content to withdraw his ships from the North Sea and the ocean. The Dutch, who had to pay subventions to their German allies, and to support a large army, could spare little for their fleet. For some time they willingly confined themselves to efforts to protect their commerce from French privateers. In 1674 a revolt of the people of Sicily against their Spanish rulers gave the French king an opportunity of seizing the island. Spain, unable to defend its possessions single-handed, appealed to the Dutch for naval help. In September 1675 De Ruyter was sent into the

Mediterranean with 18 sail of the line and four fire-ships. The force was inadequate, but it was all that Holland could spare. The Dutch admiral, who was hampered rather than helped by his Spanish allies, did his best to make good his weakness by skilful management. He cruised off Messina to intercept the supplies which were being brought to the French garrison by a fleet of 20 sail under the command of Abraham Duquesne. Conscious that he must spare his small force as much as possible, he abstained from such vigorous attacks as he had made in 1672 and 1673. When Duquesne appeared on the 7th of January 1676 near the Lipari Islands, De Ruyter allowed them to get the weather-gage, and on the 8th of January waited passively for their attack. The French, with more recklessness than was usual with them in later times, bore down on their enemy courageously but in some disorder. Their leading ships were severely mauled, and their whole force so crippled that they could make no pursuit of the Dutch when they drew off, their injured ships being towed by the Spanish galleys, in the late afternoon. Duquesne was able to reach Messina and join the French ships at anchor there. De Ruyter made his way to Palermo, which was in the hands of the Spaniards. One of his vessels sank on the way and he was reduced to 17. It is true that his allies provided him with 10 ships of their own, but the Spanish navy had sunk to abject inefficiency. Their commander, the marquis of Bayona, arrogantly insisted on occupying the centre of the line with his worthless squadron instead of allowing his ships to be scattered among the Dutch for support. When on the 22nd of April the allies, 27 strong, met the fleet of Duquesne, 29 ships, off Agosta, they attacked from windward. De Ruyter, who led the van, was mortally wounded. The Spaniards in the centre behaved very ill, and no victory was gained. The serious fighting was, in fact, confined to the vans of the two fleets. After the battle the allies retired to Syracuse, where De Ruyter died, and where their ships were mostly destroyed by the French a month later. Reinforcements sent out from Holland were stopped in the Straits of Gibraltar and blockaded in Cadiz. The French remained masters of the Mediterranean. In the meantime, however, angry disputes had arisen between France and England. King Louis XIV. enforced his belligerent rights at sea with as much disregard of neutral interests as was shown by England in later times. His naval officers insisted on making prize of all Dutch-built vessels found under the English flag. In 1678 war seemed imminent between France and England. King Louis then withdrew his soldiers from Sicily, and made the peace of Nijmwegen.

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(D. H.)

II. OPERATIONS ON LAND

The contemporary military history of Europe included, first, the war between France and Spain, 1654-59, usually called the Spanish Fronde, of which the most notable incident was the great battle of the Dunes fought on the 14th of June 1658 between the French and English under Turenne and the Spaniards under Condé, in which a contingent of Cromwell’s soldiers bore a conspicuous part. About the same time a war was fought in northern Europe (1655-60), celebrated chiefly for the three days’ battle of Warsaw (28th, 29th, 30th July 1656), and the successful invasion of Denmark by the Swedes, carried out from island to island over the frozen sea (February 1658), and culminating in a long siege of Copenhagen (1658-59). Between the second and third wars of England and the United Provinces came the short War of Devolution (1667-68)—a war of sieges in the Low Countries in which the French were commanded chiefly by Turenne. In 1668 the French under Condé made a rapid conquest of Franche-Comté. This was, however, given up at the peace. The war of 1672-78, the first of the three great wars of Louis XIV., was fought on a grander scale.

Invasion of Holland, 1672.—The diplomacy of Louis had, before the outbreak of war, deprived Holland of her allies—England (treaty of Dover, 1670), Sweden (treaty of Stockholm, 1672) and the emperor, and when he declared war on the United Provinces in March 1672, it seemed that the Dutch could offer little resistance. The French army under Louis in person started from Charleroi and marched down the Meuse unopposed. The

powerful Dutch fortress of Maastricht was masked, and the French then moved towards Düsseldorf. In the electorate of Cologne they were in friendly country, and the main army soon moved down the Rhine from Düsseldorf, the corps of Turenne on the left bank, that of Condé on the right. At the same time a corps under Marshal Luxemburg, composed of Louis' German allies (Cologne and Münster) moved from Westphalia towards Over-Yssel and Groningen. The Rhine fortresses offered but little resistance to the advance of Turenne and Condé. William of Orange with a weak field army tried to defend the Yssel-Rhine line, but the French rapidly forced the passage of the Rhine at Tollhuis (June 12th) and passed into the Betuwe (between the Leck and the Waal). Condé now advised a cavalry raid on Amsterdam, but Louis, acting on the suggestion of the war minister Louvois, preferred to reduce Nijmwegen, Gorinchem and other places, before entering Utrecht province. Condé's plan was, however, partially carried out by Count Rochefort, who with 1800 troopers captured successively Amersfoort and Naarden. His further progress was checked at Muyden, which the Dutch garrisoned in the nick of time, and he returned to the main army, taking Utrecht *en route*. Louis now moved on Amsterdam, brushing aside the feeble opposition which was offered, and it seemed that the French must achieve their object in one short campaign. But the Dutch people were roused. The month before, the citizens of Utrecht had refused to raze their suburban villas, and defence of the fortifications had consequently been impossible. Now, the dykes were cut and the sluices opened, and Amsterdam was covered by a wide inundation, against which the invader was powerless. At the same time the men of Zealand repulsed a French raid from Ath on Ardenburg, and this infraction of the neutrality of the Spanish Netherlands served but to raise up another enemy for Louis. Luxemburg too, at first successful, was repulsed before Groningen. A revolution placed William of Orange at the head of the government. The alliance of Brandenburg and the Mainz electorate had already been secured, and Spain, justly fearing for the safety of her Flemish possessions, soon joined them. The emperor followed, and Louis was now opposed, not by one state, but by a formidable coalition.

War against the Coalition.—In the autumn the war spread to the Rhine. No attempt could be made on Amsterdam until the ice should cover the floods. Turenne was therefore despatched to Westphalia and Condé to Alsace, while a corps of observation was formed on the Meuse to watch the Spanish Netherlands. But the coalition had not yet developed its full strength, and Turenne's skill checked the advance of the Imperialists under Montecucculi and of the Brandenburgers under the Great Elector. A war of manœuvre on the middle Rhine ended in favour of the French, and the allies then turned against the territories of Cologne and Münster, while William, disappointed in his hopes of joining forces with his friends, made a bold, but in the end unsuccessful, raid on Charleroi (September-December 1672). The allies in Germany were now not merely checked but driven from point to point by Turenne, who on this occasion displayed a degree of energy rare in the military history of the period. The troops of Cologne and Münster formed part of his army, other friends of Louis were preparing to take the field, and after a severe winter campaign, the elector, defeated in combat and manœuvre, was forced back to the Weser, and being but weakly supported by the Imperialists, found himself compelled to make a separate peace (June 6th, 1673). Turenne then turned his attention to the Imperialists who were assembling in Bohemia, and made ready to meet them at Wetzlar. Meanwhile the other French armies were fully employed. Corps of observation were formed in Roussillon and Lorraine. Condé in Holland was to renew his efforts against the Amsterdam defences; during the winter the demands of the war on the Rhine had reduced the French forces in the provinces to the size of a mere army of occupation.[1] Louis' own army, originally collected for the relief of Charleroi in December, advanced on Maastricht, and after a brief siege, in which Vauban directed the besiegers, captured this most important fortress (June 29th, 1673). But this was the last success of the French armies in the campaign. Condé made no headway against Amsterdam, and William retook Naarden (September 14th). Louis, after the capture of Maastricht led his army southwards into Lorraine and overran the electorate of Trier. But nothing of importance was gained, and Turenne's summer campaign was wholly unsuccessful.

Capture of Bonn.—From Wetzlar he moved to Aschaffenburg, Louis at the same time keeping back, for the intended conquest of Franche-Comté, many soldiers who would have been more usefully employed in Germany. Soon the Imperialists advanced in earnest, greatly superior in numbers. Marching via Eger and Nuremberg (September 3rd) on the Main, Montecucculi drew Turenne to the valley of the Tauber; then, having persuaded the bishop of Würzburg to surrender the bridge of that place, he passed to the right bank of the Main before Turenne could intervene. The Imperialists soon arrived at Frankfort, and the French position was turned. Montecucculi thus achieved one of the greatest objects of the

17th century strategist, the wearing down of the enemy in repeated and useless marches. The French retreat to the Rhine was painful and costly, and Montecucculi then passed that river at Mainz and made for Trier. Turenne followed, unable to do more than conform to his opponent's movements, and took post to defend Trier and Alsace. Thereupon Montecucculi turned northward to meet William of Orange, who evaded Condé's weak army and marched rapidly via Venló (22nd October) on Coblenz. The elector of Trier, who had not forgotten the depredations of Louis' army in the spring, followed the example of the bishop of Würzburg and gave a free passage at Coblenz. William and Montecucculi joined forces in the electorate and promptly besieged Bonn. This fortress fell on the 12th of November, and the troops of the coalition gained possession of an unbroken line from Amsterdam to the Breisgau, while Louis' German allies (Cologne and Münster), now isolated, had to make peace at once. William wintered in Holland, Montecucculi in Cologne and Jülich, and the Spaniards, who had served with William, in their own provinces of the Meuse. A century after the outbreak of the War of Independence the Dutch and the Spaniards are thus found making war as allies, a striking proof of the fact that all questions but those of dynastic interests had been effectually settled by the peace of Westphalia. Louis' allies were leaving him one by one. The German princes and the empire itself rallied to the emperor, Denmark joined the coalition (January 1674), the Great Elector re-entered the war, and soon afterwards England made peace.

1674.—In 1674 therefore Louis reluctantly evacuated those of the United Provinces occupied by his army. He had derived a considerable revenue from the enemy's country, and he had moreover quartered his troops without expense. The resources of the French government were almost intact for the coming campaign; the corps of observation in Roussillon was continued, and its commander, Marshal Schomberg, made a successful campaign against the Spaniards, and the war was carried even into Sicily. Condé, in the Spanish Low Countries, opposed with inferior forces the united army of Spaniards, Dutch and Austrians under William, and held the Meuse from Grave to Charleroi on the Sambre. The war in this quarter was memorable for Condé's last, and William's first, battle, the desperate and indecisive engagement of Seneffe (August 11th), in which the two armies lost one-seventh of their strength in killed alone. The French, however, in the course of the year 734
lost a few fortresses on the Meuse, including Grave and Huy. The king's part in the campaign was, as usual, a war of sieges; an army under his personal command overran Franche-Comté in six weeks, and Louis, aided by the genius of Vauban, reduced Besançon in nine days. Turenne's Rhine campaign began with an invasion of Germany, undertaken to prevent interference with Louis in Franche-Comté. Bournonville, the imperial commander who now replaced Montecucculi, lay in the Cologne and Trier electorates. An army of South Germans in the Breisgau, after an unsuccessful attempt to invade Alsace, moved northward to the Neckar valley with the intention of uniting with Bournonville, who was moving up the Rhine to meet them. Turenne determined to attack the southern army under the duke of Lorraine and Count Caprara before the junction could be effected. He crossed the Rhine at Philipsburg early in June, and on the 16th fell upon the inferior forces of Caprara in their entrenched position of Sinsheim. The result of the battle was a complete victory for the French, who followed up their success by driving a portion of Bournonville's army (on which the duke of Lorraine had rallied his forces) from the Neckar (action of Ladenburg near Heidelberg, July 7th). Turenne then laid waste the Palatinate, in order that it should no longer support an army, and fell back over the Rhine, ignoring the reproaches of the elector palatine, who vainly challenged him to a duel. This devastation has usually been considered as a grave stain on the character of the commander who ordered it, but Turenne's conception of duty did not differ in this respect from that of Cromwell, Marlborough, Wellington and the generals of the American Civil War. It was held to be necessary and expedient, and it was accordingly carried out. Bournonville's army near Frankfort was still to be dealt with, and the Great Elector and his Brandenburgers were rapidly approaching the Main valley. After a slight attempt to invade Lorraine, which Turenne easily stopped, the Imperialists suddenly recrossed the Rhine and marched rapidly into the neighbourhood of the Strassburg bridge.

Turenne's Winter Campaign in Alsace.—The magistrates of this city were not less amenable than had been the bishop of Würzburg in 1673. Bournonville obtained a free passage, and Turenne was too late to oppose him. The French general, however, determined to fight, as he had done at Sinsheim, to prevent the junction of the two hostile armies. The Great Elector was still in the Neckar valley when the battle of Enzheim (8 m. from Strassburg) was fought on the 4th of October. This time it was indecisive, and Bournonville's superior forces, soon augmented by the arrival of the elector, spread into Alsace. Turenne steadily retired to his camp of Dettweiler, unable for the moment to do more, and the

Germans took up winter quarters in all the towns from Belfort to Strassburg (October-November 1674). But Turenne was preparing for another winter campaign, the most brilliant in the great commander's career.

First he placed the fortresses of middle Alsace in a state of defence, to deceive the enemy. Then he withdrew the whole of the field army quietly into Lorraine. Picking up on his way such reinforcements as were available, he marched southward with all speed behind the Vosges, and in the last stages of the movement he even split up his forces into many small bodies, that the enemy's spies might be misled. After a severe march through hilly country and in the midst of snowstorms, the French reunited near Belfort, and without a moment's delay poured into Alsace from the south. The scattered Imperialists were driven towards Strassburg, every corps which tried to resist being cut off. Bournonville stood to fight at Mülhausen with such forces as he could collect (29th December 1674) but Turenne's men carried all before them. The advance continued to Colmar, where the elector, who was now in command of the Germans, stood on the defensive with forces equal to Turenne's own. The battle of Türkheim (5th of January 1675) nevertheless resulted in another and this time a decisive victory for the French; a few days after the battle Turenne could report that there was not a soldier of the enemy left in Alsace. His army now went into winter quarters about Strassburg, and drew supplies from the German bank of the Rhine and even from the Neckar valley (January 1675).

1675.—This opening of the campaign promised well, and Louis as usual took the field as early as possible. In the course of the spring (May-June) the king's army recaptured some of the lost fortresses of the Meuse and took in addition Liège and Limburg. The expeditionary corps in Sicily also gained some successes in this campaign, and Schomberg invaded Catalonia. On the Rhine was fought the last campaign of Turenne and Montecucculi. The elector having withdrawn his forces to Brandenburg (see SWEDEN: *History*), Montecucculi resumed command, and between Philipsburg and Strassburg the two great commanders manœuvred for an advantage, each seeking to cover his own country and to live upon that of the enemy. At last Turenne prevailed and had the Imperialists at a disadvantage on the Sasbach, where, in opening the action, he was killed by a cannon-shot (July 27th). The sequel showed how dependent was even the best organized army of the time upon the personality of its commander.

All the advantages won were hastily surrendered, and Montecucculi, sharply following up the retreat of the French, drove them over the Rhine and almost to the Vosges. At the same time the duke of Lorraine defeated Marshal Créqui (August 11th) at Conzer Brücke on the Moselle, and recaptured Trier (September 6th), which, as a set-off against Bonn, Turenne had taken in the autumn of 1673. The situation was more than alarming for the French, but Condé was destined to achieve a last success—for once a success of careful strategy and prudent manœuvre. Luxemburg was left in charge in Flanders, and the prince took command of the remnant of Turenne's old army and of the fugitives of Créqui's. Montecucculi's skill failed completely to shake his position, and in the end the prince compelled him to retire over the Rhine. Condé and Montecucculi retired from their commands at the close of the year, Turenne was dead, and a younger generation of commanders henceforward carried on the war.

1676.—In 1676 the naval successes of France in the Mediterranean enabled the corps under Marshal Vivonne in Sicily to make considerable progress, and he won an important victory at Messina on the 25th of March. Vivonne was made viceroy of Sicily. Louis himself, with his marshals and Vauban, conducted the campaign in the north. The town of Condé fell on the 26th of April, and the king then manœuvred against the prince of Orange in the neighbourhood of Valenciennes. An attempt made by the latter in the summer to besiege Maastricht was frustrated by Marshal Schomberg with a detachment of the king's army (August). Rochefort meanwhile covered the Meuse country and Luxemburg. Créqui, who had now returned from captivity (he had been taken after the battle of Conzer Brücke) opposed the Imperialists in Lorraine, but he was unable to prevent the fall of Philipsburg, which occurred on the 17th of September. The French now laid waste the land between the Meuse and Moselle for the same reason which brought about the devastation of the Palatinate in 1674, and the year closed with a war of manœuvre on the upper Rhine between the Imperialists under the duke of Lorraine and the French under Luxemburg.

1677.—The chief event of the campaign of 1677 in the Netherlands was the siege of Valenciennes, which fortress was invested by Louis in the first weeks of the campaigning season. Five marshals of France served under the king in this enterprise, but their advice was of less value than that of Vauban, whose plans the king followed implicitly, even so far as to order an assault *de vive force* against the unanimous opinion of the marshals. This

succeeded beyond Vauban's own expectation; the picked troops entrusted with the attack of an outwork forced their way into the town itself (March 17th). The success was followed by the siege of St Omer and the defeat of William's relieving army by the duke of Orleans (battle of Mont Cassel, April 11th, 1677). The summer campaign was a contest of skill between Luxemburg and William, which resulted in favour of the French. The prince of Orange failed in an attempt to take Charleroi, and Marshal D'Humières captured St Ghislain.

In Germany the credit of the French successes was due to Créqui, who was no longer the defeated general of Conzer Brücke, but the most successful of Turenne's pupils. He began by driving back the duke of Lorraine to the Rhine. Another attempt by the Lorraine family to reconquer their duchy was thus foiled, and at the same time a second imperial army under the duke of Saxe-Eisenach, which had crossed the Rhine by Philipsburg, was shut up in an island of the Rhine and forced to make terms with the French. A large reinforcement sent by the duke of Lorraine to the assistance of Saxe-Eisenach was completely defeated by Créqui in the battle of Kochersberg near Strassburg (October 7th) and the marshal followed up his successes by the capture of Freiburg on the 14th of November. During the year there was a brisk war in the West Indies, and also in Catalonia, where the French maintained the ground won by Schomberg in the previous campaign.

1678.—In 1678 Louis took the field in February. The skilful manœuvres of the French, whether due to Louis' own generalship or that of his advisers, resulted in the speedy capture of Ghent and Ypres (March), and the retention of the prizes in the usual war of posts which followed. The last battle of the war was fought at St Denis (outside Mons) between William and Luxemburg on the 14th of August, three days after the peace of Nijmwegen had been concluded. William sustained another defeat, but the battle was one of the most fiercely contested of the whole war. On the Rhine, Créqui began by winning the battle of Rheinfelden (July 6th), after which he inflicted upon the Imperialists another defeat at Gengenbach (July 23rd) and took Kehl. In the short campaign of 1679, before France and the empire had concluded peace, he was equally successful.

In Spain the French army under Marshal de Navailles had also made steady progress, and thus the last campaign was wholly in favour of the French. The peace of Nijmwegen gave Louis many of the Netherlands frontier fortresses, and little else. He was threatened by the intervention of England on the side of the coalition, and would have made peace earlier but for his reluctance to abandon his ally Sweden. The French army had, however, well established its reputation. Vauban was unique amongst the officers of his time, and Créqui and Luxemburg were not unworthy successors of Turenne and Condé. The two marshals added to their reputation in the "Reunion War" of 1680-84. Créqui died in 1684 at the age of sixty-one, Luxemburg's greatest triumph was won ten years later (see Grand Alliance, War of the). Vauban retired from active service as a marshal twenty-five years after the peace of Nijmwegen. But the interest of the war does not reside wholly in the personalities of the leaders. There were great commanders before Turenne and Condé. It is as the début of a new method of military organization and training—the first real test of the standing army as created by Louvois—that the Dutch War of 1672-79 is above all instructive.

(C. F. A.)

1 Marshal Luxemburg, who was left in command of the army in Holland during the winter of 1672-73, had indeed made a bold attempt to capture Leiden and the Hague by marching a corps from Utrecht across the frozen inundations. But a sudden thaw imperilled his force and he had to make a painful retreat along the dykes to Utrecht. Holland was again inundated in 1673.

DUTCH WEST INDIA COMPANY, THE (*De Westindische Compagnie*), a company founded by letters-patent from the Netherlands states-general dated the 3rd of June 1621. The purpose for which the company was formed was to regulate and protect the contraband trade already carried on by the Dutch in the American and African possessions of Spain and Portugal, and to establish colonies on both continents and their islands. By the terms of the charter the company was to be composed of five boards or branches, established in Amsterdam, Zealand, the Meuse (Rotterdam), the North Department (Friesland and Hoorn), and Groningen. Each was to be represented on the general governing board according to the importance of the capital contributed by it. Thus Amsterdam, which contributed four-

ninths of the capital, had eight directors on the board. Zealand, which subscribed two-ninths, had four. Rotterdam was represented by two directors, though it only contributed one-ninth. The northern district and Groningen, which each contributed one-ninth, appointed one director each. Another director was appointed by the states-general. In 1629 a ninth representative was given to Amsterdam, and the strength of the whole board was fixed at nineteen.

The company was granted the monopoly of the trade with America and Africa and between them, from the Arctic regions to the Straits of Magellan, and from the Tropic of Cancer to the Cape of Good Hope. The policy the company proposed to follow was to use its monopoly on the coast of Africa in order to secure the cheap and regular supply of negro slaves for the possessions it hoped to acquire in America. The trade was thrown open by the voluntary action of the company in 1638. The general board was endowed with ample power to negotiate treaties, and make war and peace with native princes; to appoint its officials, generals and governors; and to legislate in its possessions subject to the laws of the Netherlands. The states-general undertook to secure the trading rights of the company, and to support it by a subvention of one million guilders (about £100,000). In case of war the states-general undertook to contribute sixteen vessels of 300 tons and upwards for the defence of the company, which, however, was to bear the expense of maintaining them. In return for these aids the states-general claimed a share in the profits, stipulated that the company must maintain sixteen large vessels (300 tons and upwards) and fourteen “yachts” (small craft of 50 to 100 tons or so); required that all the company’s officials should take an oath of allegiance to themselves as well as to the board of directors; and that all despatches should be sent in duplicate to themselves and to the board.

The history of the Dutch West India Company is one of less prosperity than that of the Dutch East India Company. In early days the trade was not sufficient to meet the heavy expense of the armaments raised against Spain and Portugal. A compensation was found in the plunder of Spanish and Portuguese galleons and carracks. In 1628 the company’s admiral Piet Heijn captured a vast booty in the Spanish treasure-ships. But this source of profit was dried up by the success of the company’s cruisers, which destroyed their enemy’s trade. Profit had to be sought in the development of the colonies established on the continent of America. In this field the successes of the company were counterbalanced by not a few failures. The company was never able to secure the control of the supply of slaves from Africa. Its settlement of New Netherland was lost to England. In the West Indies it gained a valuable footing among the islands. It occupied St Eustatius in 1634, Curaçao with Bonaire and Aruba in 1634 and 1635, Saba in 1640 and St Martin in 1648. But its greatest conquests and its greatest losses were alike met on the continent of South America. After a first unsuccessful occupation in 1623 of Bahia, which was immediately retaken by a combined Spanish and Portuguese armament, the company obtained a firm footing in Pernambuco. The story of the wars which arose out of this invasion belongs to the history of Brazil. The company had been largely guided in its policy of assailing the Portuguese possessions by the advice of the Jews, who were numerous in Brazil, and who found means to communicate with their fellows in religion, the refugees in Amsterdam. The most prosperous period of the company was during the tolerant and liberal administration of Count John Maurice of Nassau-Siegen (1636-1644).

The monopolist tendency of all Dutch colonization, the religious hostility of the Roman Catholic Portuguese, and the support given by France and England to Portugal after her revolt from Spain, combined at last to make the position of the company in Brazil untenable. It resigned all claim on the country by the treaty of 1661. But though deprived of its establishment in Brazil, the company found a compensation in Surinam and Essequibo (Dutch Guiana), where there was no Spanish or Portuguese population to resist it, and where the resources of the country offered great profits. The advantages of the settlement in Guiana were not, however, reaped by the company founded in 1621. In 1674 it had become so embarrassed that it was dissolved, and reconstructed in 1675. The newly formed company continued to exploit the Dutch possessions in America till 1794, when they were all swept into the general reorganization consequent on the French invasion of Holland. The West India Company founded after the Napoleonic epoch in 1828 was only meant to develop trade, and was not successful.

AUTHORITIES.—P.M. Nitscher, *Les Hollandais au Brésil* (the Hague, 1853), the work of a Dutch author writing in French. See also Southey, *History of Brazil* (London, 1810), and E.B. O’Callaghan, *History of New Netherland* (New York, 1846-1848).

DUTENS, LOUIS (1730-1812), French writer, was born at Tours, of Protestant parents, on the 15th of January 1730. He went to London, where his uncle was a jeweller, and there obtained a situation as tutor in a private family. In this position he learnt Greek and mathematics, and studied oriental languages, also Italian and Spanish. He took orders, and was appointed chaplain and secretary to the English minister at the court of Turin in October 1758. In 1760-1762 he was chargé d'affaires at Turin. Lord Bute, before retiring from office in 1763, procured him a pension. He again went to Turin as chargé d'affaires; and during this second mission he collected and published a complete edition of the works of Leibnitz (Geneva, 6 vols., 1768) and wrote his *Recherches sur l'origine des découvertes attribuées aux modernes* (1766). On his return to England the duke of Northumberland procured him the living of Elsdon, in Northumberland, and made him tutor to his son. In 1775 he became a member of the French Academy of Inscriptions and a fellow of the Royal Society. Dutens was for a third time chargé d'affaires at Turin. He was in Paris in 1783, and returned to London the following year. He died in London on the 23rd of May 1812.

The principal works of Dutens were his *Recherches sur l'origine des découvertes attribuées aux modernes* (1766, 2 vols.); *Appel au bon sens* (London, 1777, 8vo), directed in defence of Christianity against the French philosophers, and published anonymously; *Explication de quelques médailles de peuples, de rois et de villes grecques et phéniciennes* (London, 1773); *Explication de quelques médailles du cabinet de Duane* (1774); *Troisième dissertation sur quelques médailles grecques et phéniciennes* (1776); *Logique, ou l'art de raisonner* (1773); *Des pierres précieuses et des pierres fines, avec les moyens de les connaître et de les évaluer* (Paris, 1776); *Itinéraire des routes les plus fréquentées, ou journal d'un voyage aux principales villes d'Europe* (Paris, 1775), frequently republished; *Considérations théologiques sur les moyens de réunir toutes les églises chrétiennes* (1798); *Œuvres mêlées*, containing his most important works published up to the date (London, 1797, 4 vols.); *L'Ami des étrangers qui voyagent en Angleterre* (1789, 8vo); *Histoire de ce qui s'est passé pour le rétablissement d'une régence en Angleterre* (1789); *Recherches sur le tems le plus reculé de l'usage des voûtes chez les anciens* (1795); *Mémoires d'un voyageur qui se repose* (Paris, 1786, 3 vols.). The first two volumes of the last-named work contain the life of the author, written in a romantic style; the third bears the title of *Dutensiana*, and is filled with remarks, anecdotes and bons mots. (See memoir of Dutens in the *Gentleman's Magazine* for 1812.)

DUTROCHET, RENÉ JOACHIM HENRI (1776-1847), French physiologist, was born at Château de Néon (Indre) on the 14th of November 1776, and died at Paris on the 4th of February 1847. In 1799 he entered the military marine at Rochefort, but soon left it to join the Vendean army. In 1802 he began the study of medicine at Paris; and he was subsequently appointed chief physician to the hospital at Burgos. After an attack of typhus he returned in 1809 to France, where he devoted himself to the study of the natural sciences. His scientific publications were numerous, and covered a wide field, but his most noteworthy work was embryological. His "Recherches sur l'accroissement et la reproduction des végétaux," published in the *Mémoires du muséum d'histoire naturelle* for 1821, procured him in that year the French Academy's prize for experimental physiology. In 1837 appeared his *Mémoires pour servir à l'histoire anatomique et physiologique des végétaux et des animaux*, a collection of all his more important biological papers.

DUTT, MICHAEL MADHU SUDAN (1824-1873), the greatest native poet of India in the 19th century, was born at Sagandari, in the district of Jessore in Bengal, on the 25th of January 1824. His father was a pleader in Calcutta, and young Madhu Sudan received his education in the Hindu college of Calcutta, and was the foremost among the distinguished young students of his day, many of whom lived to make their mark in the literature and social progress of their country. Madhu Sudan left the college in 1842, and in the following year ran away to avoid a marriage into which his father wished to force him, and embraced the Christian religion. Continuing his studies now in the Bishop's college, Madhu Sudan

learnt Greek and Latin and some modern European languages, and in 1848 went to Madras. There he wrote English verses, and married the daughter of a European indigo-planter, but was soon separated from her. He then united himself with an English lady, the daughter of an educational officer; and she remained true to him through life amidst all his misfortunes, and was the mother of the children he left. With her Madhu Sudan returned to Calcutta in 1856, and soon discovered that the true way for winning literary distinction was by writing in his own language, not by composing verses in English. His three classical dramas —*Sarmishtha*, *Padmavati*, and *Krishna Kumari*—appeared between 1858 and 1861, and were recognized as works of merit. But his great ambition was to introduce blank verse into Bengali. His knowledge of Sanskrit poetry, his appreciation of the Greek and Latin epics, and his admiration of Dante and of Milton, impelled him to break through the fetters of the Bengali rhyme, and to attempt a spirited and elevated style in blank verse. His first poem in blank verse, the *Tilottama*, was only a partial success; but his great epic which followed in 1861, the *Meghanad-Badha*, took the Indian world by surprise, and at once established his reputation as the greatest poet of his age and country. He took his story from the old Sanskrit epic, the *Ramayana*, but the beauty of the poem is all his own, and he imparted to it the pathos and sweetness of Eastern ideas combined with the vigour and loftiness of Western thought. In 1862 Madhu Sudan left for Europe. He lived in England for some years, and was called to the bar; and in 1867 returned to his country to practise as a barrister in Calcutta. But the poet was unfitted for a lawyer's vocation; his liabilities increased, his health failed, his powers declined. He still wrote much, but nothing of enduring merit. His brilliant but erratic life ended in a Calcutta hospital on the 29th of June 1873.

DUTY (from "due," that which is owing, O. Fr. *deu*, *dû*, past participle of *devoir*; Lat. *debere*, *debitum*; cf. "debt"), a term loosely applied to any action or course of action which is regarded as morally incumbent, apart from personal likes and dislikes or any external compulsion. Such action must be viewed in relation to a principle, which may be abstract in the highest sense (*e.g.* obedience to the dictates of conscience) or based on local and personal relations. That a father and his children have mutual duties implies that there are moral laws regulating their relationship; that it is the duty of a servant to obey his master within certain limits is part of a definite contract, whereby he becomes a servant engaging to do certain things for a specified wage. Thus it is held that it is not the duty of a servant to infringe a moral law even though his master should command it. For the nature of duty in the abstract, and the various criteria on which it has been based, see Ethics.

From the root idea of obligation to serve or give something in return, involved in the conception of duty, have sprung various derivative uses of the word; thus it is used of the services performed by a minister of a church, by a soldier, or by any employee or servant. A special application is to a tax, a payment due to the revenue of a state, levied by force of law. Properly a "duty" differs from a "tax" in being levied on specific commodities, transactions, estates, &c., and not on individuals; thus it is right to talk of import-duties, excise-duties, death-or succession-duties, &c., but of income-tax as being levied on a person in proportion to his income.

DU VAIR, GUILLAUME (1556-1621), French author and lawyer, was born in Paris on the 7th of March 1556. Du Vair was in orders, and, though during the greater part of his life he exercised only legal functions, he was from 1617 till his death bishop of Lisieux. His reputation, however, is that of a lawyer, a statesman and a man of letters. He became in 1584 counsellor of the parlement of Paris, and as deputy for Paris to the Estates of the League he pronounced his most famous politico-legal discourse, an argument nominally for the Salic law, but in reality directed against the alienation of the crown of France to the Spanish infanta, which was advocated by the extreme Leaguers. Henry IV. acknowledged his services by entrusting him with a special commission as magistrate at Marseilles, and made him master of requests. In 1595 appeared his treatise *De l'éloquence française et des raisons pour quoi elle est demeurée si basse*, in which he criticizes the orators of his day,

adding by way of example some translations of the speeches of ancient orators, which reproduce the spirit rather than the actual words of the originals. He was sent to England in 1596 with the marshal de Bouillon to negotiate a league against Spain; in 1599 he became first president of the parlement of Province (Aix); and in 1603 was appointed to the see of Marseilles, which he soon resigned in order to resume the presidency. In 1616 he received the highest promotion open to a French lawyer and became keeper of the seals. He died at Tonneins (Lot-et-Garonne) on the 3rd of August 1621. Both as speaker and writer he holds a very high rank, and his character was equal to his abilities. Like other political lawyers of the time, Du Vair busied himself not a little in the study of philosophy. The most celebrated of his treatises are *La Philosophie morale des Stoïques*, translated into English (1664) by Charles Cotton; *De la constance et consolation ès calamités publiques*,[1] which was composed during the siege of Paris in 1589, and applied the Stoic doctrine to present misfortunes; and *La Sainte Philosophie*, in which religion and philosophy are intimately connected. Pierre Charron drew freely on these and other works of Du Vair. F. de Brunetière points out the analogy of Du Vair's position with that afterwards developed by Pascal, and sees in him the ancestor of the Jansenists. Du Vair had a great indirect influence on the development of style in French, for in the south of France he made the acquaintance of Malherbe, who conceived a great admiration for Du Vair's writings. The reformer of French poetry learned much from the treatise *De l'éloquence française*, to which the counsels of his friend were no doubt added.

Du Vair's works were published in folio at Paris in 1641. See Nicéron, *Mémoires*, vol. 43; and monographs by C.A. Sapey (1847 and 1858).

1 Translated into English by Andrew Comt in 1622 as *A Buckler against Adversitie*.

DUVAL, ALEXANDRE VINCENT PINEUX (1767-1842), French dramatist, was born at Rennes on the 6th of April 1767. He was in turn sailor, architect, actor, theatrical manager and dramatist. He is the characteristic dramatist of the Empire, but the least ambitious of his dramas have best stood the test of time. *Les Projets de ménage* (1790), *Les Tuteurs vengés* (1794) and *Les Héritiers* (1796) have been revived on the modern French stage. Others among his plays, which number more than sixty, are *Le Menuisier de Livonie* (1805), *La Manie des grandeurs* (1817) and *Le Faux Bonhomme* (1821). In 1812 he was elected to the Academy. He died on the 1st of September 1842.

DUVAL, CLAUDE (1643-1670), a famous highwayman, was born at Domfront, Normandy, in 1643. Having entered domestic service in Paris, he came to England at the time of the Restoration in attendance on the duke of Richmond, and soon became a highwayman notorious for the daring of his robberies no less than for his gallantry to ladies. Large rewards were offered for his capture, and he was at one time compelled to seek refuge in France. In the end he was captured in London, and hanged at Tyburn on the 21st of January 1670. His body was buried in the centre aisle of Covent Garden church, under a stone with the following epitaph:—

"Here lies Du Vall: Reader if male thou art,
Look to thy purse: if female to thy heart."

A full account of his adventures, ascribed to William Pope, was reprinted in the *Harleian Miscellany*, and Samuel Butler published a satirical ode *To the Happy Memory of the Most Renowned Du Val*.

DUVENECK, FRANK (1848-), American figure and portrait painter, was born at Covington, Kentucky, on the 9th of October 1848. He was a pupil of Diez in the Royal Academy of Munich, and a prominent member of the group of Americans who in the ’seventies overturned the traditions of the Hudson River School and started a new art movement. His work shown in Boston and elsewhere about 1875 attracted great attention, and many pupils flocked to him in Germany and Italy, where he made long visits. After returning from Italy to America, he gave some attention to sculpture, and modelled a fine monument to his wife, now in the English cemetery in Florence.

DU VERGIER DE HAURANNE, JEAN (1581-1643), abbot of St Cyran, father of the Jansenist revival in France, was born of wealthy parents at Bayonne in 1581, and studied theology at the Flemish university of Louvain. After taking holy orders he settled in Paris, where he became known as a mine of miscellaneous erudition. In 1609 he distinguished himself by his *Question royale*, an elaborate answer to a problem casually thrown out by King Henry IV. as to the exact circumstances under which a subject ought to give his life for his sovereign. His learning was presently diverted into a more profitable channel. The Louvain of his time was the scene of many conflicts between the Jesuit party, which stood for scholasticism and Church-authority, and the followers of Michael Baius (*q.v.*), who upheld the mysticism of St Augustine. Into this controversy Du Vergier was presently dragged by his friendship with Cornelius Jansen, a young champion of the Augustinian party, who had come to Paris to study Greek. The two divines went off together to Du Vergier’s home at Bayonne, where he became a canon of the cathedral, and Jansen a tutor in the bishop’s seminary. Here they remained some years, intently studying the fathers. Eventually, however, Jansen went back to Louvain, while Du Vergier became confidential secretary to the bishop of Poitiers, and was presently made sinecure abbot of St Cyran. Thereafter he was generally called M. de St Cyran. At Poitiers he was brought into contact with Richelieu—as yet unknown to political fame, and simply the zealous young bishop of the neighbouring diocese of Luçon. Western Touraine being the headquarters of French Protestantism, the two prelates turned St Cyran’s learning against the Huguenots. He began to dream of reforming Catholicism on Augustinian lines, and thus defeating the Protestants by their own weapons. They appealed to primitive antiquity; he answered that his Church understood antiquity better than theirs. They appealed to the spirit of St Paul; he answered that Augustine had saved that spirit from etherealizing away, by coupling it with a high sacramental theory of the Church. They flung practical abuses in the teeth of Rome; he entered on a bold campaign to bring those abuses to an end. Before long, his reforming zeal involved him in many quarrels—so much so that he left Poitiers and settled down in Paris. Here he became widely known as a director of consciences, forming a particular friendship with the influential Arnauld family. But his general projects of reform were by no means allowed to sleep, though here he worked hand in hand with his old friend Jansen. Both traced the evils of their time to the Jesuits and Schoolmen. Their dialectic had corrupted theology; their hand-to-mouth utilitarianism had played havoc with traditional church-institutions. Accordingly, Jansen set to work to remedy one evil by writing a big book on St Augustine, the great master of theological method. St Cyran dealt with the other evil in an equally bulky treatise, the *Petrus Aurelius* (1633). This indicts the Jesuits for every sort and kind of misdemeanour. It deals much with what Pascal will presently call their *dévotion aisée*; but still more with crimes of a technical sort, especially their defiance of episcopal authority. Thereby the book gained for its author’s projects of reform a great deal of Gallican support. On the other hand, it gave much annoyance to Richelieu, now the all-powerful and extremely Erastian prime minister. After failing more than once to stop St Cyran’s mouth with a bishopric, he had him arrested as a disturber of ecclesiastical peace (14th of March 1638). He remained shut up in the castle of Vincennes until Richelieu’s death (December 1642). Then he was at once set free; but the long imprisonment had told heavily on his health, and he died of a stroke of apoplexy in October 1643.

St Cyran’s character has been always something of a puzzle. Many excellent contemporary judges were profoundly impressed; others, as one of them said, went away bewildered by this strange abbé, who never argued a question out, but leapt from one point to another in broken, incoherent phrases. Grace of expression he had none; perhaps no man of equal spiritual insight ever found it so hard to make his meaning clear, whether on paper or by word of mouth. On the other hand, Jansenism, considered as a practical religious revival, is

altogether his work. He dragged the Augustinian mysticism out of the Louvain classrooms, and made it a vital spiritual force in France. Without him there would have been no Pascal—no Provincial Letters, and no *Pensées*.

There is an excellent life of St Cyran by his secretary, Claude Lancelot, published at Cologne in two volumes, 1738. A selection of his *Lettres chrestiennes* was edited by his disciple, Robert Arnauld d'Andilly (Paris, 1645). An entirely different collection of *Lettres spirituelles* was printed at Cologne in 1744.

(ST C.)

DUVEYRIER, HENRI (1840-1892), French explorer of the Sahara, was born in Paris on the 28th of February 1840. His youth was spent partly in London, where he met Heinrich Barth, then preparing the narrative of his travels in the western Sudan. At the age of nineteen Duveyrier, who had already learnt Arabic, began a journey in the northern parts of the Sahara which lasted nearly three years. On returning to France he received, in 1863, the gold medal of the Paris Geographical Society, and in 1864 published *Exploration du Sahara: les Touareg du nord*. In the war of 1870 he was taken prisoner by the Germans. Subsequently he made several other journeys in the Sahara, adding considerably to the knowledge of the regions immediately south of the Atlas, from the eastern confines of Morocco to Tunisia. He also examined the Algerian and Tunisian *shats* and explored the interior of western Tripoli. Duveyrier devoted special attention to the customs and speech of the Tuareg, with whom he lived for months at a time, and to the organization of the Senussi. In 1881 he published *La Tunisie*, and in 1884 *La Confrérie musselmane de Sidi Mohammed Ben Alî-Es-Senôusi et son domaine géographique*. He died at Sevres on the 25th of April 1892.

DUX (Czech *Duchcov*), a town of Bohemia, Austria, 86 m. N.N.W. of Prague by rail. Pop. (1900) 11,921, three-fourths German. It is situated in the centre of an extensive and well-worked lignite deposit and manufactures glass, porcelain and earthenware. In Dux is a castle belonging to Count Waldstein, a kinsman of Wallenstein, which contains a picture gallery with two portraits of Wallenstein by Van Dyck, and a museum with a collection of arms and armour and several relics of the great general.

DUXBURY, a township of Plymouth county, Massachusetts, on Massachusetts Bay, 36 m. S.S.E. of Boston. Pop. (1890) 1908; (1905, state census) 2028. Area, 25.5 sq. m. Duxbury is served by the Old Colony system of the New York, New Haven & Hartford railway. In the township are the villages of Duxbury, South Duxbury, West Duxbury, North Duxbury, Island Creek and Millbrook. The soil is sandy, the surface of the country well wooded and broken by a number of ponds and creeks. Duxbury is a summer resort, with a large hotel at Standish Shore. Duxbury has a public library, and is the seat of the Powder Point school for boys, and Partridge Academy, founded in 1828 by a bequest of $10,000 from George Partridge of Duxbury, and incorporated in 1830. On Captain's Hill is the Standish Monument (begun in 1872), a circular tower, on an octagonal base, of rough Hallowell granite, surmounted by a statue of Miles Standish, 124 ft. from the ground. The Standish house, built in 1666 by Miles's son, Alexander, is still in existence. In South Duxbury is an old burying ground, in which the oldest marked grave is that of Jonathan Alden (d. 1697), son of John Alden. For many years there were important cod and mackerel fisheries here and Duxbury clams were famous; there were large shipyards in Duxbury in the 18th century and in the first half of the 19th. At present cranberries are the only product of importance. The first settlement was made here in 1631 by Miles Standish (to whom Captain's Hill was granted),

William Brewster, John Alden, and a few others. In 1632 a church was organized and the present name was adopted from Duxbury Hall, Lancashire, the old seat of the Standish family; the Indian name had been Mattakeeset. The township was incorporated in 1637; it originally included Bridgewater and parts of Pembroke and Kingston.

See Justin Winsor, *History of Duxbury* (Boston, 1849); and Laurence Bradford, *Historic Duxbury in Plymouth County* (Boston, 1900).

DVINA, the name of two rivers of European Russia.

1. The Northern Dvina, or *Dvina Syevernaya*, belongs to the basin of the White Sea, and is formed by the junction of the Sukhona and the Yug, which, rising, the former in the south-west and the latter in the south-east of the government of Vologda, meet in the neighbourhood of Velikiy-Ustyug, at a height of 300 ft. above the sea, in 61° 20′ N. and 46° 20′ E. The conjoint stream then flows N.W. to the Gulf of Archangel, which it reaches 50 m. below the city of Archangel. From its mouth to the confluence of the co-tributary streams the distance is about 470 m., and to the source of the Sukhona 780 m. The drainage area is estimated at 141,000 sq. m. Except at the rapids the current of the Dvina is comparatively slow, as the average fall per mile is only 9 in. Till its union with the Vychegda, a river which exceeds it in volume, it flows for the most part in a single, well-defined and permanent channel; but below that point it often splits into several branches, and not infrequently alters its course. In the neighbourhood of Archangel it divides into three distinct arms, which form a regular delta; but of these that of Berezov alone is navigable for sea-going vessels, and even it is impeded by a bar at the mouth, with not more than 14½ or 15½ ft. of water at full tide. Just above the point where the delta begins the river is joined by a large tributary, the Pinega, from the right. Above the confluence of the Vychegda the breadth is about 1750 ft.; below that point it widens out to 3500 ft.; and near Archangel it attains more than three times that measure. The channel is free from ice for about 174 days in the year. By means of the Duke Alexander of Württemberg Canal, the river is connected with the Neva and the Volga.

2. The Southern Dvina, or *Dvina Zapadnaya*, in German *Düna* and in Lettish *Daugava*, belongs to the Baltic basin, and takes its rise in a small lake about 800 ft. above the level of the sea, in the government of Tver, not far from the sources of the Volga and the Dnieper. After dividing Tver in part from Pskov in part, it skirts the east and south of the government of Vitebsk, separates part of the latter from Vilna, and then divides Vitebsk and Livonia from Courland, and disembogues in the southern end of the Gulf of Riga. Its length is 640 m. and it drains an area of 32,960 sq. m. From Dvinsk (Dünaburg) to Riga, a distance of 135 m., there is altogether a fall of 295 ft., of which 105 ft. are in the 40 m. from Jakobstadt to Friedrichstadt. In the lower part of its course the river attains an ordinary depth of 30 ft. and an average breadth of 1400 ft.; but during the spring flood it sometimes rises 14 ft. above its usual level, and its waters spread out to a mile in width. Near the mouth the river is usually free from ice for 245 days in the year, and in the government of Vitebsk for 229. It is navigable from the confluence of the Mezha (*i.e.* from Vitebsk) downwards, but the number of rapids and shallows greatly diminishes its value. Navigation can also be carried on by the following tributaries: the Usvyat, Mezha, Kasplya, Ulla, Disna and Bolder-aa. This river was formerly called the Khezin or Turunt, and at the present day it has the name of Polot among the White Russians. Salmon and lampreys abound in its waters.

(P. A. K.; J. T. Be.)

DVINSK, the official name since 1893 of Dünaburg, a town and fortress of western Russia, in the government of Vitebsk, 162 m. by rail N.W. of the city of Vitebsk, on the right bank of the Dvina (Düna), in 55° 53′ N. and 26° 23′ E., and at the intersection of two main railway lines—Riga-Smolensk and Vilna-St Petersburg. It is the chief strategic position for the defence of the Dvina. It consists of four portions—the main town, or fortress, the old suburb, the new suburb, and on the left bank of the river the village of Griva. Among the industrial

establishments are tanneries and breweries, saw-mills, flour-mills, brick and tile works and limekilns. The town is an important commercial centre, especially for flax, hemp, tallow and timber. The population increased from 25,764 in 1860 to 72,231 in 1900, consisting chiefly of Jews (about 30,000), Lithuanians and Letts.

Dünaburg was originally founded in 1278 by the Livonian Knights of the Sword, about 12 m. farther down the river than its present site, at a spot still known as the Old Castle or *Stariy Zamok*. In 1559 it was mortgaged by the grand-master of the Knights to Sigismund Augustus, king of Poland. Although captured in 1576 by Ivan the Terrible of Russia, it was again restored to Poland; and in 1582 Stephen Bathori, king of Poland, transferred the fortress to its present site. In the 17th century it was held alternately by the Swedes and the Russians. It was finally incorporated with Russia in 1772 on the first division of Poland. In July 1812 the *tête-de-pont* was vainly stormed by the French under Oudinot, but a few weeks afterwards the town was captured by them under Macdonald.

DVOŘÁK, ANTON (1841-1904), Bohemian musical composer, born at Nelahozeves (otherwise Mühlhausen) in Bohemia on the 8th of September 1841, was the son of Frantisek Dvořák, a small publican and village butcher. At the door of his father’s inn Dvořák first appeared as a practical musician, taking his place among the fiddlers who scraped out their “furiants” and other wild dances for the benefit of the holiday-making local beaux and belles. At the village school he learnt from Josef Spitz both to sing and to play the violin, with so much effect that soon he was able to assist in the parish church services. At twelve years old he was sent by his father to Zlonic, near Schlan, to an uncle, with whom he lived while passing through the higher-grade classes at school. Here, too, he was fortunate enough to find a valuable friend in A. Liehmann, organist and chief musician of the little town, a competent musician, who instructed the boy in elementary theory, organ and pianoforte playing. The theory studies, however, could not long be continued, since Liehmann soon acknowledged in his own dialect that the boy was extraordinarily full of promise (“Aus Tonda, dem Sappermentsbuben ’mal ’was werden könnte”), at the same time realizing that he could not do much to assist. But Dvořák soon left Zlonic for Böhmisch-Kamnitz, where he learnt German and advanced his musical studies under Hancke. A year later he was summoned to return to Zlonic to assist his father, who had set up in business there. But his craving for a musical career was not to be checked, and after considerable trouble with his father consent was obtained to his settling in Prague in order to devote himself entirely to music.

In October 1857 Dvořák entered the organ-school of the *Gesellschaft der Kirchenmusik*, where he worked for three years. The small financial aid his father was at first able to lend soon ceased, and after being in Prague but a few months Dvořák found himself practically thrown on his own resources. By playing the viola in a private orchestra and in various inns of the town he succeeded in obtaining a precarious livelihood. On the opening in 1862 of the Bohemian Interimstheater, Dvořák, with part of this band, formed the nucleus of the theatrical orchestra, and remained connected with it for eleven years, when he became organist of the church of St Adalbert. At this time his small stipend was augmented slightly by the fees of a few pupils, though the privations suffered by him and his wife (for he had recently married) must have been great. But in spite of financial worry and of the amount of time he had to devote to his professional duties and private pupils, Dvořák found leisure not only for his own studies of the classics, but also to compose. His work, like his daily life, was beset with difficulties, for he had not the means to provide himself with sufficient music-paper, much less to hire a pianoforte; and it is possible that several of his important early works would never have been written had it not been for the generosity of Karel Bendl, the composer, who helped him in many ways.

Dvořák himself said afterwards that he retained no recollection of much that he then composed. In and about 1864 two symphonies, a host of songs, some chamber-music, and an entire opera, *Alfred*, lay unheard in his desk. The libretto of this opera was made up from materials found in an old almanack. Most of these works were burnt long ago. In 1873 he made his first bid for popularity by his patriotic hymn *Die Erben des weissen Berges* (published many years later as Op. 30). Its reception was enthusiastic, and Dvořák’s subsequent works were eagerly awaited and warmly received on production. In 1874 his opera *König und Köhler* resulted in a fiasco at Prague, owing to its mixture of styles.

Nothing daunted, Dvořák recomposed the whole work in three months. In 1875, on the recommendation of Brahms and Hanslick, he obtained a stipend from the Kultus-Ministerium at Vienna, which freed him from care and enabled him to indulge in composition to his heart's content. Following on this success came a commission in 1877 for a series of Slavic dances, which took the public by storm. Immediately compositions, old and new, began to pour from the publisher. English sympathy was entirely won by the *Stabat Mater* in 1883, and increased by the symphonies in D, D mi., and F, G, and E mi. (*The American*), and the cantata *The Spectre's Bride*, based on K.J. Erben's elaboration of the Bohemian version of the saga treated in Burger's *Leonore*. The favourable effect produced by these works was somewhat chilled by the oratorio *St Ludmila*, a comparatively feeble work written "to suit English taste" for the Leeds Festival of 1886. The three overtures Opp. 91, 92, 93, failed to hold their place, but the pseudo-American symphony has become one of Dvořák's most popular works, and much of his chamber-music, of which there is abundance, seems quite permanent in its place in concert programmes. In 1892, after having frequently visited England, Dvořák became head of the National Conservatory of Music of America in New York. There he remained till 1895, when he returned to Prague, where he died on the 1st of May 1904.

Dvořák's music is characteristically national, though less purely so than that of Smetana. But in spite of his industry and dramatic talent not one of his operas has been really successful. A master of the orchestra and a composer of real individuality, he earned and deserved his place among the elect, not only by his great gifts, but by his abnormal energy in their development.

See W.H. Hadow, *Studies in Modern Music* (second series, 1908).

DWARAKA, Dwarka, or Jigat, a town of British India, in Baroda state, near the extremity of the peninsula of Kathiawar, Bombay. Pop. (1901) 7535. As the birthplace and residence of Krishna, it is the most sacred spot in this part of India, and its principal temple is visited annually by many thousand pilgrims. The approach from the sea is by a fine flight of stone steps, and the great spire rises to a height of 150 ft.

DWARF (A.S. *dweorg*, D. *dwerg*, Icel. *dvergr*), the term generally used to describe an extraordinarily under-sized individual of a race of normal stature (for dwarf-races see Pygmy.) In Scandinavian mythology the word connoted smallness and deformity, and was used of the elfins and goblins who were supposed to live on the mountains or in the bowels of the earth, and to be kings of metals and mines. The later use of the word certainly does not imply deformity, for many of the dwarfs of history have been singularly graceful and well formed. Dwarfishness is, however, often accompanied by disproportion of the limbs.

From the earliest historic times dwarfs attracted attention, and there was much competition on the part of kings and the wealthy to obtain the little folk as attendants. It is certain that members of the tiny Akka race of Equatorial Africa figured at the courts of the Pharaohs of the early dynasties and were much valued. Philetas of Cos, poet and grammarian (circa 330 B.C.), tutor of Ptolemy Philadelphus, was alleged to be so tiny that he had to wear leaden shoes lest he should be blown away. The Romans practised artificial dwarfing, and the Latin *nanus* or *pumilo* were terms alternatively used to describe the natural and unnatural dwarf. Julia, the niece of Augustus, had a dwarf named Coropas 2 ft. 4 in. high, and a freed-maid Andromeda who measured the same.

Various recipes for dwarfing children have been from time to time in vogue. The most effective, according to report, was to anoint the backbone with the grease of moles, bats and dormice. The stunting of the growth of stable-boys who aspire to jockey's honours is in no sense true dwarfing.

In later days there have been many dwarf-favourites at European courts. British tradition

has its earliest dwarf mentioned in the old ballad which begins “In Arthur’s court Tom Thumb did live”; and on this evidence the prototype of the modern Tom Thumb is alleged to have lived at the court of King Edgar. Of authentic English dwarfs the first appears to be John Jarvis (2 ft. high), who was page to Queen Mary I. Her brother Edward VI. had his dwarf Xit. But the first English dwarf of whom there is anything like an authentic history is Jeffery Hudson (1619-1682). He was the son of a butcher at Oakham, Rutlandshire, who kept and baited bulls for George Villiers, first duke of Buckingham. Neither of Jeffery’s parents was under-sized, yet at nine years he measured scarcely 18 in., though he was gracefully proportioned. At a dinner given by the duke to Charles I. and his queen he was brought in to table in a pie out of which he stepped, and was at once adopted by Henrietta Maria. The little fellow followed the fortunes of the court in the Civil War, and is said to have been a captain of horse, earning the nickname of “strenuous Jeffery” for his activity. He fought two duels—one with a turkey-cock, a battle recorded by Davenant, and a second with Mr Crofts, who came to the meeting with a squirt, but who in the more serious encounter which ensued was shot dead by little Hudson, who fired from horseback, the saddle putting him on a level with his antagonist. Twice was Jeffery made prisoner—once by the Dunkirkers as he was returning from France, whither he had been on homely business for the queen; the second time was when he fell into the hands of Turkish pirates. His sufferings during this latter captivity made him, he declared, grow, and in his thirtieth year, having been of the same height since he was nine, he steadily increased until he was 3 ft. 9 in. At the Restoration he returned to England, where he lived on a pension granted him by the duke of Buckingham. He was later accused of participation in the “Popish Plot,” and was imprisoned in the Gate House. He was released and shortly after died in the sixty-third year of his age.

Contemporary with Hudson were the two other dwarfs of Henrietta Maria, Richard Gibson and his wife Anne. They were married by the queen’s wish; and the two together measured only 2 in. over 7 ft. They had nine children, five of whom, who lived, were of ordinary stature. Edmund Waller celebrated the nuptials, Evelyn designated the husband as the “compendium of a man,” and Lely painted them hand in hand. Gibson was miniature painter to Charles I., and drawing-master to the daughters of James II., Queens Mary and Anne, when they were children. This Cumberland pygmy, who began his career as a page, first in a “gentle,” next in the royal family, died in 1690, in his seventy-fifth year, and is buried in St Paul’s, Covent Garden. The last court dwarf in England was Coppernin, a lively little imp in the service of the princess (Augusta) of Wales, the mother of George III. The last dwarf retainer in a gentleman’s family was the one kept by Mr Beckford, the author of *Vathek* and builder of Fonthill. He was rather too big to be flung from one guest to another, as used to be the custom at dinners in earlier days when a dwarf was a “necessity” for every noble family.

Of European court dwarfs the most famous were those of Philip IV. of Spain, the hunchbacks whose features have been immortalized by Velazquez. Stanislas, king of Poland, owned Nicholas Ferry (Bébé), who measured 2 ft. 9 in. He was one of three dwarf children of peasant parents in the Vosges. He died in his 23rd year (1764). But Bébé was not so remarkable as Richebourg, who died in Paris in 1858, at the age of 90. He was only 23 in. high. He began life as a servant in the Orleans family. In later years he was their pensioner. He is said to have been put to strange use in the Revolution—passing in and out of Paris as an infant in a nurse’s arms, but with despatches, dangerous to carry, in the little man’s baby-wrappings!

Of dwarfs exhibited in England, the most celebrated was the Pole, Borulwaski (1739-1837). At six he measured 17 in., and he finally in his thirtieth year reached 39 in. He had a sister shorter than himself by the head and shoulders. Borulwaski was a handsome man, a wit, and something of a scholar. He travelled over all Europe; and he—born in the reign of George II.—died in his well-earned retirement near Durham, in the reign of Victoria. Borulwaski lies buried at Durham by the side of the Falstaffian Stephen Kemble. The companionship reminds one of that of the dwarf skeleton of Jonathan Wild by the side of that of the Irish Giant, at the Royal College of Surgeons, London.

In the year in which Borulwaski died, Charles Stratton, better known as “General Tom Thumb,” was born. When twenty-five he was 31 in. high. In 1844 he appeared in England, where he had an extraordinary success. One result of his season at the Egyptian Hall, London, was to kill Haydon the painter. The latter presented his great work “The Banishment of Aristides” for exhibition in the same building. The public rushed to see the dwarf. He took £600 the first week, while Haydon’s masterpiece drew but £7, 13s. The result was that the artist committed suicide in despair. After extensive travel in both hemispheres, Stratton again visited England in 1857, but the dwarf man, despite many

personal and intellectual qualities, was less attractive than the dwarf boy. In the year 1863 the “General” married the very minute American lady, Lavinia Warren (born in 1842). He died on the 15th of July 1883.

Other modern dwarfs include Signor Hervio Nano, who played at the Olympic Theatre, London, in 1843; three Highlanders named MacKinlay, children of a Scots shepherd, the shortest of whom was 45 in.; a Spaniard, Don Francisco Hidalgo (29 in.); a Dutchman, Jan Hannema (28 in.); and Mary Jane Youngman (Australia), who at fifteen was 35 in. high. She was called the “dwarf-giantess” because she was 3 ft. 6 in. round the shoulders, 4 ft. 3 in. round the waist, and 2 ft. round the leg. Much interest was aroused by the so-called Aztec dwarfs who were exhibited in London in 1853. In 1867 the pair were married, the ceremony being publicly performed, and the bride’s robes are said to have cost no less than £2000. The wedding-breakfast was held at Willis’s Rooms. From time to time other dwarfs have been exhibited, among whom the most remarkable has been Che-mah, a Chinese, 42 years old and 25 in. high, who appeared in London in 1880. George Prout (1774-1851), who was less than 3 ft. high, was a well-known character in London in the early Victorian period, as a messenger at the Houses of Parliament.

See E.J. Wood, *Giants and Dwarfs* (1860).

DWARS, a tract of country in north-east India. It consists of two divisions, the Western Dwars and the Eastern Dwars, both of which belonged to Bhutan prior to the Bhutan War of 1864-65, as a result of which they passed into possession of the British, when the Eastern Dwars were assigned to Assam and the Western to Bengal. Since 1905 both divisions have been in the province of Eastern Bengal and Assam. The five Eastern Dwars, entitled respectively Bijni, Sidli, Chirang, Ripu and Guma, are situated in the Goalpara district of Eastern Bengal and Assam, forming a strip of flat country lying beneath the Bhutan mountains. It is an unhealthy country for natives as well as Europeans, and is but slightly developed. The Western Dwars form a region lying at the foot of the Himalayas in the north-east of the Jalpaiguri district of Eastern Bengal and Assam, which comprises nine *parganas*, namely, Bhalka, Bhatibari, Baxa, Chakao-Kshattriya, Madari, Lakshmipur, Maraghat, Mainaguri and Chengmari. The Western Dwars are an important centre of the tea-planting industry.

DWIGHT, JOHN (d. 1703), the first distinguished English potter. One can only surmise as to his parentage, and the date of his birth has been variously given from 1637 to 1640. Apparently he was educated at Oxford, and in 1661 was appointed registrar and scribe to the diocese of Chester, and the same year he proceeded to the degree of B.C.L. of Christ Church, Oxford. He resided at Chester for some time and acted as secretary to four successive bishops. One of these, Bishop Hall, also held the rectory of Wigan, Lancashire, and Dwight seems to have resided in that town, for three of his children were baptized there between 1667 and 1671. In 1671, while he still apparently resided in Wigan, he was granted his first patent for “the mistery of transparent earthenware, commonly known by the names of porcelain or china, and of stoneware, vulgarly called Cologne ware.” It is not believed that much, if any, work was executed at Wigan, and he probably removed to Fulham in 1672 or 1673, as his name first appears on the rate books of Fulham, where he was rated for a house in Bear Street, in 1674. He died in 1703, and his business was carried on by his descendants for some time, but with gradually diminishing success. It has been claimed that Dwight made the first porcelain in England, but there is no proof of this, though magnificent specimens of stoneware from his hands are in existence. The British Museum contains a number of the best of Dwight’s pieces, of which the finest is the bust of Prince Rupert. Other specimens are in the Victoria and Albert Museum, and they are sufficient to establish Dwight’s fame as a potter of the first rank. (See Ceramics.)

DWIGHT, JOHN SULLIVAN (1813-1893), American writer on music, was born at Boston and educated at Harvard. He became a Unitarian minister, but abandoned this career and joined the Brook Farm settlement as a teacher of music and other subjects. In 1848 he settled as a musical critic at Boston, being best known as founder and editor of the *Journal of Music* (1852-1881), the most important musical periodical that has been published in America. He died on the 5th of September 1893.

G.W. Cooke edited his letters (1898) and also wrote a memoir (1899).

DWIGHT, THEODORE WILLIAM (1822-1892), American jurist and educationalist, cousin of Theodore Dwight Woolsey and of Timothy Dwight, was born on the 18th of July 1822 in Catskill, New York. His father, Benjamin Woolsey Dwight (1780-1850), an abolitionist and reformer, removed to Clinton, New York, in 1831. The son graduated at Hamilton College in 1840, studied physics under S.F.B. Morse and John William Draper, taught classics in Utica Academy in 1840-1841, and studied law for one year at Yale. He was tutor at Hamilton in 1841-1846, at the same time teaching law privately; was made Maynard professor of law, history, civil polity, and political economy in 1846; received recognition of his law school in 1853, and in 1858 accepted an invitation to Columbia to teach law upon his own condition that he should found a law school. He himself *was* this school for many years and did not retire from it until 1891, about a year before his death, at Clinton, New York, on the 28th of June 1892. A man of broad culture, he was best known as the founder of a famous school of law and a famous method of legal teaching, which was broadly educational and which called for class-room recitation on the text-book studied and opposed mere “taking notes” on lectures. His questioning was illustrative and its method Socratic. He was a non-resident professor of law at Cornell (1869-1871) and at Amherst (1870-1872). Dwight was an able jurist, frequently acted as referee in difficult questions, in 1874-1875 was a judge of the New York commission of appeals, appointed to clear the docket of the court of appeals, and in 1886 was counsel for the five Andover professors charged with heresy. He was a prominent figure in political and social (notably prison) reforms; published in 1867 a *Report on the Prisons and Reformatories of the United States and Canada*, the result of his labours on a New York state prison commission with Enoch Cobb Wines (1806-1879); favoured indeterminate sentences; drew up the bill for the establishment of the Elmira Reformatory; and organized the State Charities Aid Association. He edited Sir Henry Maine’s *Ancient Law* (1864); was associate editor of the *American Law Register* and legal editor of *Johnson’s Cyclopaedia*; and published *Charitable Uses: Argument in the Rose Will Case* (1863).

DWIGHT, TIMOTHY (1752-1817), American divine, writer, and educationalist, was born at Northampton, Massachusetts, on the 14th of May 1752. His father, Timothy Dwight, a graduate of Yale College (1744), was a merchant, and his mother was the third daughter of Jonathan Edwards. He was remarkably precocious, and is said to have learned the alphabet at a single lesson, and to have been able to read the Bible before he was four years old. In 1769 he graduated at Yale College, and then for two years taught in a grammar school at New Haven. He was a tutor in Yale College from 1771 to 1777; and then, having been licensed to preach, was a chaplain for a year in a regiment of troops engaged in the War of Independence, inspiring the troops both by his sermons and by several stirring war songs, the most famous of which is “Columbia.” From 1778 until 1783 he lived at Northampton, studying, farming, preaching, and dabbling in politics. From 1783 until 1795 he was pastor of the Congregational church at Greenfield Hill, Connecticut, where he opened an academy which at once acquired a high reputation and attracted pupils from all parts of the Union. From 1795 until his death at Philadelphia, Pennsylvania, on the 11th of January 1817, he was president of Yale College, and by his judicious management, by his remarkable ability as a teacher—he taught a variety of subjects, including theology, metaphysics, logic, literature and oratory,—and by his force of character and magnetic personality, won great popularity and influence, and restored that institution to the high place from which it had fallen before

his appointment. President Dwight was also well known as an author. In verse he wrote an ambitious epic in eleven books, *The Conquest of Canaan*, finished in 1774, but not published until 1785; a somewhat ponderous and solemn satire, *The Triumph of Infidelity* (1788), directed against Hume, Voltaire and others; *Greenfield Hill* (1794), the suggestion for which seems to have been derived from John Denham's *Cooper's Hill*; and a number of minor poems and hymns, the best known of which is that beginning "I love thy kingdom, Lord." Many of his sermons were published posthumously under the titles *Theology Explained and Defended* (5 vols., 1818-1819), to which a memoir of the author by his two sons, W.T. and Sereno E. Dwight, is prefixed, and *Sermons by Timothy Dwight* (2 vols., 1828), which had a large circulation both in the United States and in England. Probably his most important work, however, is his *Travels in New England and New York* (4 vols., 1821-1822), which contains much material of value concerning social and economic New England and New York during the period 1796-1817.

> See W.B. Sprague's "Life of Timothy Dwight" in vol. iv. (second series) of Jared Sparks's *Library of American Biography*, and especially an excellent chapter in Moses Coit Tyler's *Three Men of Letters* (New York, 1895).

His fifth son, Sereno Edwards Dwight (1786-1850), born in Greenfield Hill, Connecticut, graduated at Yale in 1803, was a tutor there in 1806-1810, and successfully practised law in New Haven in 1810-1816. Licensed to preach in 1816, he was the chaplain of the United States Senate for one year, was pastor of the Park Street church, Boston, in 1817-1826, and in 1833-1835 was president of Hamilton College, Clinton, New York. His career was wrecked by accidental mercury poisoning, which interfered with his work in Boston and at Hamilton College, and made his life after 1839 solitary and comparatively uninfluential. His publications include *Life and Works of Jonathan Edwards* (10 vols., 1830); *The Hebrew Wife* (1836), an argument against marriage with a deceased wife's sister; and *Select Discourses* (1851); to which was prefixed a biographical sketch by his brother William Dwight (1795-1865), who was also successively a lawyer and a Congregational preacher.

President Dwight's grandson, Timothy Dwight (1828-), a famous preacher and educationalist, was born at Norwich, Connecticut, on the 16th of November 1828. He graduated at Yale in 1849, continued his studies there and at Bonn and Berlin, was professor of sacred literature and New Testament Greek in the Yale Divinity School from 1858 to 1886, was licensed to preach in 1861, and from 1886 to 1899 was president of Yale, which during his administration greatly prospered and became in name and in fact a university. Dr Dwight was also a member in 1876-1885 of the American committee for the revision of the English Bible, was an editor from 1866 to 1874 of the *New Englander*, which later became the *Yale Review*, and besides editing and annotating several volumes of the English translation of H.A.W. Meyer's *Kritisch-exegetischer Kommentar zum Neuen Testament*, and writing many magazine articles, published a collection of sermons entitled *Thoughts of and for the Inner Life* (1899).

DYAKS, or Dayaks, the name given to the wild tribes found in Borneo by the Malays on their first settlement there. Whether they are the aborigines of the island or the successors of a Negrito people whom they expelled is uncertain. If the latter, they are descendants of an early pre-Malayan immigration. In any case, though regarded by the Malays as aliens, the Dyaks are of the same stock as the Malays. For themselves they have no general name; but, broken as they are into numerous tribes, they are distinguished by separate tribal names, many of which seem to be merely those of the rivers on which their settlements are situated. Sir Harry Keppel, who attempted to form a classification of the Dyaks according to their ethnographical affinity, divides them into five principal branches. The first of these, which he calls the north-western, includes the natives of Sadong, Sarawak, Sambas, Landak, Tayan, Melionow and Sangow. They all speak the same language, and are remarkable for their dependence on the Malay princes. The second branch, which is called emphatically the Malayan from its greater retention of Malay characteristics, occupies the north coast in Banting, Batang-Lupar, Rejang and part of the valley of the Kapuas. To the third or Parian branch belong the Dyaks of the rivers Kuti and Passir, who are said to speak a language like that of Macassar. The fourth consists of the Beyadjoes, who are settled in the valley of the Banjermassin; and the fifth and lowest comprises the Manketans and Punans, who are still nomadic and ignorant of agriculture.

Physically the Dyaks differ little from the Malays except in their slimmer figure, lighter colour, more prominent nose and higher forehead. In disposition they are as cheerful as the Malay is morose. The typical Dyak is rather slightly built, but is active and capable of enduring great fatigue. His features are distinctly marked and often well formed. The forehead is generally high, and the eyes are dark; the cheek-bones are broad; the hair is black, and the colour of the skin a pure reddish brown, frequently, in the female, approaching the Chinese complexion. The beard is generally scanty, and in many tribes the men pull out all the hair of the face. Both sexes file, dye, and sometimes bore holes in the teeth and insert gold buttons. In dress there is considerable variety, great alterations having resulted from foreign influence. The original and still prevailing style is simple, consisting of a waistcloth, generally of blue cotton, for the men, and a tight-fitting petticoat for the women, who acquire a peculiar mincing gait from its interference with their walking. The favourite ornaments of both sexes are brass rings for the legs and arms, hoops of rattan decorated in various ways, necklaces of white and black beads, and crescent-shaped ear-rings of a large size. The lobes of the ears are distended sometimes nearly to the shoulders by disks of metal and bits of stick. Tattooing is practised by most of the tribes, and the skulls of infants are artificially deformed. The men usually go bare-headed, or wear a bright-coloured kerchief. The custom of betel-chewing being most universal, the betel-pouch is always worn at the side. The weapons in use are a curved sword and a long spear. The bow is unknown, but its place among some tribes is partly supplied by the blowpipe, in the boring of which they show great skill. When going to war the Dyak wears a strong padded jacket, which proves no bad defence. A curious custom among some tribes is the imprisonment of young girls for two or three years before puberty, during which time they are not allowed to see even their mothers.

The Dyak is decidedly intelligent, has a good memory and keen powers of observation, is unsuspicious and hospitable, and honest and truthful to a striking degree. The various tribes differ greatly in religious ceremonies and beliefs. They have no temples, priests or regular worship; but the father of each family performs rites. A supreme god, Sang-Sang, seems generally acknowledged, but subordinate deities are supposed to watch over special departments of the world and human affairs. Sacrifices both of animals and fruits—and in some cases even of human beings—are offered to appease or invoke the gods; divination of various kinds is resorted to for the purpose of deciding the course to be pursued in any emergency; and criminals are subjected to the ordeal by poison or otherwise. Offerings are made to the dead, and there is a very strong belief in the existence of evil spirits, and all kinds of calamities and diseases are ascribed to their malignity. Thus almost the whole medical system of the Dyaks consists in the application of appropriate charms or the offerings of conciliatory sacrifices. Many of those natives who have had much intercourse with the Malays have adopted a kind of mongrel Mahommedanism, with a mixture of Hindu elements. The transmigration of souls seems to be believed in by some tribes; and some have a system of successive heavens rising one above the other very much in the style of the Hindu cosmogony. In the treatment of their dead much variety prevails; they are sometimes buried, sometimes burned, and sometimes elevated on a lofty framework. The Dyaks have no exact calculation of the year, and simply name the months first month, second month, and so on. They calculate the time of day by the height of the sun, and if asked how far distant a place is can only reply by showing how high the sun would be when you reached it if you set out in the morning.

In agriculture, navigation, and manufactures they have made some progress. In a few districts a slight sort of plough is used, but the usual instrument of tillage is a kind of cleaver. Two crops, one of rice and the other of maize or vegetables, are taken, and then the ground is allowed to lie fallow for eight or ten years. The inland Dyaks collect the forest products, rattan, gutta-percha, beeswax and edible birds’ nests, and exchange them for clothing or ornaments, especially brass wire or brass guns in which consists the wealth of every chief. They spin and weave their own cotton, and dye the cloth with indigo of their own growing. Their iron and steel instruments are excellent, the latter far surpassing European wares in strength and fineness of edge. Their houses are neatly built of bamboos, and raised on piles a considerable height from the ground; but perhaps their most remarkable constructive effort is the erection of suspension bridges and paths over rivers and along the front of precipices, in which they display a boldness and ingenuity that surprise the European traveller. In the centre of most villages is the communal house where the unmarried men live, which serves as a general assembly hall. Some have a circuit of no less than 1000 ft. One on the banks of the Lundi was 600 ft. long and housed 400 persons.

The Dyaks have always been notorious for head-hunting, a custom which has now been largely suppressed. It is essentially a religious practice, the Dyak seeking a consecration for

every important event of his life by the acquisition of one or more skulls. A child is believed ill-fated to whose mother the father has not at its birth presented skulls. The young man is not admitted to full tribal rights, nor can he woo a bride with any hope of success, until he has a skull or more to adorn his hut; a chief's authority would not be acknowledged without such trophies of his prowess. The strictest rules govern head-hunting; a period of fasting and confession, of isolation in a taboo hut, precedes the expedition, for which the Dyak clothes himself in the skins of wild beasts and puts on an animal mask. The Dyak curiously enough prefers the head of a fellow-tribesman, and the hunt is usually one of ambush rather than of open combat. Among some tribes it was not sufficient to kill the victim. He was tortured first, his body sprinkled with his own blood, and even his flesh eaten under the eyes of priests and priestesses who presided over the rites. Skulls, especially those of enemies, were held in great veneration. At meals the choicest morsels were offered them: they were supplied with betel and tobacco: fulsome compliments and prayers for success in battle addressed to them. Head-hunting at one time threatened the very existence of the race; but in spite of their reformation in this respect the Dyaks are not on the increase, a fact for which A.R. Wallace accounts by the hard life the women lead and their consequent slight fecundity.

The Dyaks speak a variety of dialects, most of which are still very slightly known. The tribes on the coast have adopted a great number of pure Malay words into common use, and it is often hard to ascertain their own proper synonyms. The American missionaries have investigated the dialects of the west coast (Landak, &c.), and their Rhenish brethren have devoted their attention to those of the south, into one of which (that of Pulu Petak) a complete translation of the Bible has been made. Mr Hardeland, the translator, has also published a Dyak-German dictionary.

DYCE, ALEXANDER (1798-1869), English dramatic editor and literary historian, was born in Edinburgh on the 30th of June 1798. After receiving his early education at the high school of his native city, he became a student at Exeter College, Oxford, where he graduated B.A. in 1819. He took holy orders, and became a curate at Lantegloss, in Cornwall, and subsequently at Nayland, in Suffolk; in 1827 he settled in London. His first books were *Select Translations from Quintus Smyrnaeus* (1821), an edition of Collins (1827), and *Specimens of British Poetesses* (1825). He issued annotated editions of George Peele, Robert Greene, John Webster, Thomas Middleton, Marlowe, and Beaumont and Fletcher, with lives of the authors and much illustrative matter. He completed, in 1833, an edition of James Shirley left unfinished by William Gifford, and contributed biographies of Shakespeare, Pope, Akenside and Beattie to Pickering's Aldine Poets. He also edited (1836-1838) Richard Bentley's works, and *Specimens of British Sonnets* (1833). His carefully revised edition of John Skelton, which appeared in 1843, did much to revive interest in that trenchant satirist. In 1857 his edition of Shakespeare was published by Moxon; and the second edition, a great improvement on the old one, was issued by Chapman & Hall in 1866. He also published *Remarks on Collier's and Knight's Editions of Shakespeare* (1844); *A Few Notes on Shakespeare* (1853); and *Strictures on Collier's new Edition of Shakespeare* (1859), a contribution to the Collier controversy (see Collier, John Payne), which ended a long friendship between the two scholars. He was intimately connected with several literary societies, and undertook the publication of Kempe's *Nine Days' Wonder* for the Camden Society; and the old plays of *Timon* and *Sir Thomas More* were published by him for the Shakespeare Society. He was associated with Halliwell-Phillips, John Payne Collier and Thomas Wright as one of the founders of the Percy Society, for publishing old English poetry. Dyce also issued *Recollections of the Table Talk of Samuel Rogers* (1856). He died on the 15th of May 1869. He had collected a valuable library, containing amongst other treasures many rare Elizabethan books, and this collection he bequeathed to the South Kensington Museum. He displayed untiring industry, abundant learning, and admirable critical acumen in his editions of the old English poets. His wide reading in Elizabethan literature enabled him to explain much that was formerly obscure in Shakespeare; while his sound judgment was a check to extravagance in emendation. While preserving all that was valuable in former editions, Dyce added much fresh matter. His *Glossary*, a large volume of 500 pages, was the most exhaustive that had appeared.

DYCE, WILLIAM (1806-1864), British painter, was born in Aberdeen, where his father, a fellow of the Royal Society, was a physician of some repute. He attended Marischal College, took the degree of M.A. at sixteen years of age, and was destined for one of the learned professions. Showing a turn for design instead, he studied in the school of the Royal Scottish Academy in Edinburgh, then as a probationer (not a full student) in the Royal Academy of London, and thence, in 1825, he proceeded to Rome, where he spent nine months. He returned to Aberdeen in 1826, and painted several pictures; one of these, “Bacchus nursed by the Nymphs of Nysa,” was exhibited in 1827. In the autumn of that year he went back to Italy, showing from the first a strong sympathy with the earlier masters of the Florentine and allied schools. A “Virgin and Child” which he painted in Rome in 1828 was much noticed by Overbeck and other foreign artists. In 1829 Dyce settled in Edinburgh, taking at once a good rank in his profession, and showing considerable versatility in subject-matter. Portrait-painting for some years occupied much of his time; and he was particularly prized for likenesses of ladies and children. In February 1837 he was appointed master of the school of design of the Board of Manufactures, Edinburgh. In the same year he published a pamphlet on the management of schools of this description, which led to his transfer from Edinburgh, after eighteen months’ service there, to London, as superintendent and secretary of the then recently established school of design at Somerset House. Dyce was sent by the Board of Trade to the continent to examine the organization of foreign schools; and a report which he eventually printed, 1840, led to a remodelling of the London establishment. In 1842 he was made a member of the council and inspector of provincial schools, a post which he resigned in 1844. In this latter year, being appointed professor of fine art in King’s College, London, he delivered a remarkable lecture, *The Theory of the Fine Arts*. In 1835 he had been elected an associate of the Royal Scottish Academy; this honour he relinquished upon settling in London, and he was then made an honorary R.S.A. In 1844 he became an associate, in 1848 a full member, of the London Royal Academy; he also was elected a member of the Academy of Arts in Philadelphia. He was active in the deliberations of the Royal Academy, and it is said that his tongue was the dread of the urbane President, Sir Charles Eastlake, for Dyce was keen in speech as in visage; it was on his proposal that the class of retired Academicians was established. In January 1850 Dyce married Jane, daughter of Mr James Brand, of Bedford Hill, Surrey. He died at Streatham on the 14th of February 1864, leaving two sons and two daughters.

Dyce was one of the most learned and accomplished of British painters—one of the highest in aim, and most consistently self-respecting in workmanship. His finest productions, the frescoes in the robing-room in the Houses of Parliament, did honour to the country and time which produced them. Generally, however, there is in Dyce’s work more of earnestness, right conception, and grave, sensitive, but rather restricted powers of realization, than of authentic greatness. He has elevation, draughtsmanship, expression, and on occasion fine colour; along with all these, a certain leaning on precedent, and castigated semi-conventionalized type of form and treatment, which bespeak rather the scholarly than the originating mind in art. The following are among his principal or most interesting works (oil pictures, unless otherwise stated). 1829: “The Daughters of Jethro defended by Moses”; “Puck.” 1830: “The Golden Age”; “The Infant Hercules strangling the Serpents” (now in the National Gallery, Edinburgh); “Christ crowned with Thorns.” 1835: “A Dead Christ” (large lunette altarpiece). 1836: “The Descent of Venus,” from Ben Jonson’s *Triumph of Love*; “The Judgment of Solomon,” prize cartoon in tempera for tapestry (National Gallery, Edinburgh). 1837: “Francesca da Rimini” (National Gallery, Edinburgh). 1838, and again 1846: “The Madonna and Child.” 1839: “Dunstan separating Edwy and Elgiva.” 1844: “Joash shooting the Arrow of Deliverance” (the finest perhaps of the oil-paintings). 1850: “The Meeting of Jacob and Rachel.” 1851: “King Lear and the Fool in the Storm.” 1855: “Christabel.” 1857: “Titian’s first essay in Colouring.” 1859: “The Good Shepherd.” 1860: “St John bringing Home his Adopted Mother”; “Pegwell Bay” (a coast scene of remarkably minute detail, showing the painter’s partial adhesion to the “pre-Raphaelite” movement). 1861: “George Herbert at Bemerton.” Dyce executed some excellent cartoons for stained glass:—that for the choristers’ window, Ely Cathedral, and that for a vast window at Alnwick in memory of a duke of Northumberland; the design of “Paul rejected by the Jews,” now at South Kensington, belongs to the latter. In fresco-painting his first work appears to have been the “Consecration of Archbishop Parker,” painted in Lambeth palace. In one of the Westminster Hall competitions for the decoration of the Houses of Parliament, he displayed two heads from this composition; and it is related that the great German fresco-painter Cornelius, who had come over to England to give advice, with a prospect of himself taking the chief direction of the pictorial scheme, told the prince consort frankly that the English ought not to be asking for him, when they had such a painter of their own as Mr Dyce. The cartoon by Dyce of the “Baptism of Ethelbert” was approved and commissioned for the House of Lords,

and is the first of the works done there, 1846, in fresco. In 1848 he began his great frescoes in the Robing-room—subjects from the legend of King Arthur, exhibiting chivalric virtue. The whole room was to have been finished in eight years; but ill-health and other vexations trammelled the artist, and the series remains uncompleted. The largest picture figures "Hospitality, the admission of Sir Tristram into the fellowship of the Round Table." Then follow—"Religion," the Vision of Sir Galahad and his Companions; "Generosity," Arthur unhorsed, and spared by the Victor; "Courtesy," Sir Tristram harping to la Belle Yseult; "Mercy," Sir Gawaine's Vow. The frescoes of sacred subjects in All Saints' church, Margaret Street, London; of "Comus," in the summer-house of Buckingham Palace; and of "Neptune and Britannia," at Osborne House, are also by this painter.

Dyce was an elegant scholar in more ways than one. In 1828 he obtained the Blackwell prize at Aberdeen for an essay on animal magnetism. In 1843-1844 he published an edition of the Book of Common Prayer, with a dissertation on Gregorian music, and its adaptation to English words. He founded the Motett Society, for revival of ancient church-music, was a fine organist, and composed a "non nobis" which has appropriately been sung at Royal Academy banquets. His last considerable writing relating to his own art was published in 1853, *The National Gallery: its Formation and Management*.

See Redgrave's *Dictionary of Artists* (1878), and *Dictionary of National Biography*.

(W. M. R.)

DYEING (O. Eng. *deágian*, *deáh*; Mid. Eng. *deyen*), the art of colouring textile and other materials in such a manner that the colours will not be readily removed by those influences to which they are likely to be submitted—*e.g.* washing, rubbing, light, &c. The materials usually dyed are those made from the textile fibres, silk, wool, cotton, &c., and intended for clothing or decoration; but in addition to these may be mentioned straw, fur, leather, paper, &c.

The art of dyeing dates from prehistoric times, and its practice probably began with the first dawn of civilization. Although we cannot trace the successive stages of its development from the beginning, we may suppose they were somewhat similar to those witnessed among certain uncivilized tribes to-day—*e.g.* the Maoris of New Zealand. At first the dyes were probably mere fugitive stains obtained by means of the juices of fruits, and the decoctions of flowers, leaves, barks and roots; but in course of time methods were discovered, with the aid of certain kinds of earth and mud containing alumina or iron, whereby the stains could be rendered permanent, and then it was that the true art of dyeing began. There is no doubt that dyeing was, in the early period of its history, a home industry practised by the women of the household, along with the sister arts of spinning and weaving, for the purpose of embellishing the materials manufactured for clothing.

Historical sketch.

Historical evidence shows that already at a remote period a high state of civilization existed in Persia, India, and China, and the belief is well founded that the arts of dyeing and printing have been practised in these countries during a long succession of ages. In early times the products and manufactures of India were highly prized throughout Southern Asia, and in due course they were introduced by Arabian merchants to Phoenicia and Egypt, with which countries commercial intercourse, by way of the Persian and Arabian Gulfs, seems to have existed from time immemorial. Eventually the Egyptians themselves began to practise the arts of dyeing and printing, utilizing no doubt both the knowledge and the materials derived from India. Pliny the historian has left us a brief record of the methods employed in Egypt during the first century, as well as of the Tyrian purple dye celebrated already 1000 B.C., while the chemical examination of mummy cloths by Thomson and Schunck testifies to the use by the Egyptian dyers of indigo and madder. The Phoenician and Alexandrian merchants imported drugs and dyestuffs into Greece, but we know little or nothing of the methods of dyeing pursued by the Greeks and Romans, and such knowledge as they possessed seems to have been almost entirely lost during the stormy period of barbarism reigning in Europe during the 5th and succeeding centuries. In Italy, however, some remnants of the art fortunately survived these troublous times, and the importation of Oriental products by the Venetian merchants about the beginning of the 13 th century helped to revive the industry. From this time rapid progress was made, and the dyers

formed important guilds in Florence, Venice and other cities. It was about this time, too, that a Florentine named Rucellai rediscovered the method of making the purple dye orchil from certain lichens of Asia Minor. In 1429 there was published at Venice, under the title of *Mariegola dell' arte de tentori*, the first European book on dyeing, which contained a collection of the various processes in use at the time. From Italy a knowledge of dyeing gradually extended to Germany, France and Flanders, and it was from the latter country that the English king Edward III. procured dyers for England, a Dyers' Company being incorporated in 1472 in the city of London.

A new impetus was given to the industry of dyeing by the discovery of America in 1492, as well as by the opening up of the way to the East Indies round the Cape of Good Hope in 1498. A number of new dyestuffs were now introduced, and the dyewood trade was transferred from Italy to Spain and Portugal, for the East Indian products now came direct to Europe round the Cape instead of by the old trade routes through Persia and Asia Minor. Eastern art-fabrics were introduced in increasing quantity, and with them came also information as to the methods of their production. In Europe itself the cultivation of dye-plants gradually received more and more attention, and both woad and madder began to be cultivated, about 1507, in France, Germany and Holland. Under the influence of Spain the Dutch largely developed their industries and made considerable progress in dyeing. The Spaniards, on their first arrival in Mexico (1518), noticed the employment of the red dyestuff cochineal by the natives, and at once imported it to Europe, where an increasing demand for the new colouring matter gradually developed in the course of the century. A further impetus was given to the trade by the Dutch chemist Drebbel's accidental discovery, in 1630, of the method of dyeing a brilliant scarlet on wool by means of cochineal and tin solutions. The secret was soon communicated to other dyers, and the new scarlet was dyed as a speciality at the Gobelin dyeworks in Paris, and some time later (1643) at a dyeworks in Bow, near London.

In 1662 the newly established Royal Society in London took a useful step in advancing the art of dyeing, and in order to inform and assist practical dyers, caused the publication of the first original account, in the English language, of the methods employed in dyeing, entitled "An apparatus to the history of the common practices of Dyeing." Ten years later the French Minister Colbert sought to improve as well as control the operations of dyeing, by publishing a code of instructions for the use of the woollen dyers and manufacturers in France. From this time, too, a succession of eminent chemists were appointed by the French government to devote some of their attention to the study of the industrial arts, including dyeing, with a view to their progress and improvement. Dufay, Hellot, Macquer, Berthollet, Roard and Chevreul (1700-1825) all rendered excellent service to the art, by investigating the chemical principles of dyeing, by publishing accounts of the various processes in vogue, by examining the nature and properties of the dyestuffs employed, and by explaining the cause of the several phenomena connected with dyeing. With the advent of the 18th century, certain old prejudices against the use of foreign dyewoods gradually disappeared, and very rapid progress was made owing to the birth of the modern chemistry and the discovery of several useful chemical products and processes—*e.g.* Prussian Blue (1710), Saxony Blue or Indigo Extract (1740), sulphuric acid (1774), murexide (1776), picric acid (1788), carbonate of soda (1793), bleaching powder (1798). Experiments on the practical side of bleaching and dyeing were made during this period, in England by Thomas Henry, Home and Bancroft, and in France by Dambourney, Gonfreville and others, each of whom has left interesting records of his work.

Down to the middle of the 19th century natural dyestuffs alone, with but few exceptions, were at the command of the dyer. But already in the year 1834 the German chemist Runge noticed that one of the products obtained by distilling coal-tar, namely, aniline, gave a bright blue coloration under the influence of bleaching powder. No useful colouring matter, however, was obtained from this product, and it was reserved for the English chemist Sir W.H. Perkin to prepare the first aniline dye, namely, the purple colouring matter Mauve (1856). The discovery of other brilliant aniline dyestuffs followed in rapid succession, and the dyer was in the course of a few years furnished with Magenta, Aniline Blue, Hofmann's Violet, Iodine Green, Bismarck Brown, Aniline Black, &c. Investigation has shown that the products of the distillation of coal-tar are very numerous, and some of them are found to be specially suitable for the preparation of colouring matters. Such, for example, are benzene, naphthalene and anthracene, from each of which distinct series of colouring matters are derived. In 1869 the German chemists Graebe and Liebermann succeeded in preparing Alizarin, the colouring matter of the madder-root, from the coal-tar product anthracene, a discovery which is of the greatest historical interest, since it is the first instance of the artificial production of a vegetable dyestuff. Another notable discovery is that of artificial

Indigo by Baeyer in 1878. Since 1856, indeed, an ever-increasing number of chemists has been busily engaged in pursuing scientific investigations with the view of preparing new colouring matters from coal-tar products, and of these a few typical colours, with the dates of their discovery, may be mentioned: Cachou de Laval (1873); Eosin (1874); Alizarin Blue (1877); Xylidine Scarlet (1878); Biebrich Scarlet (1879); Congo Red (1884); Primuline Red (1887); Rhodamine (1887); Paranitraniline Red (1889); Alizarin Bordeaux (1890); Alizarin Green (1895). At the present time it may truly be said that the dyer is furnished with quite an embarrassing number of coal-tar dyestuffs which are capable of producing every variety of colour possessing the most diverse properties. Many of the colours produced are fugitive, but a considerable number are permanent and withstand various influences, so that the general result for some years has been the gradual displacement of the older natural dyestuffs by the newer coal-tar colours.

During this period of discovery on the part of the chemist, the mechanical engineer has been actively engaged in devising machines suitable for carrying out, with a minimum of manual labour, all the various operations connected with dyeing. This introduction of improved machinery into the dyeing trade has resulted in the production of better work, it has effected considerable economy, and may be regarded as an important feature in modern dyeing.

General principles.

The art of dyeing is a branch of applied chemistry in which the dyer is continually making use of chemical and physical principles in order to bring about a permanent union between the material to be dyed and the colouring matter applied. If cotton or wool is boiled in water containing finely powdered charcoal, or other insoluble coloured powder, the material is not dyed, but merely soiled or stained. This staining is entirely due to the entanglement of the coloured powder by the rough surface of the fibre, and a vigorous washing and rubbing suffices to remove all but mere traces of the colour. True dyeing can only result when the colouring matter is presented to the fibre in a soluble condition, and is then, by some means or other, rendered insoluble while it is absorbed by, or is in direct contact with, the fibre. There must always be some marked physical or chemical affinity existing between fibre and colouring matter, and this depends upon the physical and chemical properties of both. It is well known that the typical fibres, wool, silk and cotton, behave very differently towards the solution of any given colouring matter, and that the method of dyeing employed varies with each fibre. As a general rule wool has the greatest attraction for colouring matters, and dyes most readily; cotton has the least attraction, while silk occupies in this respect an intermediate position. These differences may be to some extent due to differences of physical structure in the fibres, but they are mainly due to their different chemical composition.

On the other hand, a given fibre, *e.g.* cotton, behaves quite differently in dyeing towards various colouring matters. Some of these are not at all attracted by it, and are incapable of being used as dyestuffs for cotton. For others cotton exhibits a marked attraction, so that it is readily dyed by mere steeping in a hot solution of the colouring matter. Again, for other colouring matters cotton has little or no attraction, and cannot be dyed with them until it has been previously impregnated or prepared with a metallic salt, tannic acid or some other agent which is capable of combining with the colouring matter and precipitating it as an insoluble coloured compound within or upon the fibre. Such differences of behaviour are to be ascribed to differences in the chemical constitution or atomic arrangement of the various colouring matters.

Classification of colouring matters.

In the case of the coal-tar colours we are, for the most part, well acquainted with their chemical constitution, and in accordance with this knowledge the chemist has arranged them in the following groups:—(1) Nitro Colours. (2) Azo Colours, including Amido-azo, Oxy-azo, Tetrazo and Polyazo Colours. (3) Hydrazone Colours. (4) Oxy-quinone Colours, including Quinone-oxime Colours. (5) Diphenylmethane and Triphenylmethane Colours, including Rosaniline, Rosolic acid and Phthaleïne Colours. (6) Quinoneimide Colours, including Indamine, Indophenol, Thiazime, Thiazone, Oxazime, Oxazone, Azine, Induline, Quinoxaline and Fluorindine Colours. (7) Aniline Black. (8) Quinoline and Acridine Colours. (9) Thiazol Colours. (10) Oxy-ketone, Xanthone, Flavone and Cumarine Colours. (11) Indigo. (12) Colours of unknown constitution.

This arrangement of the colouring matters in natural chemical groups is well suited for the requirements of the chemist, but another classification is that based on the mode of their application in dyeing. This is much simpler than the previous one, and being better adapted for the practical purposes of the dyer, as well as for explaining the various methods of dyeing, it is preferred for this article. According to this arrangement colouring matters are

classified under the following groups:—(1) *Acid Colours.* (2) *Basic Colours.* (3) *Direct Colours.* (4) *Developed Colours.* (5) *Mordant Colours.* (6) *Miscellaneous Colours.* (7) *Mineral Colours.* It is well to state that there is no sharp line of division between some of these groups, for many colours are applicable by more than one method, and might quite well be placed in two, or even three, of the above groups. This may be due either to the kind of fibre to which the colouring matter is to be applied, or to certain details in the chemical constitution of the latter which give it a twofold character.

Acid Colours.—These dyestuffs are so called because they dye the animal fibres wool and silk in an acid bath; they do not dye cotton. From a chemical point of view the colouring matters themselves are of an acid character, this being due to the presence in the molecule of nitro (NO_2) or sulphonic acid (HSO_3) groups. According to their origin and constitution they may be distinguished as nitro compounds, sulphonated azo compounds and sulphonated basic colours. The acid colours are usually sold in the form of their alkali salts, as variously coloured powders soluble in water. For the alkali salts in neutral or alkaline solution wool and silk have little or no affinity, but dyeing rapidly occurs if the solution is acidified with sulphuric acid whereby the colour-acid is liberated. This addition of acid, however, is necessary not only to set free the colour-acid of the dyestuff, but also to alter partially the chemical composition of the fibre, and thus render it capable of uniting more readily with the free colour-acid. It has been shown, namely, that if wool is boiled with dilute sulphuric acid, and then thoroughly washed with boiling-water till free from acid, it acquires the property of being dyed with acid colours even in neutral solution. By this treatment a portion of the wool substance is converted into so-called *lanuginic acid*, which has a strong attraction for the colour-acid of the dyestuff, with which it forms an insoluble coloured compound. For dyeing *wool*, the general rule is to charge the dyebath with the amount of dyestuff necessary to give the required colour, say from ½ to 2 or 6 % on the weight of wool employed, along with 10% sodium sulphate (Glauber's salt) and 4% sulphuric acid (1.84 sp. gr.). The woollen material is then introduced and continually handled or moved about in the solution, while the temperature of the latter is gradually raised to the boiling point in the course of ¾ to 1 hour; after boiling for ¼ to ½ hour longer, the operation is complete, and the material is washed and dried.

In practice, modifications of this normal process may be introduced, in order to ensure the dyeing of an even colour, *i.e.* free from such irregularities as cloudiness, streaks, &c., which may be due to the quality of the material or to the special properties of the acid colour employed. Materials of a firm, close texture, also the existence of a strong affinity between fibre and colouring matter, do not generally lend themselves to the dyeing of even colours, or to a satisfactory penetration of the material. Some acid colours dye even colours without any difficulty; others, however, do not. The addition of sodium sulphate to the dyebath exerts a restraining action; the dyeing therefore proceeds more slowly and regularly, and a more equal distribution and better absorption of the colouring matter takes place. Other devices to obtain even colours are: the use of old dye-liquors, a diminished amount of acid, the employment of weaker acids, *e.g.* acetic or formic acid or ammonium acetate, and the entering of the material at a low temperature.

In the application of so-called Alkali Blue the process of dyeing in an acid bath is impossible, owing to the insolubility of the colour-acid in an acid solution. Wool and silk, however, possess an affinity for the alkali salt of the colouring matter in neutral or alkaline solution, hence these fibres are dyed with the addition of about 5% borax; the material acquires only a pale colour, that of the alkali salt, in this dyebath, but by passing the washed material into a cold or tepid dilute solution of sulphuric acid a full bright blue colour is developed, due to the liberation of the colour-acid within the fibre. In the case of other acid colours, *e.g.* Chromotrope, Chrome Brown, Chromogen, Alizarin Yellow, &c., the dyeing in an acid bath is followed by a treatment with a boiling solution of bichromate of potash, alum, or chromium fluoride, whereby the colouring matter on the fibre is changed into insoluble oxidation products or colour-lakes. This operation of developing or fixing the colour is effected either in the same bath at the end of the dyeing operation, or in a separate bath. See also Artificial Mordant Colours.

When dyeing with certain acid colours, *e.g.* Eosine, Phloxine and other allied bright pink colouring matters derived from resorcin, the use of sulphuric acid as an assistant must be avoided, since the colours would thereby be rendered paler and duller, and only acetic acid must be employed.

The properties of the dyes obtained with the acid colours are extremely varied. Many are fugitive to light; on the other hand, many are satisfactorily fast, some even being very fast in this respect. As a rule, they do not withstand the operations of milling and scouring very well, hence acid colours are generally unsuitable for tweed yarns or for loose wool. They are largely employed, however, in dyeing other varieties of woollen yarn, silk yarn, union fabrics,

dress materials, leather, &c. Previous to the discovery of the coal-tar colours very few acid colours were known, the most important one being Indigo Extract. Prussian Blue as applied to wool may also be regarded as belonging to this class, also the purple dyestuff known as Orchil or Cudbear.

The following list includes some of the more important acid colours now in use, arranged according to the colour they yield in dyeing:—

Red.—Wool scarlet, brilliant scarlet, erythrine, croceïn scarlet, brilliant croceïn, violamine G, scarlet 3R, crystal scarlet, new coccine, chromotrope 2R, azo acid magenta, Victoria scarlet, xylidine scarlet, Palatine scarlet, Biebrich scarlet, pyrotine, orchil red, Bordeaux B, milling red, azo carmine, acid magenta, fast acid violet A 2R, naphthylamine red, fast red, claret red, eosine, erythrosine, rose Bengale, phloxine, cyanosine, cloth red, lanafuchsine, rosinduline, erio carmine.

Orange.—Diphenylamine orange, methyl orange, naphthol orange, croceïn orange, brilliant orange, orange G, orange N, mandarin G R.

Yellow.—Picric acid, naphthol yellow S, fast yellow, brilliant yellow S, azoflavine, metanil yellow, resorcine yellow, tartrazine, quinoline yellow, milling yellow, azo yellow, Victoria yellow, brilliant yellow S, citronine, Indian yellow.

Green.—Acid green, guinea green, fast green, patent green, cyanol green, erio green, brilliant acid green 6 G.

Blue.—Alkali blue, soluble blue, opal blue, methyl blue, Höchst new blue, patent blue, ketone blue, cyanine, thiocarmine, fast blue, induline, violamine 3 B, azo acid blue, wool blue, indigo extract, erio glaucine, erio cyanine, erio blue, lanacyl blue, sulphon-azurine, sulphon-cyanine.

Violet.—Acid violet, red violet, regina violet, formyl violet, violamine B, fast violet, azo acid violet, erio violet, lanacyl violet.

Brown.—Fast brown, naphthylamine brown, acid brown, resorcine brown, azo brown, chrome brown, chromogene.

Black.—Naphthol black, azo black, wool black, naphthylamine black, jet black, anthracite black, Victoria black, azo acid black, brilliant black, union black, brilliant black B.

Basic Colours.—These colouring matters are the salts of organic colour-bases, their name being derived from the fact that their dyeing power resides entirely in the basic part of the salt. In the free state the bases are colourless and insoluble, but in combination with acids they form salts which are coloured and for the most part soluble in water. They are usually sold in the form of powder or crystals, the latter exhibiting frequently a beautiful metallic lustre. *Wool* and *silk* are dyed in a neutral bath, *i.e.* without any addition, the material not requiring any previous preparation. During the dyeing operation the animal fibres appear to play the part of an acid, for they decompose the colouring matter and unite with the colour-base to form an insoluble coloured salt or lake, while the acid of the colouring matter is liberated and remains in solution. Although, as a rule, a neutral dyebath is employed in dyeing wool, a slight addition (2%) of soap is sometimes made in order to give a brighter colour, while in other cases, *e.g.* with Victoria Blue, the dyebath must of necessity be made distinctly acid with acetic or sulphuric acid. Silk is usually dyed in a bath containing “boiled-off liquor” (*i.e.* the spent soap-liquor from the operation of scouring) neutralized or slightly acidified with acetic or tartaric acid. For a full colour use 2 or 3% colouring matter, enter the wool at a low temperature, heat gradually to near the boiling point in the course of ¾ hour, and continue dyeing for ¼ hour. Owing to the slight solubility of many basic colours, it is important to take the precaution of filtering the colour solution into the dyebath through a flannel filter, also to neutralize the alkalinity of calcareous water with a little acetic acid, to prevent decomposition of the colouring matter and precipitation of the colour-base.

Unlike the animal fibres, *cotton* has little or no affinity for the basic colours; hence the cotton dyer makes use of the fact that cotton has a natural attraction for tannic acid, and that the latter forms insoluble lakes with the bases of basic colours. Previous to dyeing, the cotton is prepared with tannic acid by steeping in a cold solution of the latter for several hours; cotton pieces are run at full width through a solution containing 2 to 6 oz. per gallon of tannic acid, and after being evenly squeezed are dried on steam cylinders. The cotton is then worked in a solution of tartar emetic or stannic chloride, so that the tannic acid absorbed by the fibre may be fixed upon it as insoluble tannate of antimony or tin. Although the tannic acid is thus united with metallic oxide, it still has the power of attracting the base of the colouring matter, and there is fixed upon the fibre an insoluble colour-lake, namely, a tannate of antimony and colour-base, which constitutes the dye. In this process the tannic acid is called the *mordant*, the tartar emetic acts as the *fixing-agent* for the tannic acid, and

the cotton as finally prepared for dyeing is said to be *mordanted*. The proportions employed, reckoned on the weight of cotton, may vary from 2 to 10% tannic acid, or the equivalent in a decoction of sumach, myrabolans, or other tannin matter, and ½ to 3% tartar emetic. After mordanting and fixing of the mordant, the cotton is well washed and dyed in the cold or at 60° C. for ½ to 1 hour with the necessary colouring matter. Applied in this manner, basic colours are moderately fast to soap, but generally not to the action of light.

Linen is dyed in the same manner as cotton. Jute is dyed without any previous preparation, since it behaves like a tannin-mordanted fibre, attracting the basic colours direct.

The basic colours, to which class most of the earlier coal-tar colours belonged, are remarkable for their great colouring power, and in most cases for the brilliancy of the colours they yield. With the exception of certain dark colours, they are fugitive to light. It is interesting to note that only one vegetable colouring matter is at present recognized as belonging to this class, namely, the yellow dyestuff barberry bark and root (*Berberis vulgaris*) which contains the alkaloid berberine.

The following is a list of the more important basic colours derived from coal-tar:—

Red.—Magenta, safranine, rhodamine, pyronine red, rhoduline red, rosazeïn, induline scarlet.

Orange.—Chrysoïdine, phosphine, acridine orange, tannin orange.

Yellow.—Auramine, benzoflavine, thioflavine T, acridine yellow, homophosphine, rhoduline yellow.

Green.—Malachite green, emerald green, imperial green, China green, brilliant green, Victoria green, diamond green, methylene green, azine green.

Blue.—Methylene blue, new methylene blue, toluidine blue, thionine blue, indamine blue, Victoria blue, night blue, Nile blue, turquoise blue, marine blue, indoine blue, metamine blue, Capri blue, indazine, metaphenylene blue, paraphenylene blue, toluylene blue, indigene, indol blue, diphene blue, setopaline, setocyanine, setoglaucine, Helvetia blue.

Violet.—Methyl violet, crystal violet, ethyl purple, methylene violet, mauve, paraphenylene violet, rhoduline violet, methylene heliotrope.

Brown.—Bismarck brown.

Black.—Diazine black.

Grey.—Methylene grey, nigrisine, new grey.

Direct Colours.—The characteristic feature of the dyestuffs belonging to this class is that they dye cotton "direct"—*i.e.* without the aid of mordants. Two distinct series of colouring matters of this group may be distinguished—namely, *Direct Cotton Colours* and *Sulphide Colours*.

(*a*) *Direct Cotton Colours.*—The colours of this class are frequently called the Substantive Cotton Colours, Benzo Colours, Diamine Colours, Congo Colours. Considered from the chemical point of view, they are mostly alkali salts of sulphonated tetrazo colours obtained by diazotizing certain diamido compounds, *e.g.* benzidine, diamido-stilbene, &c., and uniting the products thus obtained with various amines or phenols. The first colouring matter of this class was the so-called Congo red, discovered in 1884, and since that time a very great number have been introduced which yield almost every variety of colour. The method of dyeing *cotton* consists in merely boiling the material in a solution of the dyestuff, when the cotton absorbs and retains the colouring matter by reason of a special natural affinity. The concentration of the dyebath is of the greatest importance, since the amount of colour taken up by the fibre is in an inverse ratio to the amount of dye liquor present in the bath. The addition of 1 to 3 oz. sodium sulphate and $\frac{1}{12}$ to $\frac{1}{3}$ oz. carbonate of soda per gallon gives deeper colours, since it diminishes the solubility of the colouring matter in the water and increases the affinity of the cotton for the colouring matter. An excess of sodium sulphate is to be avoided, otherwise precipitation of the colouring matter and imperfect dyeing result. With many dyestuffs it is preferable to use $\frac{1}{6}$ to $\frac{1}{3}$ oz. soap instead of soda. On cotton the dyed colours are usually not very fast to light, and some are sensitive to alkali or to acid, but their most serious defect is that they are not fast to washing, the colour tending to run and stain neighbouring fibres. Their fastness to light and washing is, however, greatly improved by a short (½ hour) after-treatment with a boiling solution of copper sulphate (3%), with or without the addition of bichromate of potash (1%). *Wool* and *silk* are dyed with the direct colours either neutral or with the addition of a little acetic acid to the dyebath. On these fibres the dyed colours are usually faster than on cotton to washing, milling and light; some are very fast even to light—*e.g.* Diamine fast red, chrysophenine, Hessian yellow, &c. Many of the Direct Colours are very useful for dyeing plain shades on union fabrics composed of

wool and cotton, silk and cotton, or wool and silk. Owing to the facility of their application, they are also very suitable for use as household dyes, especially for cotton goods.

A few vegetable dyestuffs belong to this class, notably Turmeric, saffron, annatto and safflower, but they all yield colours which are fugitive to light, and they are now of little importance. *Turmeric* is the underground stem or tuber of *Curcuma tinctoria*, a plant growing abundantly in the East Indies. It dyes cotton, wool and silk in a bath acidified with acetic acid or alum, yielding a bright yellow colour which is turned brown by alkalis. *Saffron* consists of the stigmata of the flower of *Crocus sativus*, which is grown in Austria, France and Spain. It dyes a bright orange-yellow colour. *Annatto* is the pulpy mass surrounding the seeds of *Bixa orellana*, a plant which grows in South America—*e.g.* Brazil, Cayenne, &c. It dyes cotton and silk in an alkaline or soap bath an orange colour, which is turned red by acids. *Safflower* consists of the dried florets of *Carthamus tinctorius*, which is grown in the East Indies, Egypt and southern Europe. Cotton is dyed a brilliant pink colour by working it in a cold alkaline (sodium carbonate) extract of the colouring matter, while gradually acidifying the solution with citric acid (lime-juice).

The Direct Colours which are derived from coal-tar products are very numerous indeed; they are largely employed, and occupy a very important position among dyestuffs. The following list includes the principal coal-tar colours of this group:—

Red.—Congo red, brilliant Congo, benzopurpurine, brilliant purpurine, deltapurpurine, diamine scarlet, diamine fast red, rosazurine, salmon red, erica, Titan pink, St Denis red, Columbia red, naphthylene red, Congo rubine, acetopurpurine, dianol red, thiamine crimson, geranine, brilliant geranine, Columbia fast scarlet, benzo fast scarlet, thiamine red, diamine rose, Dongola red, rosophenine.

Orange.—Congo orange, benzo orange, toluylene orange, mikado orange, brilliant orange, Columbia orange, diamine orange, pyramine orange, benzo fast orange.

Yellow.—Chrysamine, cresotin yellow, diamine yellow, carbazol yellow, chrysophenine, Hessian yellow, curcumine yellow, thiazol yellow, thioflavine S, oriol, mimosa yellow, Columbia yellow, cotton yellow, chloramine yellow, direct yellow, diamine fast yellow, diamine gold, sun yellow, stilbene yellow, chlorophenine, oxyphenine.

Green.—Benzo olive, Columbia green, benzo green, diamine green, direct green, diphenyl green, oxamine green, eboli green.

Blue.—Azo blue, benzoazurine, brilliant azurine, sulphon-azurine, diamine blue, benzo indigo blue, benzo black blue, Chicago blue, Columbia blue, Erie blue, Zambezi blue, benzo cyanine, Congo blue, diamine sky blue, brilliant benzo blue, benzo chrome black blue, oxamine blue, diphenyl blue, diamineral blue, diaminogene, benzo fast blue, diazo indigo blue, brilliant chlorazol blue.

Violet.—Hessian purple, Congo Corinth, heliotrope, Congo violet, diamine violet, Hessian violet, azo violet, benzo violet, violet black, diamine Bordeaux, chlorantine lilac, diphenyl violet, triazol violet, Columbia violet.

Brown.—Benzo brown, Congo brown, toluylene brown, diamine brown, cotton brown, Hessian brown, terra-cotta, mikado brown, catechu brown, wool brown, Columbia brown, Zambezi brown, benzo chrome brown, direct fast brown, direct bronze brown, chloramine brown, triazol brown, toluylene brown, dianol brown, Crumpsall direct fast brown.

Black.—Diamine black, Columbia black, Nyanza black, Tabora black, Zambezi black, chromanil black, benzo black, benzo fast black, direct blue black, Pluto black, oxydiamine black, diamine jet black, polyphenyl black, union black, triazol black, Titan black, cotton black, oxamine black.

Grey.—Benzo grey, benzo black, azo mauve, diaminogene, neutral grey.

(*b*) *Sulphide Colours.*—These dyestuffs are only suitable for dyeing the vegetable fibres, since they must be applied in a strongly alkaline bath. The dyestuff Cachou de Laval, discovered in 1873, was the first member of this group, and was obtained by melting a mixture of sodium sulphide and various organic substances—*e.g.* bran, sawdust, &c. In recent years numerous other dyestuffs have been added to the list, namely, grey, blue, green, brown, and especially black colours, by submitting certain definite amido compounds of the aromatic series to a similar treatment with sodium sulphide or sodium thiosulphate, and subsequent oxidation. The mode of dyeing with these colours is based on the fact that they are soluble in an alkaline reducing agent, and if the cotton is worked in the solution, subsequent oxidation develops the colour, which is fixed upon the fibre in an insoluble condition. The material is boiled for about one hour in a solution of the colour (10 to 15%), with the addition of sodium carbonate (1 to 10%), common salt (10 to 20%), and sodium sulphide (5 to 30%); it is then washed in water, and may be developed by heating in a bath

containing 2 to 5% of bichromate of soda, and 3 to 6% acetic acid. A final washing with water containing a little soda to remove acidity is advisable. The sulphide colours are remarkable for their fastness to light, alkalis, acids and washing, but unless proper care is exercised the cotton is apt to be tendered on being stored for some time.

The following list includes some of the most important of the colours of this class:—

Yellow.—Immedial yellow, pyrogene yellow, sulphur yellow, thion yellow, thiogene yellow.

Orange.—Eclipse phosphine, immedial orange, pyrogene orange, thion orange, thiogene orange.

Green.—Pyrogene green, Italian green, eclipse green, pyrol green, immedial green, katigene green, thionol green.

Blue.—Immedial blue, immedial sky blue, eclipse blue, katigene indigo, pyrogene blue, sulphur blue, thion blue, thiogene blue.

Violet.—Katigene violet, thiogene heliotrope, thiogene purple.

Brown.—Pyrogene brown, pyrogene yellow, Cachou de Laval, thiocatechine, katigene black brown, eclipse brown, immedial brown, katigene brown, dianol brown.

Grey and Black.—Pyrogene grey, Vidal black, immedial black, katigene black, anthraquinone black, St Denis black, amidazol black, cross dye black, eclipse black, carbide black, thiogene black, sulphaniline black, sulfogene black, pyrogene black, dianol black, sulphur black, thion black, kryogene black.

This class of colours is continually increasing in number, and for certain purposes in cotton dyeing the group has acquired great importance.

Developed Colours.—This group includes certain azo colours which are developed or produced upon the fibre itself (usually *cotton*) by the successive application of their constituent elements. It may be conveniently divided into the following sub-groups:—Insoluble Azo Colours, Developed Direct Colours, Benzo Nitrol Colours.

(*a*) The *Insoluble Azo Colours* are produced as insoluble coloured precipitates by adding a solution of a diazo compound to an alkaline solution of a phenol, or to an acid solution of an amido compound. The necessary diazo compound is prepared by allowing a solution containing nitrous acid to act upon a solution of a primary aromatic amine. It is usually desirable to keep the solutions cool with ice, owing to the very unstable nature of the diazo compounds produced. The colour obtained varies according to the particular diazo compound, as well as the amine or phenol employed, β-naphthol being the most useful among the latter. The same coloured precipitates are produced upon the *cotton* fibre if the material is first impregnated with an alkaline solution of the phenol, then dried and passed into a cold solution of the diazo solution. The most important of these colours is *para-nitraniline red*, which is dyed in enormous quantities on cotton pieces. The pieces are first "prepared" by running them on a padding machine through a solution made up of 30 grms. β-naphthol, 20 grms, caustic soda, 50 grms. Turkey red oil, and 5 grms. tartar emetic in 1000 grms. (1 litre) water. They are then dried on the drying-machine, and are passed, after being allowed to cool, into the diazo solution, which is prepared as follows: 15 grms. para-nitraniline are dissolved in 53 c.c. hydrochloric acid (34° Tw.) and a sufficiency of water. To the cold solution a solution of 10½ grms. sodium nitrite is added while stirring. The whole is then made up to 1200 c.c., and just before use 60 grms. sodium acetate are added. The colour is developed almost immediately, but it is well to allow the cotton to remain in contact with the solution for a few minutes. The dyed cotton is squeezed, washed, soaped slightly, and finally rinsed in water and dried. A brilliant red is then obtained which is fast to soap but not to light. If the para-nitraniline used in the foregoing process is replaced by meta-nitraniline, a yellowish-orange colour is obtained; with α-naphthylamine, a claret-red; with amido-azo-toluene, a brownish red; with benzidine, a dark chocolate; with dianisidine, a dark blue; and so on. The dyed colours are fast to washing and are much used in practice, particularly the para-nitraniline red, which serves as a substitute for Turkey-red, although it is not so fast to light as the latter.

(*b*) *Developed Direct Colours.*—The primuline colours were the first representatives of this class and are derived from the yellow dyestuff known as primuline, which dyes cotton in the same manner as the direct colours. The primuline yellow thus obtained is fugitive to light and of little practical value, but since the colouring matter is an amido base it can be diazotized in the fibre and then developed in solutions of phenols or amines, whereby azo dyes of various hues may be obtained, according to the developer employed; thus, β-naphthol develops a bright red colour, resorcin develops an orange, phenol a yellow, naphthylamine a brown, &c. The *dyeing* of the primuline yellow is effected by boiling the cotton for one hour in a solution of primuline (5%) and common salt (10 to 20%). The diazotizing operation

consists in passing the dyed and rinsed cotton for 5 to 10 minutes into a cold solution of nitrous acid—*i.e.* a solution of ¾ oz. sodium nitrite per gallon of water, slightly acidified with sulphuric acid. The diazotized material should not be exposed to light, but at once washed in cold water and passed into the developer. The *developing* process consists in working the diazotized material for 5 to 10 minutes in a cold solution of the necessary phenol, and finally washing with water. The only developer of any practical importance is a solution of β-naphthol in caustic soda, which produces primuline red. The primuline colours are best adapted for *cotton* dyeing, and the colours obtained are fast to washing and to moderate soaping, but they are not very fast to light.

If *cotton* is dyed with other direct colours containing free amido groups, the colour can be diazotized on the dyed fibre exactly in the same manner as in the case of primuline-dyed cotton, and then developed by passing into the solution of an amine or phenol, or by treating it with a warm solution of sodium carbonate. In this manner a new azo dye is produced upon the fibre, which differs from the original one not only in colour, but also by being faster to washing and other influences. A treatment with copper sulphate solution after development is frequently beneficial in rendering the colour faster to light. Some Direct Colours, indeed, are of little value, owing, for example, to their sensibility to acids, until they have been diazotized and developed, the usual developers being β-naphthol, resorcinol, phenol and phenylene-diamine.

The following Direct Colours, after being applied to cotton, may be submitted to the above treatment, the colours produced being chiefly blue, brown and black:—

Blue.—Diazurine, diazo blue, diamine blue, diaminogene.

Red.—Rosanthiene.

Brown.—Diazo brown, diamine cutch, diamine brown, cotton brown.

Grey and Black.—Senzo blue, diazo blue black, diazo black, diamine black, diazo brilliant black.

(*c*) *Benzo Nitrol Colours.*—These are certain Direct Colours, dyed on *cotton* in the ordinary manner, which are then developed by passing into a diazo solution—*e.g.* diazotized para-nitraniline, &c. The dyed colour here plays the part of a phenol or amine, and reacts with the diazo compound to produce a new colour. The process is similar to the production of the Insoluble Azo Colours, the β-naphthol which is there applied to the fibre being here replaced by a Direct Colour. The colour of the latter is rendered much deeper by the process, and also faster to washing and to the action of acids. The dyestuffs recommended for application in the manner described are: Benzo nitrol brown, toluylene brown, direct fast brown, Pluto black, direct blue black.

"Topping" Direct Colours.—The direct colours possess the remarkable property of precipitating the basic colours from aqueous solution. Use is frequently made of this property for "topping" cotton dyed with direct colours either with a view to obtain compound shades or to brighten the colour. Thus by dyeing cotton first yellow in chrysamine and then dyeing it again in a cold bath of methylene blue a brilliant shade of green results. If, on the other hand, a direct blue is topped with methylene blue, its brilliancy may be enhanced.

Mordant Colours.—The colouring matters of this class include some of the most important dyestuffs employed, since they furnish many colours remarkable for their fastness to light, washing and other influences. Employed by themselves, Mordant Colours are usually of little or no value as dyestuffs, because, with few exceptions, either they are not attracted by the fibre, particularly in the case of cotton, or they only yield a more or less fugitive stain. Their importance and value as dyestuffs are due to the fact that they act like weak acids and have the property of combining with metallic oxides to form insoluble coloured compounds termed "lakes," which vary in colour according to the metallic oxide or salt employed. The most stable lakes are those in which the colouring matter is combined with two metallic oxides, a sesquioxide and a monoxide—*e.g.* alumina and lime. In applying colouring matters of this class the object of the dyer is to precipitate and fix these coloured lakes upon and within the fibre, for which purpose two operations are necessary, namely, *mordanting* and *dyeing*.

The *mordanting operation* aims at fixing upon the fibre the necessary metallic oxide or insoluble basic salt, which is called the *mordant*, although the term is also applied to the original metallic salt employed. In the subsequent dyeing operation the mordanted material is boiled with a solution of the colouring matter, during which the metallic oxide attracts and chemically combines with the colouring matter, producing the coloured lake *in situ* on the fibre, which thus becomes dyed. The mode of applying the mordants varies according to the nature of the fibre and the metallic salt employed, the chief mordants at present in use being salts of chromium, aluminium, tin, copper and iron. The method of mordanting *wool* depends

upon its property of decomposing metallic salts, and fixing upon itself an insoluble metallic compound, when boiled in their solutions. This decomposition is facilitated by the heating and by the dilution of the solution, but it is chiefly due to the action of the fibre itself. The exact nature of the substance fixed upon the fibre has not in all cases been determined; probably it is a compound of the metallic oxide with the wool-substance itself, which has the character of an amido-acid. The mordant most largely employed for wool is bichromate of potash, since, besides being simply applied, and leaving the wool with a soft feel, it yields with the various mordant-dyestuffs a large variety of fast colours. The wool is boiled for 1 to 1½ hours in a solution containing 2 to 3% bichromate of potash on the weight of the wool employed. During this operation the wool at first attracts chromic acid, which is gradually reduced to chromium chromate, so that the mordanted fibre has finally a pale olive-yellow tint. In the dyebath, under the influence of a portion of the dyestuff, further complete reduction to chromic hydrate occurs before it combines with the colouring matter. Not unfrequently certain so-called “assistants” are employed in small amount along with the bichromate of potash—*e.g.* sulphuric acid, cream of tartar, tartaric acid, lactic acid, &c. The use of the organic acids here mentioned ensures the complete reduction of the chromic acid on the wool to chromic hydrate already in the mordant bath, and the pale greenish mordanted wool is better adapted for dyeing with colours which are susceptible to oxidation —*e.g.* alizarin blue. For special purposes chromium fluoride, chrome alum, &c., are employed. Alum or aluminium sulphate (8%), along with acid potassium tartrate (cream of tartar) (7%), is used for brighter colours—*e.g.* reds, yellows, &c. The object of the tartar is to retard the mordanting process and ensure the penetration of the wool by the mordant, by preventing superficial precipitation through the action of ammonia liberated from the wool; it ensures the ultimate production of clear, bright, full colours. For still brighter colours, notably yellow and red, stannous chloride was at one time largely employed, now it is used less frequently; and the same may be said of copper and ferrous sulphate, which were used for dark colours. *Silk* may be often mordanted in the same manner as wool, but as a rule it is treated like cotton. The silk is steeped for several hours in cold neutral or basic solutions of chromium chloride, alum, ferric sulphate, &c., then rinsed in water slightly, and passed into a cold dilute solution of silicate of soda, in order to fix the mordants on the fibre as insoluble silicates. *Cotton* does not, like wool and silk, possess the property of decomposing metallic salts, hence the methods of mordanting this fibre are more complex, and vary according to the metallic salts and colouring matters employed, as well as the particular effects to be obtained. One method is to impregnate the cotton with a solution of so-called “sulphated oil” or “Turkey-red oil”; the oil-prepared material is then dried and passed into a cold solution of some metallic salt—*e.g.* aluminium acetate, basic chromium chloride, &c. The mordant is thus fixed on the fibre as a metallic oleate, and after a passage through water containing a little chalk or silicate of soda to remove acidity, and a final rinsing, the cotton is ready for dyeing. Another method of mordanting cotton is to fix the metallic salt on the fibre as a tannate instead of an oleate. This is effected by first steeping the cotton in a cold solution of tannic acid or in a cold decoction of some tannin matter, *e.g.* sumach, in which operation the cotton attracts a considerable amount of tannic acid; after squeezing, the material is steeped for an hour or more in a solution of the metallic salt, and finally washed. The mordants employed in this case are various—*e.g.* basic aluminium or ferric sulphate, basic chromium chloride, stannic chloride (cotton spirits), &c. There are other methods of mordanting cotton besides those mentioned, but the main object in all cases is to fix an insoluble metallic compound on the fibre. It is interesting to note that whether the metallic oxide is united with the substance of the fibre, as in the case of wool and silk, or precipitated as a tannate, oleate, silicate, &c., as in the case of cotton or silk, it still has the power of combining with the colouring matter in the dyebath to form the coloured “lake” or dye on the material.

The *dyeing operation* consists in working the mordanted material in a solution of the necessary colouring matter, the dyebath being gradually raised to the boiling point. With many colouring matters, *e.g.* with alizarin, it is necessary to add a small percentage of calcium acetate to the dyebath, and also acetic acid if wool is being dyed. In wool-dyeing, also, the mordanting operation may follow that of dyeing instead of preceding it, in which case the boiling of the wool with dyestuff is termed “stuffing,” and the subsequent developing of the colour by applying the mordant is termed “saddening,” because this method has in the past been usually carried out with iron and copper mordants, which give dull or sad colours. The method of “stuffing and saddening” may, however, be carried out with other mordants, even for the production of bright colours, and it is now frequently employed with certain alizarin dyestuffs for the production of pale shades which require to be very even and regular in colour. There is still another method of applying Mordant Colours in wool-dyeing, in which the dyestuff and the mordant are applied simultaneously from the beginning; it is known as the "single-bath method." It is only successful, however, in the case of certain colouring matters and mordants, to some of which reference will be made in the following paragraphs.

The Natural Mordant Colours.—It is interesting to note that nearly all the natural or vegetable dyestuffs employed belong to the class of Mordant Colours, the most important of these being included in the following list:—*Madder, Cochineal, Peachwood, Sapanwood, Limawood, Camwood, Barwood, Sanderswood, Old Fustic, Young Fustic, Quercitron Bark, Persian Berries, Weld, Logwood*.

Madder consists of the dried ground roots of *Rubia tinctorum*, a plant of Indian origin. Formerly cultivated largely in France and Holland, it was long one of the most important dyestuffs employed, chiefly in the production of Turkey-red and in calico-printing, also in wool-dyeing. With the different mordants it yields very distinct colours, all fast to light and soap, namely, red with aluminium, orange with tin, reddish brown with chromium, purple and black with iron. Madder contains two closely allied colouring matters, namely, alizarin and purpurin. The former, which is by far the more important, is now prepared artificially from the coal-tar product anthracene, and has almost entirely superseded madder.

Cochineal is the dried scale-insect *Coccus cacti*, which lives on certain of the cactus plants of Mexico and elsewhere. The rearing of cochineal was once a large and important industry, and although still pursued, it has seriously declined, in consequence of the discovery of the azo scarlets derived from coal-tar. The colouring matter of cochineal, carminic acid, is believed by chemists to be a derivative of naphthalene, but its artificial production has not yet been accomplished. Cochineal dyes a purple colour with chromium mordant, crimson with aluminium, scarlet with tin, and grey or slate with iron. Its chief employment is for the purpose of dyeing crimson, and more especially scarlet, on wool. Crimson is dyed by mordanting the wool with alum and tartar and dyeing in a separate bath with ground cochineal. Scarlet on wool is obtained by the single-bath method, namely, by dyeing the wool with a mixture of stannous chloride (or nitrate of tin), oxalic acid, and cochineal. It is usual to add also a small amount of the yellow dyestuff flavine in order to obtain a yellower shade of scarlet. The cochineal colours are very fast to light, but somewhat susceptible to the action of alkalis.

Peachwood, Sapanwood and *Limawood* are usually referred to as the "soluble red-woods," because of the solubility in water of the colouring principle they contain. They consist of the ground wood of various species of *Caesalpinia* found in Central America, the East Indies and Peru. They all yield more or less similar colours with the different mordants—claret-brown with chromium, red with aluminium, bright red with tin, dark slate with iron. Owing to the fugitive character of all the colours to light, these dyewoods are now comparatively little employed in dyeing.

Camwood, Barwood and *Sanderswood* represent the so-called "insoluble red-woods," their colouring principles being sparingly soluble even in boiling water. They are obtained from certain species of *Pterocarpus* and *Baphia*, large trees growing in the interior of West Africa. Their general dyeing properties are similar, a claret-brown being obtained with chromium mordant, a brownish red with aluminium, a brighter red with tin, and purplish brown with iron. Their chief employment is in wool-dyeing, for the production of various shades of brown, being best applied by the "stuffing and saddening" method above described; but since the colours are fugitive to light, they are now very largely replaced by alizarin. A brown on wool is obtained by first boiling for one to two hours in a decoction of the ground wood (50%), and then boiling in a separate bath in solution of bichromate of potash (2%) for half an hour. These dye-woods are also employed by the indigo-dyer, in order to give a brownish ground colour to the wool previous to dyeing in the indigo vat, and thus obtain a deeper, fuller blue. The colouring matters contained in these dyewoods have not been exhaustively examined.

Fustic is a yellow dyestuff, and consists of the wood of the dyer's mulberry tree, *Morus tinctoria*, which grows in Cuba, Jamaica, &c. It is still an important and largely used dyestuff, being cheap, and the colours obtained from it being satisfactorily fast to light and other influences. With chromium mordant it yields an olive-yellow or "old-gold" shade; with aluminium, yellow; with tin, a brighter yellow; with iron, an olive-green. It is chiefly employed in wooldyeing along with other dyestuffs, and furnishes the yellow in compound shades. Two colouring principles exist in Old Fustic, namely, morin and maclurin, the former being the most important, and generally regarded as the true colouring matter.

Quercitron Bark consists of the inner bark of an oak-tree, *Quercus tinctoria*, which grows in the North American States. It dyes somewhat like Old Fustic, but gives with aluminium and tin mordants brighter yellows, for which colours it is chiefly used. The colouring principle of Quercitron Bark is called quercitrin, which by the action of boiling mineral acid solutions is decomposed, with the production of the true colouring matter termed quercetin.

So-called *Flavine* is a commercial preparation of Quercitron Bark consisting of quercitrin or of quercetin; it is much used by wool-dyers for the production of bright yellow and orange colours. Wool is dyed in single bath by boiling with a mixture of Flavine (8%), stannous

chloride (4%) and oxalic acid (2%). Flavine is used in small quantity along with cochineal for dyeing scarlet on wool.

Persian Berries are the dried unripe fruit of various species of *Rhamnus* growing in the Levant. The general dyeing properties are similar to those of Quercitron Bark, the orange colour given with tin mordant being particularly brilliant. The high price of this dyestuff causes its employment to be somewhat limited. The colouring matter of Persian Berries is called xanthorhamnin, which by the action of fermentation and acids yields the true dyestuff rhamnetin.

Weld is the dried plant *Reseda luteola*, a species of wild mignonette, formerly largely cultivated in Europe. Its dyeing properties resemble those of Quercitron Bark, but the yellows with aluminium and tin mordants are much brighter and purer, and also faster to light. It is still used to a limited extent for dyeing a bright yellow on woollen cloth and braid for the decoration of military uniforms. Quite recently the colouring matter of Weld, namely, luteolin, has been prepared artificially, but the process is too expensive to be of practical use.

Logwood is the heart-wood of *Haematoxylon campechianum*, a tree growing in Central America. It is the most important natural dyewood at present employed, being largely used for dyeing dark blues and black on silk, wool and cotton. With chromium and aluminium mordants logwood dyes a dark blue, and even black; with tin, a dark purple; and with iron, black. The colours are only moderately fast to light. On wool the mordant is bichromate of potash; on cotton and silk an iron mordant is employed. Before use by the dyer the logwood is ground and aged or oxidized, by allowing moistened heaps of the ground wood to ferment slightly, and by frequently turning it over to expose it freely to the air. By this means the colouring principle haematoxylin which logwood contains is changed into the true colouring matter haemateïn. The constitution of this colouring matter has been recently discovered; it is very closely allied to the brazilin of peachwood, sapanwood and limawood, and is also a member of the γ-pyrone group of colouring matters.

The importance of the above-mentioned natural dyestuffs is gradually diminishing in favour of mordant dyestuffs and others derived from coal-tar. Fustic and logwood are perhaps the most largely used, and may continue to be employed for many years, no satisfactory artificial substitutes having hitherto come into the market.

The *Artificial Mordant* Colours are well represented by alizarin, the colouring matter of the madder root, which was the first natural dyestuff prepared artificially from the coal-tar product anthracene (1868). For this reason many of these colours are frequently referred to as the Alizarin Colours. At the present time, however, there are numerous Mordant Colours which are prepared from other initial materials than anthracene; they are not chemically related to alizarin, and for these the term Alizarin Colours is therefore inappropriate. The property, which Mordant Colours possess in common, of combining with metals and producing lakes, which readily adhere to the fibre, depends upon their chemical constitution, more particularly upon the general and relative position in the molecule of certain side atomic groups. In alizarin there are, for example, two characteristic hydroxyl groups (OH) occupying a special (ortho) position in the molecule, *i.e.* they are next to each other, and also next to one of the socalled ketone groups (C : O). In other Mordant Colours there are carboxyl (COOH) as well as hydroxyl groups, which are all-important in this respect. In addition to this, the general dyeing property is influenced by the constitution of the molecule itself, and by the presence of other side-groups, *e.g.* NH_2, HSO_3, &c., which modify the colour as to solubility or hue. Hence it is that the members of this group, while possessing the mordant-dyeing property in common, differ materially in other points. Some, like alizarin, are not in themselves to be regarded as colouring matters, but rather as colouring principles, because they only yield useful dyes in combination with metallic oxides. According to their constitution, these may yield one or many colours with the various metallic oxides employed, and they are used for cotton as well as for wool and silk. Other Mordant Colours, *e.g.* many of the Direct Colours and others, are capable of dyeing either the vegetable or animal fibres without the aid of a mordant; they are fully developed colouring matters in themselves, and possess the mordantdyeing property as an additional feature, in consequence of the details of their chemical constitution, to which reference has been made in the foregoing paragraphs. As a rule these yield, at most, various shades of one colour with the different oxides, and are only suitable for the animal fibres, particularly wool.

In the following list, the most important artificial Mordant Colours are arranged according to the colour they give in conjunction with the aluminium mordant, unless otherwise indicated. Some of those named here dye the animal fibres, even without mordants; some are Direct Colours possessing mordant-dyeing properties, others are sulphonic acid derivatives of Alizarin Colours, suitable for wool but not for cotton.

Red.—Alizarin, anthrapurpurin, flavopurpurin, purpurin, alizarin Bordeaux, alizarin garnet R, alizarin maroon, alizarin S, cloth red, diamine fast red, anthracene red, chrome red, chrome Bordeaux, salicine red, erio chrome red, emin red, milling red.

Orange and Yellow.—Alizarin orange, alizarin orange G, alizarin yellow paste, alizarin yellow A, alizarin yellow C, anthracene yellow, galloflavin, alizarin yellow GG, alizarin yellow R, diamond flavin G, chrome yellow D, Crumpsall yellow, fast yellow, diamond yellow, benzo orange R, cloth orange, carbazol yellow, chrysamine, milling orange.

Green.—Coeruleïn, coeruleïn S, alizarin green S, fast green (Fe), naphthol green (Fe), Dioxin (Fe), Gambine (Fe), azo green, gallanil green, alizarin green G and B, acid alizarin green, alizarin cyanine green, alizarin viridine, diamond green, chrome green, Domingo green.

Blue.—Alizarin blue, alizarin blue S, alizarin cyanine, anthracene blue, brilliant alizarin blue, alizarin indigo blue S, gallanilic indigo, acid alizarin blue, brilliant alizarin cyanine, alizarin grisole, alizarin sky blue, alizarin saphirole, gallanilide blue, delphine blue, gallamine blue, celestine blue, chrome blue, gallazine A, phenocyanine, coreïne.

Purple and Violet.—Galleïn, alizarin heliotrope, anthraquinone violet, chrome prime, gallocyanine, chrome violet, anthracene chrome violet.

Brown.—Anthracene brown, chromogen, cloth brown, diamond brown, alizarin brown, fast brown, alizarin acid brown, chrome brown, palatine chrome brown, erio chrome brown.

Black.—Alizarin black, diamond black, alizarin blue black, alizarin cyanine black, alizarin fast grey, chromotrope, chrome black, erio chrome black, anthracite black, acid alizarin black, anthracene chrome black.

A brief description of the application of a few of the more important of the above colouring matters will suffice.

Alizarin, *Anthrapurpurin* and *Flavopurpurin* give somewhat similar shades with the different mordants, namely, brown with chromium, red with aluminium, orange with tin, and purple with iron.

In *wool*-dyeing they are applied along with other Mordant Colours on chromium mordant for the production of a large variety of compound shades, browns, drabs, greys, &c., the presence of acetic acid in the dyebath being advantageous. When alum and tartar mordant is employed, for the production of reds, it is necessary to add a small amount (4%) of calcium acetate to the dyebath, in order to neutralize the strong acidity of the mordanted wool, and to furnish the calcium of the colour-lake fixed upon the fibre, which is regarded as an aluminium-calcium compound of the colouring matter.

In *cotton*-dyeing the above colouring matters are chiefly used for the production of so-called Turkey-red, a colour remarkable for its brilliancy and its fastness to light and soap. These properties are due to the preparation of the cotton with oil, in addition to the ordinary mordanting and dyeing, whereby there is fixed on the fibre a permanent and stable lake, in which aluminium and calcium are combined with alizarin and some form of fatty oxy-acid. In the older processes employed, the preparation of the cotton with oil was effected by passing the material several times through emulsions of olive oil and potassium carbonate solution; at a later date, and even now in the case of cloth, the cotton is first impregnated with hot oil (Steiner's process), then passed through solutions of alkali carbonate. After the preparation with oil or oil-emulsions, the cotton is "stoved," *i.e.* heated for several hours in special chambers or stoves to a temperature of about 70° C., during which operation the oil is decomposed and oxidized and becomes indelibly attached to the fibre. The oil-prepared cotton is steeped in cold solutions of basic aluminium sulphate or acetate, washed, dyed with alizarin, and finally boiled for several hours with soap solution under pressure in order to brighten the colour. In the more recent and much more expeditious "sulphated-oil process," castor oil is employed instead of olive oil, and before use it is submitted to a treatment with sulphuric acid, the sulphated oil thus obtained being finally more or less neutralized with alkali. The cotton is impregnated with this sulphated-oil solution, dried, mordanted with aluminium acetate, dyed, dried, steamed and soaped. The operation of steaming plays an important part in brightening and fixing the colour-lake on the fibre. In these and all other Turkey-red processes, the oil, probably in the form of a fatty oxy-acid, acts as a fixing agent for the aluminium and enters into the composition of the red lake, imparting to it both brilliancy and permanency.

Alizarin S is a sulphonic acid derivative of alizarin, and since it is much more soluble, it readily yields level colours. Silk is dyed in a similar manner to wool, the fibre being mordanted by the ordinary methods and then dyed in a separate bath.

Diamine Fast Red is applied to cotton as a Direct Colour, with the addition of soda or soap

to the dyebath. By treating the dyed colour with a solution of fluoride of chromium, its fastness to washing is materially increased. Wool is dyed in a similar manner, sodium sulphate being added to the dyebath, and the dyed colour treated with fluoride of chromium or bichromate of potash. On wool, the colour is so extremely fast to light and to milling that it may well serve as a substitute for alizarin.

Alizarin Orange is employed in the same manner as alizarin. In wool-dyeing it is usually applied on chromium mordant for browns and a variety of compound shades in combination with other Alizarin Colours and dyewood extracts, less frequently on aluminium mordant.

Galloflavin is used in wool and silk dyeing on chromium mordant as a substitute for fustic and other yellow dyewoods, to furnish the yellow part of compound shades.

The alizarin yellows, R and GG, anthracene yellow, diamond flavine, chrome yellow, diamond yellow, carbazol yellow, chrysamine, &c., are Direct Colours with mordant-dyeing properties. They also serve as substitutes for fustic in wool or silk dyeing, and are dyed either on a chromium mordant, or first in an acid bath and afterwards saddened with bichromate of potash.

Coeruleïn is employed in dyeing wool, silk or cotton with aluminium or chromium mordants, either as a self-colour or for compound shades. With aluminium mordant the colour is a moderately bright green, more particularly on silk; with chromium mordant, an olive-green. Coeruleïn S is the more soluble bisulphite compound of the ordinary coeruleïn. It is applied in the same manner, care being taken, however, to dye for some time (one hour) at a temperature not exceeding 60° C. until the bath is nearly exhausted, and then only raising the temperature to the boiling point. Without this precaution coeruleïn S is decomposed, and the ordinary insoluble coeruleïn is precipitated. The colours obtained are very fast to light.

Fast Green, *Dioxine* and *Gambine* are chiefly of use in calico-printing and in wool-dyeing. With iron mordant they yield olive-greens, which on wool are extremely fast to light. Cotton is impregnated with ferrous acetate, dried, aged and fixed with silicate of soda, then dyed in a neutral bath. Wool is mordanted with ferrous sulphate and tartar (3% of each) and dyed in a neutral bath.

Acid Alizarin Green, *Alizarin Cyanine Green* and *Diamond Green* all dye wool direct in a bath acidified with acetic or sulphuric acid, and the dyed colour may be afterwards fixed or saddened with bichromate of potash, or they may be dyed on chromium-mordanted wool. The first method is very useful for pale shades, since the colours are very level or regular.

Alizarin Blue is a dark blue dyestuff which, owing to the fastness of the colours it yields, has for many years been regarded as a worthy substitute for indigo in wool-dyeing. It is applied in the same manner as alizarin, the chromium mordant being alone employed. Alizarin blue S is the soluble sodium bisulphite compound of alizarin blue; it corresponds, therefore, to the above-mentioned coeruleïn S, and in its application the same precautions as to the temperature of the dyebath are necessary. The fastness of the dyed colours to light, milling and acid satisfy the highest requirements.

Alizarin Cyanine, *Anthracene Blue* and *Brilliant Alizarin Blue* were discovered later than the above-mentioned alizarin blues, and, owing to their greater solubility and other advantages, they have largely replaced them as substitutes for indigo. They are dyed on chromium-mordanted wool, silk or cotton, and yield dark purplish or greenish blues, according to the particular brand employed. The fastness of the dyed colours to light, and general durability, are very satisfactory, but in fastness to milling and acids they are to some extent inferior to alizarin blue.

Celestine Blue and *Chrome Blue* dye purplish blue and bright blue respectively, and are dyed in the ordinary way upon a chromium mordant. The colours they yield are inferior to the Alizarin Colours in fastness to light, but on account of their clear shades they are often used for brightening other colours.

Brilliant Alizarin Cyanine, *Alizarin Viridine* and *Alizarin Saphirole* are true Alizarin Colours, and possess the same fastness to light as other colours of this class. Unlike most of the Alizarin Colours, they are capable of dyeing wool satisfactorily without the aid of a metallic mordant—namely, with the addition of sulphuric acid to the dyebath, in the same manner as the Acid Colours. If necessary, the dyed colours may be treated with bichromate of potash. The colours thus produced are very fast to light and very level, hence these dyestuffs are valuable in the production of the most delicate compound shades, such as drabs, slates, greys, &c., which are desired to be fast to light. Alizarin saphirole dyes clear blue, the colour produced being much more brilliant even than those of brilliant alizarin cyanine.

Galleïn, *Gallocyanine*, and especially *Chrome Violet*, dye somewhat bright purple shades, and are hence frequently employed for brightening other colours, but they are only moderately fast to light. They are applied in the usual manner on a chromium mordant.

Anthracene Brown is largely employed in the production of compound shades. It dyes a dark, somewhat reddish, brown on chromium mordant, the colour being very even and extremely fast to light.

Alizarin Black is dyed on chromium mordant in the same manner as alizarin, and is used as a self-colour or in combination with other Alizarin Colours.

Diamond Black is very useful for dyeing good blacks on wool, fast to light and acids. The wool is first dyed with the addition of acetic and finally sulphuric acid. When the dyebath is exhausted, bichromate of potash (2%) is added, and boiling is continued for half an hour longer.

The *erio chrome colours* (black, brown, red, &c.) are applied in wool dyeing like diamond black.

Chromotrope, of which there are several brands, is an Acid Colour which is applied to wool in an acid bath in the usual manner. The red or purple colours thus obtained are saddened in the same bath with bichromate of potash and changed into black, the colouring matter being oxidized and simultaneously combined with chromium.

MISCELLANEOUS COLOURS.—Under this head there may be arranged a few dyestuffs which, although capable of inclusion under one or other of the foregoing groups, it is more convenient to treat of separately. Indigo, Aniline Black and Catechu, for example, might be placed in the class of Developed Colours, since they are all developed on the fibre, and indeed by the same method, namely, by oxidation.

Indigo is one of our most important blue dyestuffs, which has been employed from the earliest times. Indigo, being insoluble in water, would be of no use in dyeing if it were not capable of being rendered soluble. This is effected in two ways, corresponding to which there are two methods of dyeing with indigo. One method consists in dissolving the indigo in very strong sulphuric acid, whereby it is converted into indigotin-disulphonic acid (Indigo Extract), which is readily soluble in water. This substance belongs to the group of Acid Colours; hence it is applied to the animal fibres, wool and silk, by boiling in a solution of the colouring matter slightly acidified with sulphuric acid. The second and most important method is based on the fact that under the influence of reducing agents (*i.e.* substances capable of yielding nascent hydrogen) indigo blue is changed into indigo white, which is soluble in alkali, the solution thus obtained being called a "vat." If textile materials are steeped in a clear yellow solution of the reduced indigo and then exposed to air, the indigo white absorbed by the fibre is oxidized and reconverted into indigo blue within and upon the fibre, which thus becomes dyed blue; this is the so-called "indigo-vat" method of dyeing. Comparing the two methods, the "indigo-extract" method is only applicable to the animal fibres, and although it gives brighter colours, they are fugitive to light and are decolourized by washing with alkaline solutions; the "vat method" is applicable to all fibres, and gives somewhat dull blues, which are very fast to light, washing, &c.

Cotton is dyed by means of the "*lime and copperas vat*," the "*zinc powder vat*," or the "*hydrosulphite vat*." In the first-mentioned vat the ingredients are quicklime, ferrous sulphate and finely ground indigo; the lime decomposes the ferrous sulphate and precipitates ferrous hydrate; this quickly reduces the indigo to indigo white, which dissolves in the excess of lime present. The ingredients of the zinc powder vat are zinc powder, lime and indigo; in the presence of the lime and indigo the zinc takes up oxygen from the water, liberating the hydrogen necessary to reduce the indigo, as in the previous vat. The constituents of the hydrosulphite vat are hydrosulphite of soda, lime and indigo. The requisite hydrosulphite of soda is prepared by allowing zinc powder (13 lb) to act upon a cold concentrated solution of bisulphite of soda (17 gallons of sp. gr. 1.225), taking care to avoid, as much as possible, access of air and any heating of the mixture, to prevent decomposition. The solution thus obtained is thoroughly neutralized by the addition of lime; and after settling, the clear liquor is used for the vat, along with indigo and lime. Here again the hydrosulphite takes up oxygen from the water and liberates the necessary hydrogen. It is found convenient to prepare, in the first instance, a very concentrated standard of reduced indigo, and to add as much of this to the dye-vat as may be required, along with lime and a little hyposulphite of soda. The advantages of this vat are that it is easily prepared and that there is very little sediment; moreover, it can be employed in dyeing wool, as well as cotton, and it is now very generally in use. The vat usually employed for dyeing *wool* is the so-called "woad vat," which differs from the foregoing in that the hydrogen necessary to reduce the indigo and bring it into solution is furnished, not by the action of chemical agents, but by means of fermentation. The ingredients of the woad vat are indigo, woad, bran, madder and

lime. The woad here employed is prepared by grinding the leaves of the woad plant (*Isatis tinctoria*) to a paste, which is allowed to ferment and then partially dried. It serves as the ferment to excite lactic and butyric fermentation with the aid of the bran and madder, the necessary hydrogen being thus evolved. Excessive fermentation is avoided by making timely additions of lime; sluggish fermentation is accelerated by additions of bran and slightly raising the temperature. When the reduction and complete solution of the indigo is effected, the vat is allowed to settle, and the woollen material is immersed and moved about in the clear liquor for half an hour to two hours, according to the shade required, then squeezed and exposed to the air in order to develop the blue colour on the fibre.

Thioindigo red is an artificial colouring matter belonging to the indigo series and comes into the market in the form of a paste. It is used in dyeing in exactly the same way as indigo, yielding shades which range from a somewhat dull pink to a full claret shade of red. The colours obtained are remarkable for their fastness.

Indanthrene. This colouring matter, which is also sold as a paste, is an anthracene derivative, being formed by the action of caustic potash on β-amidoanthraquinone. It is reduced by hydrosulphite of soda yielding a blue vat, in which cotton and other vegetable fibres are dyed in the same way as in the indigo vat. Since a fair amount of caustic soda is necessary for the setting of the vat, the dyestuff is not suitable for animal fibres. Indanthrene yields on cotton reddish shades of blue which are extremely fast to all external influences; in fact the colour is so fast that when once fixed on cotton it cannot be removed again from the fibre by any known means.

Other vat colours belonging to this series, which are similarly applied, are flavanthrene (yellow), viridanthrene (green), fuscanthrene (grey-brown), violanthrene (dull violet) and melanthrene (grey to black). The *algol colours* resemble the indanthrene colours in their properties and application.

Aniline Black differs from other dyes in that it is not sold as a ready-made dyestuff, but is produced *in situ* upon the fibre by the oxidation of aniline. It is chiefly used for cotton, also for silk and cotton-silk union fabrics, but seldom or not at all for wool. Properly applied, this colour is one of the most permanent to light and other influences with which we are acquainted. One method of dyeing cotton is to work the material for about two hours in a cold solution containing aniline (10 parts), hydrochloric acid (20 parts), bichromate of potash (20 parts), sulphuric acid (20 parts), and ferrous sulphate (10 parts). The ferrous sulphate here employed is oxidized by the chromic acid to a ferric salt, which serves as a carrier of oxygen to the aniline. This method of dyeing is easily carried out, and it gives a good black; but since much of the colouring matter is precipitated on the fibre superficially as well as in the bath itself, the colour has the defect of rubbing off. Another method is to impregnate the cotton with a solution containing aniline hydrochloride (35 parts), neutralized with addition of a little aniline oil, sodium chlorate (10 parts), ammonium chloride (10 parts). Another mixture is 1.8 part aniline salt, 12 parts potassium ferrocyanide, 200 parts water, 3.5 parts potassium chlorate dissolved in water. After squeezing, the material is passed through a special oxidation chamber, the air of which is heated to about 50° C. and also supplied with moisture. This oxidizing or ageing is continuous, the material passing into the chamber at one end in a colourless condition, and after about 20 minutes passing out again with the black fully developed, a final treatment with hot chromic acid solution and soaping being necessary to complete the process. In this method, employing the first-mentioned solution, chlorate of copper is formed, and this being a very unstable compound, readily decomposes, and the aniline is oxidized by the liberated chlor-oxygen compounds. The presence in the mixture of a metallic salt is very important in aiding the development of the black, and for this purpose salts of vanadium, cerium and copper have proved to be specially useful. The chemistry of aniline black is still incomplete, but it would appear that there are several oxidation products of aniline. The first product is so-called emeraldine, a dark green substance of the nature of a salt, which by treatment with alkali yields a dark blue base called azurine. The further oxidation of emeraldine yields nigraniline, also a dark green salt, but the free base of which has a violet black colour. The latter becomes greenish under the influence of acids, especially sulphuric acid, and this explains the defect known as "greening" which is developed in ordinary aniline blacks during exposure to air. By a supplementary oxidation with chromic acid such a black is rendered ungreenable, the nigraniline being probably changed into the more stable chromate of nigraniline.

Catechu is a valuable brown dyestuff, obtained from various species of *Acacia*, *Areca* and *Uncaria* growing in India. The wood, leaves and fruit of these plants are extracted with boiling water; the decoction is then evaporated to dryness or to a pasty consistency. Catechu is largely used by the cotton dyer for the production of brown, drab and similar colours. It is seldom employed for wool. Cotton is usually dyed by boiling it for about one hour in a decoction of catechu (100%) containing copper sulphate (5%). After squeezing, the material is boiled for about fifteen minutes in a solution of bichromate of potash (¼ oz. per gal.), then

washed and dried. By repeating the operations two or three times deeper shades are obtained. During the boiling with catechu the cotton attracts the active principles catechin and catechu-tannic acid, but it thus acquires only a pale brown colour; in the bichromate of potash, however, these are oxidized to form insoluble japonic acid, which permeates the fibre, and a deep brown colour is thus developed. Catechu browns are fast to a variety of influences, *e.g.* washing, alkalis, acids, &c., but less so to light. Catechu has been recently much employed, in conjunction with copper sulphate, for dyeing the so-called khaki-brown on woollen material for military clothing. On silk, catechu is much used for weighting purposes in dyeing black.

MINERAL COLOURS.—Those include Chrome Yellow, Iron Buff, Prussian Blue and Manganese Brown.

Chrome Yellow is only useful in cotton-dyeing as a self-colour, or for conversion into chrome orange, or, in conjunction with indigo, for the production of fast green colours. The cotton is first impregnated with a solution of lead acetate or nitrate, squeezed, and then passed through a solution of sodium sulphate or lime water to fix the lead on the fibre as sulphate or oxide of lead. The material is then passed through a solution of bichromate of potash. The colour is changed to a rich orange by a short, rapid passage through boiling milk of lime, and at once washing with water, a basic chromate of lead being thus produced. The colour is fast to light, but has the defect of being blackened by sulphuretted hydrogen.

Iron Buff is produced by impregnating the cotton with a solution of ferrous sulphate, squeezing, passing into sodium hydrate or carbonate solution, and finally exposing to air, or passing through a dilute solution of bleaching powder. The colour obtained, which is virtually oxide of iron, or iron-rust, is fast to light and washing, but is readily removed by acids.

Prussian Blue is applicable to wool, cotton and silk, but since the introduction of coal-tar blues its employment has been very much restricted. The colour is obtained on cotton by first dyeing an iron buff, according to the method just described, and then passing the dyed cotton into an acidified solution of potassium ferrocyanide, when the blue is at once developed. A similar method is employed for silk. Wool is dyed by heating it in a solution containing potassium ferricyanide and sulphuric acid. The colour is developed gradually as the temperature rises; it may be rendered brighter by the addition of stannous chloride. On wool and silk Prussian blue is very fast to light, but alkalis turn it brown (ferric oxide).

Manganese brown or *bronze* is applied in wool, silk and cotton dyeing. The animal fibres are readily dyed by boiling with a solution of potassium permanganate, which, being at first absorbed by the fibre, is readily reduced to insoluble brown manganic hydrate. Since caustic potash is generated from the permanganate and is liable to act detrimentally on the fibre, it is advisable to add some magnesium sulphate to the permanganate bath in order to counteract this effect. Imitation furs are dyed in this manner on wool-plush, the tips or other parts of the fibres being bleached by the application of sulphurous acid. Cotton is dyed by first impregnating it with a solution of manganous chloride, then dyeing and passing into a hot solution of caustic soda. There is thus precipitated on the fibre manganous hydrate, which by a short passage into a cold dilute solution of bleaching powder is oxidized and converted into the brown manganic hydrate. This manganese bronze or brown colour is very susceptible to, and readily bleached by, reducing agents; hence when exposed to the action of an atmosphere in which gas is freely burnt, the colour is liable to be discharged, especially where the fabric is most exposed. In other respects manganese bronze is a very fast colour.

Dyeing on a large Scale.—It is not possible to give here more than a bare outline of the methods which are used on the large scale for dyeing textile fibres, yarns and fabrics. In principle, dyeing is effected by allowing an aqueous[1] solution of the dye-stuff, with or without additions (alkalis, acids, salts, &c.), to act, usually at an elevated temperature, on the material to be dyed. During the process it is necessary, in order to ensure the uniform distribution of the dyestuff in the material, that the latter should either be moved more or less continuously in the dye liquor or that the dye liquor should be circulated through the material. The former mode of operation is in general use for hank, warp and piece dyeing, but for textile fibres in the loose condition or in the form of "slubbing," "sliver" or "cops" (see SPINNING) the latter method has, in consequence of the introduction of improved machinery, come more and more into vogue within recent years.

Loose Material.—Cotton and wool are frequently dyed in the loose state, *i.e.* before being subjected to any mechanical treatment. The simplest method of effecting this is to treat the material in open vessels (boilers) which can be heated either by means of steam or direct fire. Since, however, a certain amount of felting or matting of the fibres cannot be avoided, it is frequently found to be more advantageous to effect these treatments in specially

constructed apparatus in which the dye liquors are circulated through the material.

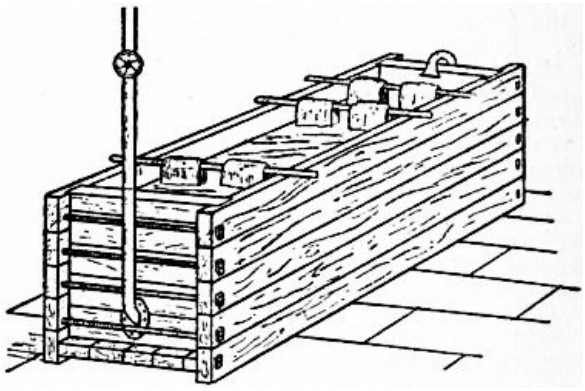

FIG. 1.—Dye-vat for Yarn.

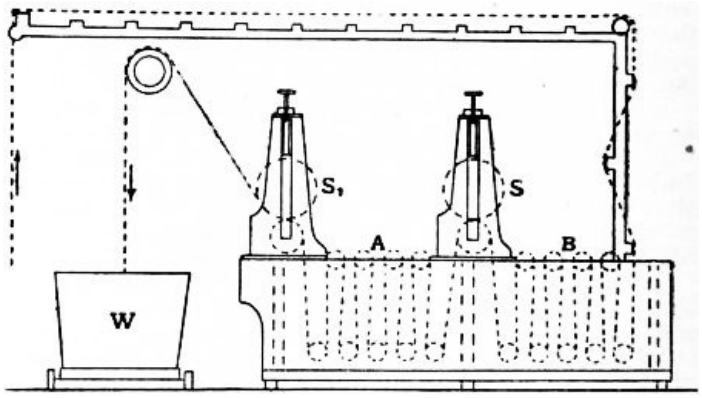

FIG. 2.

Yarn.—Yarn may be dyed either in the hank, in the warp or in the cop, *i.e.* in the form in which the yarn leaves the spinning frame. The dyeing in the *hank* is carried out in rectangular dye-vats constructed of wood or stone like that shown in fig. 1, in which the hanks are suspended from smooth wooden poles or rods resting on the sides, and are thus immersed almost entirely in the dye liquor. The heating of the vat is effected either by means of live steam, *i.e.* by blowing steam into the dye solution from a perforated pipe which runs along the bottom of the vat, or by means of a steam coil similarly situated. In order to expose the hanks as uniformly as possible to the action of the dye liquor, they are turned by hand at regular intervals until the operation is finished. Washing off is effected in the same or in a similar vessel, after which excess of water is removed by wringing by hand, through squeezing rollers or, what is generally preferred, in a hydro-extractor (centrifugal machine). The drying of the dyed and washed yarn is generally effected by suspending it on poles in steam-heated drying chambers. Yarn in the *warp* is dyed in vats or "boxes" like that shown in fig. 2, through which it is caused to pass continuously. The warps to be dyed pass slowly up and down over the loose rollers in the first box B, then through squeezing rollers S into the next, and the same thing occurs in the second (also third and fourth in a four-box machine) box A, whence they are delivered through a second pair of squeezing rollers S_1 into the wagon W. The boxes may contain the same or different liquors, according to the nature of the dyestuff employed. Washing is done in the same machine, while drying is effected on a cylinder drying machine like that shown in figs. 8 and 9 of BLEACHING. Latterly, machines have been introduced for dyeing warps on the beam, the dye liquor being caused to circulate through the material, and the system appears to be meeting with considerable success. Large quantities of yarn, especially cotton, are now dyed in the cop. When the dyed yarn is to be used as weft the main advantage of this method is at once apparent, inasmuch as the labour, time and waste of material incurred by reeling into hanks and then winding back into the compact form so as to fit into the shuttle are avoided. On the other hand the number of fast dyestuffs suitable for cop dyeing is very limited. In the original cop-dyeing machine constructed by Graemiger a thin tapering perforated metallic tube is inserted in the hollow of each cop. The cops are then attached to a perforated disk (which constitutes the lid of a chamber or box) by inserting the protruding ends of the tubes into the perforations. The chamber is now immersed in the dye-bath and the hot liquor is drawn through the cops by means of a centrifugal pump and returned continuously to the dye-bath. This principle, which is known as the skewer or spindle system, is the one on which most modern cop-dyeing machines are based. In the so-called "compact" system of cop dyeing the cops are

packed as closely as possible in a box, the top and bottom (or the two opposite sides) of which are perforated, the interstices between the cops being filled up with loose cotton, ground cork or sand. The dye liquor is then drawn by suction or forced by pressure through the box, thus permeating and dyeing the cops.

Pieces.—Plain shades are usually dyed in the piece, this being the most economical and at the same time the most expeditious means of obtaining the desired effect. The dyeing of piece goods may be effected by running them through the dye liquor either at full breadth or in rope form. The machine in most common use for the first method is the Lancashire "jigger," which is simple in principle and is shown in section in fig. 3. It consists essentially of a dye-vessel constructed of wood or cast iron and containing loose guide rollers, *r* and *r*, at the top and bottom. By coupling up the roller B with the driving gear the pieces which are batched on A are drawn through the dye liquor and rolled on to B. A band brake (not shown in the figure) applied to the axis of A gives the pieces the required amount of tension in passing through the dye-bath. As soon as the whole of the pieces have passed through in this way from A to B, the machine is reversed, and roller A draws them back again through the bath in a similar way on to roller A. This alternating process goes on until the dyeing is finished, when the goods are washed off, squeezed and dried. The jigger is especially useful in cotton piece dyeing, one great advantage being that it is suited for what is known as a "short bath," *i.e.* a bath containing a minimum amount of dye liquor, this being of great importance in the application of dyestuffs which do not exhaust well, like the direct colours and the sulphide colours. The padding machine is similar in principle to the jigger, the pieces running over loose guide rollers through the mordant or dye solution contained in a trough of suitable shape and size, but on leaving the machine they pass through a pair of squeezing rollers which uniformly express the excess of liquor and cause it to be returned to the bath. The padding machine is used more for preparing (mordanting, &c.) than for dyeing.

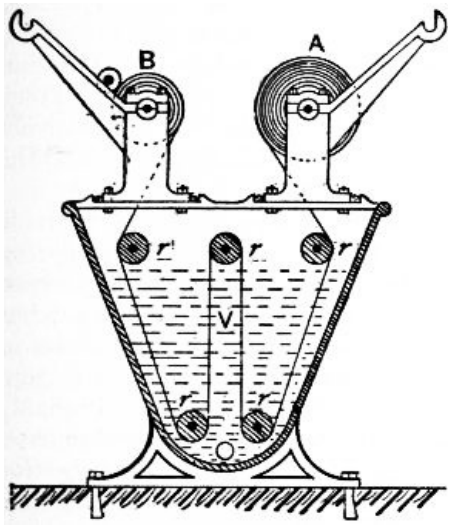

FIG. 3.—Dye-jigger.

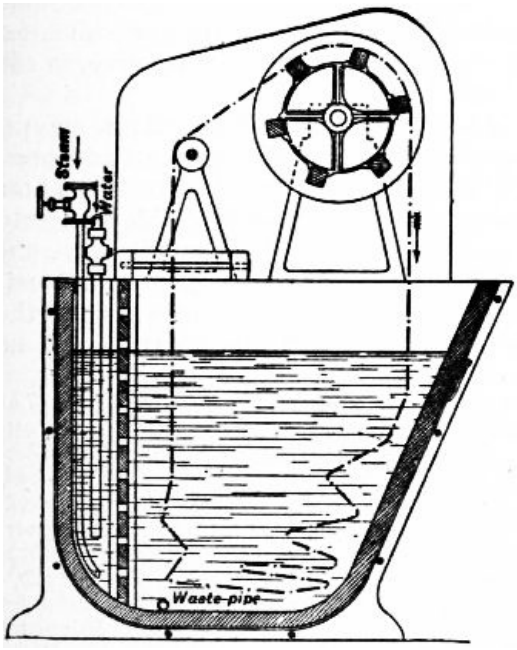

FIG. 4.—Dye-vat for Piece Goods.

For the dyeing of pieces in rope form a so-called "dye-beck" is used, which is a machine of larger dimensions than the jigger. Across the dye-bath is attached a winch W (see fig. 4), by means of which the pieces, sewn together at the ends so as to form an endless band, are caused to circulate through the machine, being drawn up on the front side of the machine and allowed to drop back into the dye liquor on the other. This form of machine is particularly suited for the mordanting and dyeing of heavy goods. Washing off may be done in the same machine.

The drying of piece goods is done on steam-heated cylinders like those used for the drying of bleached goods (see BLEACHING).

The operations which precede dyeing vary according to the material to be dyed and the effects which it is desired to produce. Loose wool, woollen and worsted yarn and piece goods of the same material are almost invariably scoured (see BLEACHING) before dyeing in order to remove the oily or greasy impurities which would otherwise interfere with the penetration of the dye solution. Silk is subjected to the process of discharging or boiling off (see BLEACHING) in order to remove the silk gum or sericine. Cotton which is to be dyed in dark shades does not require any preparatory treatment, but for light or very bright shades it is bleached before dyeing. Wool and silk are seldom bleached before dyeing. Cotton, wool and union (cotton warp and worsted weft) fabrics are frequently singed (see BLEACHING)

before dyeing. Worsted yarn, especially two-fold yarn, is very liable to curl and become entangled when scoured, and in order to avoid this it is necessary to stretch and "set" it. To this end it is stretched tight on a specially constructed frame, placed in boiling water, and then cooled. Similarly, union fabrics are liable to "cockle" when wetted, and although this defect may be put right in finishing, spots of water or raindrops will give an uneven appearance of a permanent character to the goods. To avoid this, the pieces are subjected previous to dyeing to the so-called "crabbing" process, in which they are drawn under great tension through boiling water and wound on to perforated hollow cylinders. Steam is then blown through the goods and they are allowed to cool.

Theory of dyeing.

With respect to the question of colour, we meet with two kinds of substances in nature, those which possess colour and those which do not. Why this difference? The physicist says the former are bodies which reflect all the coloured rays of the spectrum composing white light—if opaque, they appear white; if transparent, they are colourless. The latter are bodies which absorb some of the spectrum rays only, reflecting the remainder, and these together produce the impression of colour. A black substance is one which absorbs all the spectrum rays. The fundamental reason, however, of this difference of action on the part of substances towards light remains still unknown. All substances which possess colour are not necessarily dyestuffs, and the question may be again asked, Why? It is a remarkable circumstance that most of the dyestuffs at present employed occur among the so-called aromatic or benzene compounds derived from coal-tar, and a careful study of these has furnished a general explanation of the point in question, which briefly is, that the dyeing property of a substance depends upon its chemical constitution. Speaking generally, those colouring matters which have the simplest constitution are yellow, and as the molecular weight increases their colour passes into orange, red, violet and blue. In recent years chemists have begun to regard the constitution of nearly all dyestuffs as similar to that of Quinone, and some even believe that all coloured organic compounds have a quinonoid structure. According to O.N. Witt, a colourless hydrocarbon, *e.g.* benzene, becomes coloured by the introduction of one or more special groups of atoms, which he terms the colour-bearing or *chromophorous groups*, *e.g.* NO_2, — N : N —, &c. Benzene, for example, is colourless, whereas nitro-benzene and azo-benzene are yellow. Such compounds containing chromophorous groups are termed chromogens, because, although not dyestuffs themselves, they are capable of generating such by the further introduction of salt-forming atomic groups, *e.g.* OH, NH_2. These Witt terms *auxochromous* groups. In this way the chromogen *tri-nitro-benzene*, $C_6H_3(NO_2)_3$, becomes the dyestuff *tri-nitro-phenol* (picric acid), $C_6H_2(NO_2)_3(OH)$, and the chromogen *azo-benzene*, $C_6H_5{\cdot}N : N{\cdot}C_6H_5$, is changed into the dyestuff *amido-azo-benzene* (Fast Yellow), $C_6H_5{\cdot}N : N{\cdot}C_6H_4(NH_2)$. These two dyestuffs are typical of a large number which possess either an acid or a basic character according as they contain hydroxyl (OH) or amido (NH_2) groups, and correspond to the Acid Colours and Basic Colours to which reference has already been made. Other important atomic groups which frequently occur, in addition to the above, are the carboxyl (COOH) and the sulphonic acid (HSO_3) groups; these either increase the solubility of the colouring matter or assist in causing it to be attracted by the fibre, &c. In many cases the free colour-acid or free colour-base has little colour, this being only developed in the salt. The free base rosaniline, for example, is colourless, whereas the salt magenta (rosaniline hydrochloride) has a deep crimson colour in solution. The free acid Alizarin is orange, while its alumina-salt is bright red. It may be here stated that the scientific classification of colouring matters into Nitro-colours, Azo-colours, &c., already alluded to, is based on their chemical constitution, or the chromophorous groups they contain, whereas the classification according to their mode of application is dependent upon the character and arrangement of the auxochromous groups. The question of the mordant-dyeing property of certain colouring matters containing (OH) and (COOH) groups has already been explained under the head of *Artificial Mordant Colours*.

The peculiar property characteristic of dyestuffs, as distinguished from mere colouring matters, namely, that of being readily attracted by the textile fibres, notably the animal fibres, appears then to be due to their more or less marked acid or basic character. Intimately connected with this is the fact that these fibres also exhibit partly basic and partly acid characters, due to the presence of carboxyl and amido groups. The behaviour of magenta is typical of the Basic Colours. As already indicated, rosaniline, the base of magenta, is colourless, and only becomes coloured by its union with an acid, and yet wool and silk can be as readily dyed with the colourless rosaniline (base) as with the magenta (salt). The explanation is that the base rosaniline has united with the fibre, which here plays the part of an acid, to form a coloured salt. It has also been proved that in dyeing the animal fibres with magenta (rosaniline hydrochloride), the fibre unites with the rosaniline only, and

liberates the hydrochloric acid. Further, magenta will not dye cotton unless the fibre is previously prepared, *e.g.* with the mordant tannic acid, with which the base rosaniline unites to form an insoluble salt. In dyeing wool it is the fibre itself which acts as the mordant. In the case of the Acid Colours the explanation is similar. In many of these the free colour-acid has quite a different colour from that of the alkali-salt, and yet on dyeing wool or silk with the free colour-acid, the fibre exhibits the colour of the alkali-salt and not of the colour-acid. In this case the fibre evidently plays the part of a base. Another fact in favour of the view that the union between fibre and colouring matter is of a chemical nature, is that by altering the chemical constitution of the fibre its dyeing properties are also altered; oxycellulose and nitrocellulose, for example, have a greater attraction for Basic Colours than cellulose. Such facts and considerations as these have helped to establish the view that in the case of dyeing animal fibres with many colouring matters the operation is a *chemical* process, and not merely a mechanical absorption of the dyestuff. A similar explanation does not suffice, however, in the case of dyeing cotton with the Direct Colours. These are attracted by cotton from their solutions as alkali salts, apparently without decomposition. The affinity existing between the fibre and colouring matter is somewhat feeble, for the latter can be removed from the dyed fibre by merely boiling with water. The depth of colour obtained in dyeing varies with the concentration of the colour solution, or with the amount of some neutral salt, *e.g.* sodium chloride, added as an assistant to the dye-bath; moreover, the dye-bath is not exhausted. The colouring matter is submitted to the action of two forces, the solvent power of the water and the affinity of the fibre, and divides itself between the fibre and the water. After dyeing for some time, a state of equilibrium is attained in which the colouring matter is divided between the fibre and the water in a given ratio, and prolonged dyeing does not intensify the dyed colour.

Some investigators hold the view that in some cases the fibres exert a purely physical attraction towards colouring matters, and that the latter are held in an unchanged state by the fibre. The phenomenon is regarded as one of purely mechanical surface-attraction, and is compared with that exercised by animal charcoal when employed in decolourizing a solution of some colouring matter. Some consider such direct dyeing as mere diffusion of the colouring matter into the fibre, and others that the colouring matter is in a state of "solid solution" in the fibre, similar to the solution of a metallic oxide in coloured glass. According to this latter view, the cause of the dyeing of textile fibres is similar to the attraction or solvent action exerted by ether when it withdraws colouring matter from an aqueous solution by agitation. Latterly the view has been advanced that dyeing is due to precipitation of the colloid dyestuffs by the colloid substance of the fibre.

In the case of colours which are dyed on mordants, the question is merely transferred to the nature of the attraction which exists between the fibre and the mordant, for it has been conclusively established that the union between the colouring matter and the mordant is essentially chemical in character.

From our present knowledge it will be seen that we are unable to give a final answer to the question of whether the dyeing process is to be regarded as a chemical or a mechanical process. There are arguments and facts which favour both views; but in the case of wool and silk dyeing, the prevailing opinion in most cases is in favour of the chemical theory, whereas in cotton-dyeing, the mechanical theory is widely accepted. Probably no single theory can explain satisfactorily the fundamental cause of attraction in all cases of dyeing, and further investigation is needed to answer fully this very difficult and abstruse question.

Conclusion.

The poisonous nature or otherwise of the coal-tar dyes has been frequently discussed, and the popular opinion, no doubt dating from the time when magenta and its derivatives were contaminated with arsenic, seems to be that they are for the most part really poisonous, and ought to be avoided for colouring materials worn next the skin, for articles of food, &c. It is satisfactory to know that most of the colours are not poisonous, but some few are—namely, Picric acid, Victoria Orange, Aurantia, Coralline, Metanil Yellow, Orange II. and Safranine. Many coal-tar colours have, indeed, been recommended as antiseptics or as medicinal remedies, *e.g.* Methyl Violet, Auramine and Methylene Blue, because of their special physiological action. In histology and bacteriology many coal-tar colours have rendered excellent service in staining microscopic preparations, and have enabled the investigator to detect differences of structure, &c., previously unsuspected. In photography many of the more fugitive colouring matters, *e.g.* Cyanine, Eosine, Quinoline Red, &c., are employed in the manufacture of ortho-chromatic plates, by means of which the colours of natural objects can be photographed in the same degrees of light and shade as they appear to the eye—blue, for example, appearing a darker grey, yellow, a lighter grey, in the printed photograph.

Since the year 1856, in which the first coal-tar colour, mauve, was discovered, the art of dyeing has made enormous advances, mainly in consequence of the continued introduction of coal-tar colours having the most varied properties and suitable for nearly every requirement. The old idea that the vegetable dyestuffs are superior in fastness to light is gradually being given up, and, if one may judge from the past, it seems evident that in the future there will come a time when all our dyestuffs will be prepared by artificial means.

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(J. J. H.; E. K.)

1 The term "dry dyeing," which is carried out only to a very limited extent, relates to the dyeing of fabrics with the dyestuff dissolved in liquids other than water, *e.g.* benzene, alcohol, &c.

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