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Title: The Contemporary Review, Volume 36, September 1879

Author: Various

Release Date: September 20, 2009 [EBook #30048]

Language: English

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*** START OF THE PROJECT GUTENBERG EBOOK THE CONTEMPORARY REVIEW, VOLUME 36, SEPTEMBER 1879 ***

[Pg i]

THE CONTEMPORARY REVIEW

VOLUME XXXVI. SEPTEMBER-DECEMBER, 1879



STRAHAN AND COMPANY LIMITED
34 PATERNOSTER ROW, LONDON
1879

Ballantyne Press
BALLANTYNE AND HANSON, EDINBURGH
CHANDOS STREET, LONDON

[Pg ii]

[Pg iii]

CONTENTS OF VOLUME XXXVI.

SEPTEMBER, 1879.

	PAGE
The Future of China. By Sir Walter H. Medhurst	1
Animals and Plants. By Professor St. George Mivart	13
The Artistic Dualism of the Renaissance. By Vernon Lee	44
The Social Philosophy and Religion of Comte. By Professor Edward Caird. IV.	66
The Problem of the Great Pyramid. By Richard A. Proctor	93
Conspiracies in Russia under the Reigning Czar. By Karl Blind	120
The First Sin, as Recorded in the Bible and in Ancient Oriental Tradition. By François Lenormant	148
Political and Intellectual Life in Greece. By N. Kasasis	164
Contemporary Books:—	
I. Biblical Literature, under the Direction of the Hon. and Rev. W. H. Fremantle	182

OCTOBER, 1879.

India and Afghanistan. By Lieut.-Colonel R. D. Osborn	193
Critical Idealism in France. By Paul Janet	212
On the Moral Limits of Beneficial Commerce. By Francis W. Newman	232
The Myths of the Sea and the River of Death. By C. F. Keary	243
Mr. Macvey Napier and the Edinburgh Reviewers. By Matthew Browne	263
The Supreme God in the Indo-European Mythology. By James Darmesteter	274
Lazarus Appeals to Dives. By Henry J. Miller	290
The Forms and Colours of Living Creatures. By Professor St. George Mivart	313
Contemporary Life and Thought in Turkey. By an Eastern Statesman	334
Contemporary Books:—	
I. History and Literature of the East, under the Direction of Professor E. H. Palmer	350
II. Classical Literature, under the Direction of Rev. Prebendary J. Davies	359
III. Essays, Novels, Poetry, &c. under the Direction of Matthew Browne	366

NOVEMBER, 1879.

On Freedom. By Professor Max Müller	369
Mr. Gladstone: Two Studies suggested by his "Gleanings of Past Years." I. By a Liberal.—II. By a Conservative	398
The Ancien Régime and the Revolution in France. By Professor von Sybel	432
What is the Actual Condition of Ireland? By Edward Stanley Robertson	451
The Deluge: Its Traditions in Ancient Nations. By François Lenormant	465
Suspended Animation. By Richard A. Proctor	501
John Stuart Mill's Philosophy Tested. IV.—Utilitarianism. By Professor W. Stanley Jevons	521

DECEMBER, 1879.

The Lord's Prayer and the Church: Letters Addressed to the Clergy. By John Ruskin, D.C.L.	539
India under Lord Lytton. By Lieut.-Colonel R. D. Osborn	553
On the Utility to Flowers of their Beauty. By the Hon. Justice Fry	574
Where are we in Art? By Lady Verney	588
Life in Constantinople Fifty Years Ago. By an Eastern Statesman	601
Miracles, Prayer, and Law. By J. Boyd Kinnear	617
What is Rent? By Professor Bonamy Price	630
Buddhism and Jainism. By Professor Monier Williams	644
Lord Beaconsfield:—	665
I. Why we Follow Him. By a Tory.	
II. Why we Disbelieve in Him. By a Whig.	
Contemporary Life and Thought in France. By Gabriel Monod	697

THE FUTURE OF CHINA.

The late reconquest by China of some of her former possessions in Central Asia, and the firm tone in which she is urging her demands upon Russia, in respect of the *Kuldja* territory, are giving her a prominence as a factor in Asiatic politics which she can scarcely be said to have claimed before. These signs of tenacity of purpose, if not of actual vitality, acquire an additional interest when viewed in connection with the recently modified policy of her Government towards Western States; a policy which, whether induced by an honest intention to forego the traditional exclusiveness of past ages, or by a shrewd determination to cope, if possible, with more advanced nations upon the advantageous footing secured by the cultivation of the progressive Arts and Sciences, has had the effect of bringing China into diplomatic relations with the principal Powers of Europe and America, and introducing her as a recognised element into the political calculations of the civilized world. The issue of the *Kuldja* controversy has a special interest for England, as the mistress of adjacent territory in India; but a far greater importance attaches to the result of the larger efforts which China is making to take up a position amongst the nations, and upon the success of which all her political future must depend. It is of that future, and of its bearing upon the interests of China's two great rivals in Asiatic dominion, Russia and Great Britain, that this paper proposes to treat.

It cannot be predicated of the Government of China, at any rate at present, that it is greedy of territory. On the contrary, its responsibilities are already as serious as it must feel at all

competent to fulfil with credit to itself and satisfaction to its people. But, on the other hand, it is remarkably tenacious of parting with a single rood of ground, to which it may claim the right of traditional possession or more recent conquest. When portions of its territory have been torn from its grasp by successful rebellion, it has for the moment yielded to the inevitable. But the earliest opportunity possible has been seized for reentering upon possession, either by force or craft. The late recovery of the province of Yunnan in China proper, and of Chinese Turkestan in Central Asia, after crushing defeats and years of alienation, affords notable instances of this tenacity of purpose. But such successful reentries upon lost dominion have only been effected where the usurping power has partaken of the same or a similar Asiatic character with that of the Chinese themselves. Where circumstances have brought the Government into collision with the more energetic and enterprising people of the West, it has had no alternative but to make material concessions, and to confirm these by treaties of perpetual amity and commerce. Russia and England are the only Western Powers that have thus benefited themselves at the expense of China: Russia, with a view to the enlargement or rectification of her frontier, which from the mouth of the Amour to the foot of the *Tien Shan* is conterminous with that of China; and England, for the protection and promotion of her trade, which must have languished, if not perished, under the constraints of the old *Co-hong* system.

[Pg 2]

Whether the resubjugation of entire provinces by the Imperial Government may be regarded as a blessing or a curse to the populations concerned, it is difficult to decide. For them it is unhappily a mere choice between being at the mercy of unscrupulous adventurers, elated with a series of successes, and rendered ferocious by a life of rapine, but utterly unprepared to introduce any serious system of reform; or being restored to a rule which, although worn out and feeble, has the advantage of an old-established organization, and can prove, by its general policy at any rate, that it has the welfare of the governed seriously at heart. On the whole, setting aside the wholesale cruelty which has unhappily too often distinguished such governmental triumphs on the part of the Chinese, and to which, indeed, the unlucky people seem liable whichever party may happen to gain the ascendancy, the preferable conclusion would seem to be that resubmission to native authority is perhaps the mildest fate that can be desired for those subjects of China whose country has unfortunately been the scene of civil war. But an entirely different result may be looked for when foreign dominion—that is to say, European—has taken the place of Chinese. In the case of England, there can be little fear but that, in spite of the notable mistakes which have at times marked her colonial administration of Asiatic peoples, the primary object to which she has always set herself has been the welfare of the governed, and the development of the resources of the country which they occupy. And even as regards Russia, however irresponsible her system of government, selfish and unscrupulous her foreign policy, and corrupt her executive, may be regarded from an English point of view, still there can be little question that her assumption of authority over any tract of Asian territory must be considered preferable in the interests of philanthropy and general expediency to its restoration to an intrinsically weak and unpractical Government like that of the Chinese.

[Pg 3]

Assuming that the above proposition is a reasonable one, it follows as a fair inference, that the sooner China or any part of it is brought under the sway of some strong and progressive Power the better. And really, looking at the matter from a purely philanthropic and utilitarian point of view, that is about the best fate that can befall its inhabitants, as well in their own interest as in that of the world at large. Many things conspire to show that the days of the ruling dynasty are numbered; and who can say, when the catastrophe does come, whether the huge but crumbling fabric will ever be reconstructed? or, if so, whose will be the head and hand that will accomplish the task? The probability is that the empire will, in spite of the marvellous homogeneity which characterizes its people, at once lose its cohesion, and break up into a number of petty chiefdoms; and one may well imagine the grievous and protracted misery that must follow upon such a dissolution. It would be ridiculous, nay wicked, to suggest that this contingency might be anticipated, and an endeavour made to avert it by the timely absorption of a portion or of the whole of the Chinese territory. But we are entitled to express the hope that the course of mundane affairs may so shape itself as that such a calamity may be indefinitely delayed; or, if it be inevitable, that it may fall to the lot of some nation to take up the reins which shall have the will as well as the power to use the opportunity to the best advantage of the millions concerned.

The speculation seems here to suggest itself, whether there is a Western Power at all likely to find itself placed in this position, or which may be considered a suitable instrument for carrying out the work of reconstruction. The sphere of selection is limited. England and Russia, as far as can at present be foreseen, appear to be the only two Powers whose mission or interest seems likely to impel their influence Eastwards. Any idea that England will ever deliberately enter upon the possession of even a part of Chinese territory may at once be dismissed as unworthy to be entertained. Although her vast trade and world-wide associations are perpetually landing her in perplexing complications with Eastern tribes, complications, too, which at times, in despite of herself, end in conquest or annexation, still her modern policy is anything but aggressive; and if there be one collision which the English people would be less inclined to tolerate than another, it would be that of a little war entered upon for the mere purpose of territorial acquisition or philanthropic reform. China, moreover, is no mere petty principality like Abyssinia, Ashantee, or Afghanistan, that she had need be liable to the risk of annihilation or annexation, even should she again unhappily venture to take up arms against England on account of a mere trade dispute. But with Russia the case is materially different. An acquisitive policy has been traditional with her ever since Peter the Great, with prophetic foresight, laid down the lines by which her future conduct was to be guided; and political interest has none the less urged her on to extend her possessions Asia-wards, and to secure as much seaboard in any direction as will suit her

[Pg 4]

ambitious designs. Conquests in Asia, moreover, provide a convenient safety-valve for adventurous, discontented, or unscrupulous spirits, who might occasion mischief at home, and who cannot otherwise be readily disposed of; whilst they at the same time have the effect of furnishing that outlet for a through trade which has always been the Russian merchant's dream. Russia has already, as is well known, rectified her frontier on the north and west of China, seriously to the diminution of the area not so long ago comprised by the latter, and, by a well-directed combination of courage and craft, she has within the last twenty years succeeded in conquering or annexing extensive and fertile tracts of country in Central Asia. What more likely, therefore, than that, octopus-like, she should continue to stretch out her huge tentacles further and further, until they embrace some of the broad and fair provinces of China within their omnivorous grasp? The advantage of such an acquisition to Russia cannot be over-estimated. The Russian press, it is true, deprecates the acquisition of new territory, as being calculated to hinder the economical development of the people, and seriously to increase the present difficulties of the empire; and there can be little doubt that the dominions of the Czar are far too disproportioned to the numerical sum of his subjects to admit of their having realized, as they might have done, the immense natural riches of the empire. But with the acquisition of almost any part of China proper, Russia would gain territory already thickly peopled to her hand, and possessed of rich resources of every kind; and, could she approach the sea in any direction, she would acquire—what is so important to her maritime and commercial development—a coast-line that would go far towards giving her the commanding position as a naval Power which has always been one of her most cherished ambitions.

And what a glorious field would thereby be afforded her for developing her political designs! Instead of beating her wings to her own discomfiture against the bars which England must always throw about her as long as she persists in her attempts to absorb Turkey, or exercise a covert influence over the tribes on our Indian frontier, she would, if she pressed China-wards in preference, find unlimited opportunities for increasing her resources, enlarging her territory, and extending her sway, no nation caring, or being called upon, to say her nay. That she would prove the most suitable Power to be entrusted with so tremendous a responsibility, is an assertion that few would care to hazard without large qualification. The pitiless despotism which characterizes the Russian rule at home, the unrelenting harshness with which she has treated her Polish subjects, even to the studious stamping out of the nationalism of the people, and the license which has distinguished the grasp by Russian officials of civil power in Central Asia, scarcely tend to render the prospect of the extension of her sway to China very encouraging. But, as has been already advanced, a Russian administration is not without its advantages, as compared to a Chinese, and, unless a radical reform can be looked for in the existing system of government in China itself, a prospect at best problematical, it may safely be said that her people might fare worse than pass under the domination of the Czar.

[Pg 5]

For the Chinese concerned, as has been suggested, the loss might be almost, if not altogether, construed into a gain. They would acquire an autocratic and despotic Government very similar to their own, only more powerful and practical in its operation and results; and, if only one could hope that the rights and prejudices of the people could be respected, and their general interests consulted, the change would on the whole prove an advantageous one for the annexed territories generally. In one respect, at any rate, such a substitution might certainly be expected to bring about a material amelioration of the present condition and prospects of the country at large; and that is the improvement of general communication throughout the empire. Railways would undoubtedly be forthwith introduced, telegraphs laid down, river channels cleared and deepened, canals restored and maintained, and the many obstacles which now clog a might-be flourishing trade permanently removed. China, in fact, only needs a lion-hearted, capable, and progressive Government in order to encourage the enterprise of her people, bring out their many excellent characteristics, and develop the prolific natural resources which she undoubtedly possesses, in her own interest and that of the world in general; and, provided always such a result can be attained, combined with a discreet and paternal care for the people themselves, no one had need deprecate the substitution of a foreign for a native yoke.

It might be objected, Why should not such a thorough reconstruction and subsequent healthy development be attainable under the present dynasty, or, at any rate, under a purely native rule? To this we reply that it is not in the nature of the Chinese to initiate reform or carry it honestly and steadily out. Neither the rulers nor the ruled appreciate its necessity; and, could they be enlightened sufficiently to perceive it, they do not possess the strength of character and fixity of purpose to follow out implicitly the course pointed out. A curious example of this lack of interest and resolve was to be observed as regards the foreign-drilled levies raised at the instance of their foreign advisers after the treaty of Tientsin. Men and money were readily provided to the extent suggested, and the men easily learnt the drill. But the foreign instructors had always to superintend the paying of wages in order to prevent peculation by the native officers, and, the moment their vigilant eyes were removed, drill and discipline were voted a nuisance by officers and men alike, arms and accoutrements ceased to be kept in order, and the force rapidly assumed its purely Chinese character. Relics of these levies exist at this moment, but the most unremitting patience and effort have been needed on the part of the foreign officers to maintain them in a state of anything like respectable discipline or effectiveness. A recent writer^[1] calls attention to the stupendous efforts which the Chinese Government has of late been making towards a reorganization of its naval and military resources upon Western principles, and to the remarkable success which has in consequence attended its campaigns in Western China and Central Asia. But these measures have all owed their conception and execution to foreign energy,

[Pg 6]

enterprise, and ability; and, as will be presently shown, wherever the salutary influence of these is weakened or removed, disorganization and relapse are sure to be the result. Something has, no doubt, been accomplished within the last twenty years towards opening the eyes of the Chinese Government to the wisdom of assuming a recognised place in the comity of nations, and inducing it to introduce various domestic measures of a useful and progressive nature. But, after all, pressure from without, and that of the most painstaking and persistent character, has been needed to effect what little has been done. Let this influence be removed; let the able customs organization now in vogue be taken out of alien hands; let foreign Ministers cease to impress upon the State departments the imperative importance of waking up to international and domestic responsibilities; let arsenals be deprived of foreign superintendence; let steamers throw overboard their foreign masters, mates, and engineers; in a word, let China try to keep afloat without corks, and what will be the consequence? Corruption would inevitably fatten on and extinguish foreign trade; foreign representatives would find Peking too hot to hold them; arsenals would gradually languish and cease to work; native-owned steamers would leave off plying the waters; and the whole country would eventually fall back into a condition of even more rapid decadence than that in which it was found when England first interfered to prop it up. What is perhaps more melancholy to contemplate, there would be few, if any, of her most ardent patriots but would congratulate themselves on the miserable change.

China may, perhaps, be saved from an eventual collapse, or from falling under the sway of all-grasping Russia; but it can only be by a universal development of the existing system of extraneous aid. What has been done for her customs revenue must be extended to all departments of the State, and the employment of foreign heads and hands must be rendered so general as even to permeate the ramifications of the executive in the eighteen provinces. But then the difficulty suggests itself. Where is the *personnel* needful for such a mighty organization to be found, with the talent and probity equal to the charge? England has proved it possible, in the case of India, to produce a corps of administrators who possess a character for ability, uprightness, and high-minded devotion to duty, to which the world can show no equal. But, as experience has so far proved, political balance at Peking demands that the prizes open to competition in the Chinese service should be distributed equally amongst subjects of all nationalities in treaty relations with China; and in such a huge army of *employés* as the exigency would require, and most of whom would probably owe their selection to patronage rather than to merit, it could not be but that many would find a place who might prove even greater curses to the governed than the worst type of the Chinese mandarins themselves. Moreover, such an innovation would practically amount to placing the entire nation under foreign authority, and it may be queried whether it would not be more advantageous for the people to have one uniform foreign rule universally substituted for the native, than to be at the mercy of an executive formed of such heterogeneous materials as those we have described.

[Pg 7]

It may not be out of place to consider here a suggestion, which has been thrown out by more than one representative of the English press, as to the identity of British interests with those of China in resisting the insidious advances of Russia eastwards, and the expediency of giving the former our sympathy, if not material support, in her endeavour to recover *Kuldja* from Russian cupidity. What British interests comprise in that quarter of the globe may be summed up in a few words. Rectification and consolidation of certain portions of the frontier of British India, the maintenance as far as possible of neutral and independent Khanates to act as "buffers" between her territories and those of Russia, and the development of a free and active trade between the Indian and Central Asian markets. It seems scarcely worth the trouble of refuting any arguments that could be brought forward to prove that the concession of a covert or direct support to China in the *Kuldja* controversy would be likely to advantage England in any one of these respects. On the contrary, her interference would more probably imperil her interests under each head, and would most certainly have the effect of greatly incensing a Power which, with all its ill-will, has already shown its desire to conciliate, by withdrawing at our request the influence which it had been tempted in view of certain contingencies to use to our disadvantage in Afghanistan; a Power, too, which must and will pursue its career of acquisition in Central Asia, whatever we may say or do to the contrary; and with which, in view of its probable future there, it is manifestly to our interest as holders of India to live on neighbourly terms. To quote a recent writer on the subject,^[2] "Our object now should be rather to initiate a frank understanding with Russia as to the aims of our respective policies, to secure her agreement to definite boundaries to the spheres of influence of both Powers, and to form, so far as is possible, a union of interests with her in the future development of Asia."

[Pg 8]

Even were China to pledge herself to grant us all the advantages which we should have to bargain for as a consideration for committing ourselves to the serious step of affording her aid, it may be doubted whether she is sufficiently strong to maintain her ground, not merely against Russia, but against any adventurer like Yakoob Beg or rebels like the Panthays, who may suddenly rise up and wrest her territory from her. Then, again, it must be remembered what an alliance with such a Government as that of China is likely to involve. Her civil administration, based although it may be on a system excellently well suited to a people like the Chinese, is so weakened, save in a few isolated instances, by the incapacity, and so debased by the venality of its executive, that it has long since forfeited the confidence and good-will of the masses, and rebellion has only to raise its head to find a fruitful soil for its speedy growth and development. Her army is numerically large, and can be recruited without difficulty, and she has constantly at command any quantity of the most approved war material, so long as there are foreigners to sell and she has the money to buy; to say nothing of what she can now to a certain extent

manufacture for herself. But of strategy and the general science of war her officers are entirely ignorant, and beyond the capability of hurling huge masses of men at the enemy, irrespective of all consequences, she is in no way formidable as a military Power in the European sense of the term, nor could her troops permanently hope to hold their own against those of any Western State. Even the Japanese, in the little affair with China which threatened the peaceful relations of the two countries not long ago, showed themselves quite equal to the occasion, and their sailors and soldiers pined to exhibit their prowess, and prove the value of their recent acquirements in the art of war, as against the conservative and unpractical Chinese. If the rules of civilized warfare are to the Chinese a sealed book, still less can they be said to appreciate its humane side. Their officers fail to value the necessity, and indeed do not seem to possess the power, of protecting their own countrymen from the general license which marks the march of soldiery through, or the military occupation of, any peaceable district; and in the wholesale barbarities which invariably distinguish their triumphs over a conquered foe, they are scarcely to be surpassed by savages of the lowest type. Little more can be said in favour of the Chinese in respect of their relations with England and other Western nations. They have treaties of peace and commerce with the leading Powers, it is true, and they do not fail to act up to the strict letter of these engagements as construed by themselves. But the whole history of their foreign intercourse since 1842 has shown that the Chinese Government has borne with ill grace the restrictions thus imposed upon it, and has embraced every opportunity to evade them in spirit, whilst professing to carry them out in the letter. Trade has been everywhere hampered by vexatious imposts cunningly introduced on all kinds of pretexts, and as pertinaciously persisted in, in spite of pointed remonstrances on the part of foreign representatives. Outrages of a glaring kind have been passed over without redress, or perhaps with a show of redress so ingeniously conceded as to evince distinct sympathy with the perpetrators of the deeds complained of; and the case must be rare, if not unheard of, in which the initiative has been voluntarily taken by a Chinese official in righting a wrong suffered by a foreigner at the hands of a Chinese. Amicable relations prevail between the various foreign communities and the native population by whom they are surrounded; but these may be traced rather to the innate good-nature of the people, and the forbearing conduct of the "strangers from afar," than to any direct effort on the part of the native authorities to encourage and develop friendly feeling. The Chinese Court still affects to regard the Emperor as the Supreme Ruler of all People under Heaven; its recognition of foreign Ministers accredited to it seems never to have advanced beyond the not very flattering ceremonial which accorded them a so-called audience in a body a few years ago; and the relations between the representatives and the high officials at Peking cannot as yet be said to have entered upon a phase which may strictly be styled cordial; and all this, notwithstanding that Chinese representatives to Western Courts have been treated with all the ceremony and consideration due to their official position, and have been received into the highest society of foreign capitals, not only without demur, but with a warmth and hospitality which, whilst on the spot, they have themselves been the first to acknowledge.^[3] Under these circumstances, with a civil administration so effete and corrupt, a military Power so unpractical, a style of warfare so barbarous, and a Government so wanting in the honest desire to conciliate, can it be thought politic to go out of our way in order to further its pretensions, and that to the prejudice of a Power which, with all its faults, is progressive in its tendencies, and prepared to acknowledge our international rights, and which more nearly approaches us in recognising the duty of consulting the material interests of the people subjected to its sway? The little experience at any rate which we have had of the results of co-operation with the Chinese Government has not been such as to encourage us in a repetition of the experiment. Take, for example, the important aid given by England in clearing the province of Kiangsu of rebels in 1862-63, and thereby bringing about the eventual extermination of the Taepings. Such a service, it might be presumed, would have earned the lasting gratitude of the nation, and induced a cordiality of sentiment towards their benefactors which would have exhibited itself in an endeavour on the part of the Chinese Government to relax the restrictions and remove the vexations by which mutual relations had up to that time been beset. But nothing of the kind transpired. No special and national recognition of the service rendered was ever accorded; and, so far from any improvement being observable, as a consequence, in British relations with China, these were marked in the sequel by some of the most trying and difficult crises with which we have had to deal. More than this, the very moment of triumph was disgraced by an act of treachery in the deliberate murder of the surrendered rebel chiefs at Soochow, which must have induced in the mind of Colonel Gordon, R.E., the keenest regret that he had ever embarked his honour and expended his labours in the cause of such allies. The only other instance in which British influence was brought to bear towards rescuing the Chinese Government from an awkward dilemma was when the Japanese threatened reprisals for outrages committed against their subjects, and went the length of sending a considerable force to occupy the island of Formosa. Hostilities had commenced, and the war might have proved a protracted if not hazardous one for the Chinese, had not H.B.M.'s Minister volunteered his services as mediator, and succeeded in arranging matters to the satisfaction of both parties, and with as little loss of prestige to the Chinese as they had any right to expect. Here, again, if any gratitude was felt, there was no public recognition of the service rendered, and the obligation certainly left no appreciable trace upon the subsequent policy of the Government; for, in the very next difficulty with China which occurred not long after—namely, the official murder of Margary—it needed the pressure of our demands to the very verge of war, in order to procure the vaguest attempt at redress, and then we had to rest contented with commercial concessions as a makeweight for the substantial justice which could not, or would not, be granted.

[Pg 9]

[Pg 10]

[Pg 11]

To conclude, China, nationally considered, is in a state of decline. The very efforts which the

more enlightened amongst her statesmen are now making towards rescuing her from the collapse which threatens show how desperate they consider her case, and how anxious they are to prevent or even delay the catastrophe. Her history, it is true, shows that although she has passed through a series of such periodical lapses, she has ever exhibited a wonderful power of recuperation more or less effective in its nature and extent. But these changes have been experienced at times when she was comparatively isolated from the rest of the world. Her political crises were never before complicated by the interposition of a foreign element, such as must be the case in any revolution through which she may hereafter pass. Mr. Robert Hart, the Inspector-General of Customs, Joseph-like, has done China good service in reorganizing the maritime revenue department, and advocating reform generally in the policy and practice of the State; and did China know her own interest she would largely develop and extend the advantages of a foreign admixture in her whole system of executive. But Mr. Hart's efforts must have a limited result at best, and they can only serve to put off the evil day. He cannot reform the nature of the Chinese mandarin; and until there is a radical change in this respect there can be little hope of reconstruction and progress under purely native guidance. The process becomes the more embarrassing and futile with aggressive foreign Powers pressing on all sides with their irresistible influence and exacting pretensions. China must in time, and as at present constituted, yield to one or the other, and Russia promises to be the one whose ambition and interests will probably lead her to turn the opportunity to advantage. It may not be the best fate that can befall any part of China to be Russianized, but it will be a better alternative for her people to be subjected to the sway of a civilized and civilizing Power than to become the prey to interminable civil wars. It will be better, moreover, for England and other nations, whose interest in the question is mainly commercial, that China's millions should be brought under a vigorous and progressive Government, able and willing to develop the vast trade resources at their disposal, than that they should decimate themselves and ruin their country by perpetual internecine strife. Whether it will be to the interest of England in a political point of view that Russia should attain the commanding position which the possession of any part of China would undoubtedly secure her, is an entirely different question. If it be a danger, it is a danger which she must look in the face, for everything seems to point to the possibility of such a consummation. But no consideration of political expediency or self-preservation can certainly warrant her in interfering as yet; and it is to be hoped that the time may never come when she shall be called upon to thwart the ambitious designs of her great rival in Asian dominion in the extreme East, as she has so long and so successfully endeavoured to do in countries more directly affecting her political power and prestige in Europe and India.

[Pg 12]

WALTER H. MEDHURST.

[Pg 13]

ANIMALS AND PLANTS.

In the first of the present series of Essays it was pointed out^[4] that the number of kinds of living creatures is so prodigious that it would be a hopeless task for any man to attempt to grasp the leading facts of their natural history, save with the help of a well-arranged system of classification. Such a system enables the student to consider the subjects of his study collectively in masses—masses arranged in a series of groups, which are successively smaller and more and more subordinate. By "subordinate groups" are meant groups which are successively contained one within the other. As an example of such subordinate grouping we may take the group of familiar objects denoted by the word "money." This group contains within it the large subordinate groups, "paper money" and "metallic money;" the latter group again contains the more subordinate and smaller groups, "gold money," "silver money," and "copper money," and these respectively contain still more subordinate and smaller groups. Thus, the group "silver money" contains the subordinate groups—(1) crowns, (2) half-crowns, (3) florins, (4) shillings, (5) sixpences, &c.; and any one of these (*e.g.*, shillings) is further divisible into groups of "shillings" of the coinage of different reigns.

Reversing the process we may, as another illustration, select the group of articles of furniture called "chairs," which (with other *co-ordinate* groups, such as "tables" and "sofas") is contained within, and is subordinate to, the larger group of objects, "wooden furniture." This latter and larger group is again classifiable (together with its *co-ordinate* group, "metal furniture") in the yet higher and larger group of "furniture made of hard material," to which the wooden and metal groups are both subordinate. *Co-ordinate* with the group of "hard material" we have another group (carpets, curtains, &c.) of "furniture of soft material," and these two groups are again subordinate to the largest group of all "furniture."

[Pg 14]

It was also pointed out in the introductory Essay^[5] that there are two kinds of classification, one artificial, the other natural—the latter (the kind aimed at in this Essay) being such a system of classification as leads to the association together in groups, of creatures which are *really* alike and which will be found to present a greater and greater number of common characters the more thoroughly they are examined.

The system of classification which zoologists and botanists adopt is a system founded upon the form, structure, number, and relations of the parts of which each living being consists. It is, therefore, a morphological system, and rests rather upon the appearances of parts and organs than upon the offices which such parts and organs fulfil. It rests, that is to say upon their forms,

not upon their functions.

The mode in which animals have been arranged in zoological grouping affords an exceptionally good model for classification generally, as has been noted by the late John Stuart Mill.^[6] In fact, the number of subordinate groups is very great in zoology. Thus, the kingdom of animals is subdivided into a certain number of very large groups, called *sub-kingdoms*. Each sub-kingdom is again divided into subordinate groups termed *classes*. Each class is again divided into still more subordinate groups called *orders*. Each order is again divisible into *families*; each family into *genera*, and each genus into *species*, while a zoological "species" may be provisionally defined as "a group of animals which differ only by inconstant or sexual characters."

It could be wished that the reader should pursue his further inquiries into the natural history of animals and plants, with a knowledge of biological classification already acquired. But this is, unfortunately, impossible, since biological classification reposes upon anatomical facts, and cannot, therefore, be really understood until the main facts of anatomy have been already mastered. Yet something in the way of a classification, or at least of a definitely arranged catalogue, must be even now attempted for the following reason:—

In the second of this series of Essays^[7] we indicated the lines of inquiry which must be followed up by any reader who would become acquainted with the natural history of animals and plants. We saw that their gross and minute structure, their very varied functions, their relations to past time, and their geographical relations as well as their relations to the physical forces and to their fellow organisms, would all have to be successively considered. Obviously, however, it is impossible to make known the facts of anatomy, physiology, and hexicology^[8] without constant references to animals and plants which may be expected to be either altogether unknown, or at least very incompletely known, to persons as yet unacquainted with zoological and botanical science.

[Pg 15]

References to creatures so unknown or so little known would plainly be of small profit and less interest, unless the reader was already furnished with some mental images of such creatures and groups of creatures—images calculated to sustain his attention and excite his interest in the various kinds of animals and plants, otherwise unknown, which will have to be again and again referred to. Accordingly, an attempt must now be made to set before the reader a rough and general sketch, or catalogue, of what the creatures and groups of creatures are, the names of which will have so frequently to appear in the pages which are to follow. In a word, as the preceding Essay^[9] was devoted to explaining what are the special characters of living beings—*i.e.*, what the phrase "animals and plants" *connotes*; so the present Essay is intended to explain what that phrase *denotes*. It is not by any means intended at present to place before the reader a definitive and complete system of classification—that task must be reserved for the conclusion of the series, as it will be the expression of all the facts and inferences which will have been in the meantime brought forward.

For the purpose now in view it will be well, perhaps, to follow the suggestion of the great naturalist, Buffon, and begin with creatures which are amongst the best known and most familiar, and thence proceed to speak of less and less familiar forms.

In this Essay assertions will be freely made as to the natural affinities which the author believes to exist between the creatures to be enumerated, but no attempt will be made to give the reasons for such assertions. The justification of such affirmations will, it is believed, become apparent later, when the organization of living beings shall have been portrayed as far as the space and the ability at the command of the writer may enable him to portray them.

As before said the object now in view is to endeavour to present a general view of living beings—of animals and plants—in the hope of fixing in the reader's memory the names of species, and of groups of species, to which names reference will have to be more or less frequently hereinafter made. At the least, such a catalogue may serve for reference whenever the reader may come upon the names of animals or plants, or of groups of animals or plants, the meanings of which names may have escaped his recollection.

The animals most familiar to us, our domestic cattle and our dogs and cats, all belong to a group of animals technically termed *mammals*, from the circumstance that the females have milk-glands (or *mammæ*), by which they nourish their young. The name "beasts" may be set apart for the brute animals belonging to this group; but they do not altogether form it, since man himself—the most individually numerous of all the large animals—is, structurally considered, also a mammal.

[Pg 16]

For various reasons, which will appear later, the domestic cat (which is a member of the genus *Felis*) may serve as an instructive, as it is a familiar, example of a highly-organized mammal. Allied to the cat, and formed on so completely the same model as hardly to differ, save in size and colour, are the lions, tigers, leopards, jaguars, pumas, ocelots, lynxes, and wild-cats of different kinds. What are commonly called pole-cats are not really cats, but belong to a different "family;" while civet-cats are not cats in the strict sense of that term. Civet-cats pertain to a group of beasts called *Viverrines* (*Viverridæ*), to which all ichneumons and mongouses (which appear to have been the domestic cats of the ancient Romans) as well as the bone-eating hyænas also belong.

The viverrines and the cats, however, together form one great family to which the scientific name *Felidæ* has been assigned. The pole-cats, together with the ermine, ferret, weasel, marten, sable,

skunk, badger, the otter and the bear, raccoon, coati-mondi, with the kinkajoo, panda, &c., all belong to another family. Of this family the bears are the largest in size, and constitute a small group or "genus" called *Ursus*, whence the whole family bears the designation *Ursidæ*.

Our dogs (genus *Canis*) are, as every one knows, first cousins to jackals and wolves and near allies of the different species of fox, the whole forming a family—*Canidæ*.

The otter has been already referred to, and it may be thought that mention of the seals and sea-lions has been unintentionally omitted. But the seals and sea-lions, in spite of a certain slight resemblance to otters, due to similarity of habit, are not really near allies of the latter. They (*i.e.*, seals and sea-lions), together with the walrus, form, indeed, a very distinct family, which is termed *Phocidæ*, because its type, the common seal, belongs to a subordinate group, or "genus," named *Phoca*.

All these families, *Felidæ*, *Ursidæ*, *Canidæ*, and *Phocidæ* form together one greater group or "order," to which, of course, these four families are subordinate. This order is called "*Carnivora*," because it is made up of carnivorous or flesh-eating beasts.

The other familiar beasts first referred to—our domestic cattle of all kinds—form, together with all swine, horses and all asses, deer, antelopes and camels, another great order of beasts called *Ungulata*, because the nails of their feet are so large and solid as to form "hoofs." This order of hoofed-beasts, or ungulates, is a very large order, and is divided into two sub-orders, and in each sub-order are various families containing more or fewer genera.

The two sub-orders are characterized by the structure of the foot. The toes of the hind foot, which are made use of in progression, are even in number in one sub-order and are odd-numbered in the other sub-order.

[Pg 17]

The sub-order of odd-toed ungulates, or *Perissodactyla*, includes in our day only the horses, asses, zebras, and quaggas (united together in the family *Equidæ*); the tapirs, the rhinoceroses, and the little hyrax—the coney of Scripture. In ancient times, however, this sub-order was a very large one, but the great majority of the forms belonging to it, which formerly lived, have now become extinct.

The sub-order of even-toed ungulates, or *Artiodactyla*, comprises all oxen, sheep, goats, antelopes, giraffes, deer, chevrotains,^[10] llamas, and camels. All these, from their practice of "chewing the cud," are called "ruminants," and they are multitudinous in kinds. The great plains of Southern Africa are the special home of most kinds of antelope, and the giraffe is exclusively African. Deer have their head-quarters in Asia, though they exist in South America as well as throughout the Northern Hemisphere.

Besides the ruminating artiodactyles there is also an extensive group of non-ruminating artiodactyles, made up of all the various kinds of swine (including the American peccaries), together with the hippopotamus, now found nowhere but in Africa. Distinct as are the ruminating and non-ruminating artiodactyles now, they were in ancient time connected by a great number of intermediate forms which have utterly passed away.

The llamas of South America represent the camels of the Old World, where the latter are to-day exclusively found. When South America was discovered by the Spaniards, llamas were the only beasts of burthen found there, and, indeed, the only cattle of any kind then and there existing; although horses had formerly abounded and had become extinct in South America at a long anterior period.

Somewhat allied to ungulates, but distinct from them, are the elephants, which form an order (*Proboscidea*) by themselves—an order once rich in many species widely distributed over the earth.

Hardly less familiar than our domestic animals, are our hares, rabbits, mice, squirrels, and their allies, which together form an "order" called *Rodentia* from the gnawing habits of its members which nourish themselves on vegetable substances. This order of rodents is very rich in species, and consists of many genera grouped in several distinct families—such, *e.g.*, as the family of mice and rats (*Muridæ*), of squirrels (*Sciuridæ*), of guinea-pigs and spine-bearing porcupines (*Hystricidæ*), &c. The largest form of rodent is the capybara (or river-hog of the Rio de la Plata),—which is preyed on by the jaguar. Though a near ally of the little guinea-pig, it is as large as a hog. Amongst the more interesting rodents may be mentioned beavers,^[11] the fur-bearing chinchilla, the jerboa (*Dipus*), the musk-rat (*Fiber*), and the rat-mole (*Spalax*). The jerboa has very long hind legs, and a habit of jumping, so that it resembles superficially (but not really) a small kangaroo. The *Spalax* is quite blind, and has the burrowing habit, and somewhat the shape of the common mole. Some rodents are fitted to flit through the air in long jumps, by means of the wide extensibility of the skin of their flanks, which, when stretched out, acts as a parachute. Such forms are the flying squirrels, and a curious rodent called *Anomalurus*, from the exceptional clothing of the base of its tail, which is furnished with large scales at its under part.

[Pg 18]

Another order of beasts may here be referred to, because it affords interesting examples of the co-existence of external resemblance without any real affinity. This order includes the insect-eating beasts, or *Insectivora*, and comprises the moles, hedgehogs, shrew-mice (which are not really "mice" at all), and their allies. The *Insectivora* and *Rodentia* present us with a singular parallelism in the respective modifications of structure, which are found in these two very distinct orders. But the insectivorous forms (as might perhaps be expected from their less

abundant food) are always smaller in size than are the parallel vegetable-eating groups of rodents. Indeed, one insectivore of the genus *Sorex* (the shrew-mouse genus) is the absolutely smallest mammal which is known to exist.

As examples of the parallelism referred to may be mentioned the moles (which resemble the rat-moles), the shrew-mice (which resemble true mice), the hedgehogs, and the less known spiny tanrec of Madagascar (which resemble porcupines in their clothing); certain graceful and active tree-frequenting insectivores of the Indian Archipelago, *Tupaia* (which resemble squirrels); an aquatic African form, *Potomogale* (which resembles the musk-rat); certain elephant shrews—long-legged, jumping, African insectivores (which resemble the jerboa amongst rodents); and, lastly, the so-called flying lemur of the Philippine Islands, or *Galeopithecus*, which resembles the flying squirrel, and the curious rodent *Anomalurus* before referred to.

The only beasts, however, which *truly* fly are the bats, which form an order by themselves, well-named, from the structure of their wings, *Cheiroptera*. The bats which fly about in the twilight in this country, or sometimes in the afternoon of a warm day in winter, are all insect-eating forms. But in the warm regions of the Old World, and of Australia, there are large fruit-eating kinds, called "flying foxes;" while in South America there are blood-sucking bats, or vampires, some of which, as we shall hereafter see, present the most curious and interesting modifications of structure in harmony with their peculiar habits.

The creatures which are in some respects the most interesting to us, because they are the most like ourselves in form, are the apes. Moreover, not only are they so like us in form, but they are so widely marked-off from all other creatures except ourselves, that it seems impossible they can have any real affinity to one more than to another group of mammals below man. Apes and man then together form one order, which as ranking first was named by Linnæus, *Primates*. With the apes are commonly associated certain animals called Lemurs, which inhabit the vicinity of the Indian Ocean, especially Madagascar. They have not, however, any real affinity to apes; and if they are to be placed in the same order at all, they must be well distinguished from its other members. It has therefore been proposed^[12] to divide the order Primates into two sub-orders (as the hoofed order is divided into the "odd-toed" and "even-toed" sub-orders), one of these to include man and apes, and to be called, from the resemblance to the human form pervading it, "*Anthropoidea*;" the other sub-order to be termed "*Lemuroidea*."

[Pg 19]

The first "sub-order" is divisible into three "families." One of these (*Hominidæ*) contains man (forming the genus *Homo*), the second (*Simiadæ*) contains all the apes of the Old World only, while a third (*Cebidæ*) contains all those of America.

Amongst the *Simiadæ* are the orang, the chimpanzee, the gorilla, and the long-armed apes (or Gibbons), which are the most man-like of all the apes; and there can be no question but that there is very much less difference in structure between these four kinds of apes and man, than there is between them and the lowest of the apes—*i.e.*, the marmosets.

Concerning this resemblance, Buffon has observed, when speaking of the ape, the most man-like (and so man-like) as to brain:^[13] "Il ne pense pas: y a-t-il une preuve plus évidente que la matière seule, quoique parfaitement organisée, ne peut produire ni la pensée, ni la parole qui en est le signe, à moins qu'elle ne soit animée par un principe supérieur?"

As to the second sub-order, it contains some very curious forms. The typical lemurs (which inhabit Madagascar) have long fox-like snouts and long tails. Certain African forms (the genus *Galago*) are very active in their movements, and great leapers. A tailless group (the slender loris) is interesting, as presenting a diminutive quasi-human form, reflected, as it were, through a Lemurine prism, just as the rat-mole shows us a mole-form reflected through a rodent prism.

A little animal, the Tarsier, which is found on the islands of Celebes and Borneo, is very exceptional in its structure. Still more so is the aye-aye (*Cheiromys*). This very remarkable species was discovered by Sonnerat in Madagascar in 1770, and was never again seen till 1844, when a specimen was forwarded to Paris. It has now, however, become well known.

Inhabiting the sea are many beasts, which are, by mistake, popularly spoken of as "fishes." Such are the whales and the porpoises—animals which, in spite of their form and habit, suckle their young, and have hot blood, as all other mammals have. These creatures form an order by themselves, called *Cetacea*.

Another order of aquatic beasts is termed *Sirenia*, and the animals which compose it were long confounded with the *Cetacea*, from which, however, they are widely divergent in structure, in spite of the general similarity which exists between them in external appearance. The order *Sirenia* contains but two existing genera. One of these is the now well-known manatee (*Manatus*), the other is the dugong (*Halicore*)—an animal very similar to the manatee, and found in the rivers of regions about the Indian Ocean. A third form, the *Rhytina*, existed in the Aleutian Isles till recent times, but was extirpated almost as soon as discovered, from its incapacity for flight or defence, and from its flesh affording a welcome change of diet to hungry sailors.

[Pg 20]

The *Cetacea* and *Sirenia* are examples of creatures organized for a completely aquatic life—for never coming to land.

The forest-regions of South America offer to animal life so enormous a mass of foliage that it may not unjustly be termed a sea of verdure, and creatures there exist which are specially organized for a completely arboreal life—for never coming to the ground. Such creatures are the sloths,

which pass their lives hanging back-downwards, suspended to the branches by their huge claws. Thus, they sleep without effort (from the peculiar mechanism of their limbs), and they move slowly from tree to tree, having no need to hurry after food, since they live suspended in the midst of a perennial banquet.

Nearly allied to the sloths were certain huge beasts, now extinct, which formerly inhabited the same Continent—such as the *Megatherium* and *Myiodon*, which rivalled or exceeded our largest rhinoceroses in bulk. They fed on the same food which nourishes the sloth, but obviously the branches of no tree could sustain such monsters. They obtained their leafy pasture, therefore, by a different method. Rearing themselves on their massive hind legs and powerful tail, as on a tripod, they embraced the trees with their vigorous arms, and swayed them to and fro, till the tree embraced was prostrated, and literally fell a prey to their efforts. These bulky creatures were protected against that danger which such a mode of life rendered imminent by a specially strong skull structure, which enabled them to bear a broken head with but little inconvenience.

In the same region of the earth are found the ant-eaters and armadillos, and more or less allied to them are the pangolins (*Manis*) of Africa and Asia. The horny scales which cover the bodies of the last-named animals caused them for some time to be associated with reptiles rather than with beasts, though they are true and perfect mammals. Lastly must be mentioned the aard-vark (*Orycteropus*) of South Africa.

All these creatures, from the sloths to the aard-vark, are commonly associated together in an order which is termed *Edentata*.

The whole of the orders of mammals yet mentioned agree in certain important details with respect to their reproductive processes, as well as in certain smaller anatomical peculiarities, and the whole of the creatures included within these orders are (and will be) often spoken of as *Placental Mammals*.

[Pg 21]

The only beasts which it yet remains to speak of are grouped in two other orders.

The first of these is called the order *Marsupialia*, and comprises all opossums (*Didelphys*), kangaroos (*Macropus*), phalangiers (*Phalangista*), the Tasmanian wolf (*Thylacinus*), the dasyures (*Dasyurus*), the bandicoots (*Perameles*), and their allies. With the exception of the true opossums (*Didelphys*), all the members of the order are found in Australia or its vicinity, and nowhere else in the present day; although, as we shall better see hereafter, Europe once possessed animals closely allied to Australian forms of to-day—notably to a pretty little quadruped which bears the generic name *Myrmecobius*.

As last of the class of beasts, we have two extremely exceptional mammals (both found only in the Australian region), the duck-billed platypus (*Ornithorhynchus*), and the *Echidna*. The first of these, as its name implies, has a muzzle quite like the bill of a duck, with a squat, hairy body, and short limbs. The echidna is covered with strong, dense spines, and has a long and slender snout. These creatures together form the order *Monotremata*—an order which differs very much more from any other Mammalian order than any of the other orders of mammals differ one from another.

Thus, that great group which embraces man and beasts, and which group ranks as a "class"—the *class* Mammalia—comprises (as we have now seen) a number of subordinate groups termed "orders," the orders being made up of families, and these again of genera.

It would be impossible as yet (when hardly any anatomical facts have been even referred to) to give the characters of the class *Mammalia*. It must at present suffice to point out that, in addition to mammary glands, the creatures have hot blood, and the body bears more or less hair—at least at some time of life.

We may now pass to the next class, that of birds—the class *Aves*. In spite of the great multitude of kinds which ornithologists enumerate—upwards of ten thousand species—there is very much less diversity of form amongst birds than there is amongst beasts.

Starting in the present class as in the preceding one from the most familiar kinds, we may begin with the domestic fowl. This is one of an "order" to which belong the peacock, all pheasants and tragopans (three forms which have their home in Central and Southern Asia), also the Guinea fowls (African forms), and the turkeys and curassows, which are American representatives of the order. Besides these may be mentioned partridges, grouse, black-cock, the capercalzie and quails, and, lastly, the megapodius or bush-turkey of Australia. This last is the only bird which hatches its eggs by artificial heat, depositing them in a mound of earth and decaying vegetable matter, wherein they are hatched fully-fledged, so that they can fly away immediately on leaving the egg. All the birds yet mentioned are called gallinaceous birds, or *Gallinæ*, and sometimes *Rasores* or "Scratchers."

[Pg 22]

More or less allied to them are the doves and pigeons, which form the order *Columbæ*, in which the curious ground-pigeon *Didunculus* is included—a form which presents an interesting resemblance to the celebrated and extinct dodo of Mauritius, long known only by certain pictures, and a foot and head preserved, one in the British Museum, and the other in the Ashmolean Museum of Oxford.

Our sparrows, robins, and all our song birds are members of an exceedingly numerous "order" "*Paseres*." In it are included the crows (with those gaily-decorated crows, the Birds of Paradise,

found only in New Guinea and the Moluccas), the bower birds and the lyre bird of Australia; the flycatchers, the pittas (or ground thrushes), the water-ouzel, the weaver birds, the wrens, the tits, the creepers, the honey-eaters, those African gems, the sun birds, and also the swallows.

To another order—the order *Macrochires*—belong those most beautiful of all birds, the humming birds, found only in America, and long thought to be allied with the really very different sun birds just mentioned. With these may be associated the swifts (which have such marvellous powers of flight) and the wide-gaped goat-suckers or nightjars.

Woodpeckers are considered to form an order (*Pici*) by themselves, while the cuckoos are thought to be near relations of the beautiful and eccentric toncans, the plaitain-eaters, the touracous, the kingfishers, the hoopoes, the bee-eaters, the hornbills, and the trogons, all, from the cuckoos to the trogons, being included in the order *Coccyges*.

The parrots form an isolated group of birds—the order *Psittaci*. Their most peculiar forms are the macaws on the one hand, and the brush-tailed loris on the other. The order *Accipitres* includes all the birds of prey—that is to say, the eagles, falcons, hawks, buzzards, vultures, and owls. In this order is included the long-legged secretary bird, which looks like a cross between a hawk and heron.

Pelicans, gannets, cormorants (or shags), and darters go together to constitute the order called *Steganopodes*. The flamingoes are isolated, and by themselves form the order *Odontoglossæ*. The same is the case with the penguins, which have the order *Impennes* assigned exclusively to them.

The ducks and geese form alone the order *Lamellirostres*, in which is included the curious bird *Palamedea*, which is a goose adapted to live in trees in harmony with its South American forest habitat.

The rails and coots go with the bustards and cranes to constitute the order *Alectorides*. Similarly the auks, divers, puffins, terns, and grebes, noddies, and guillemots may be associated together in one order—the order *Pygopodes*. The gulls and petrels form another association—the order *Gaviæ*; while the plovers, snipes, curlews, peewits, turnstones, &c., constitute the order *Limicolæ*. The order *Heridiones* includes the herons, the bitterns, the storks, spoonbill, ibis, &c.

All the foregoing birds have a multitude of points in common; indeed, so close is the similarity of their structure that their subdivision into orders is a matter of much difficulty and dispute. They are collectively spoken of as the *Carinatæ*, from the keeled form of their breast-bone.

[Pg 23]

Widely apart from them stands another group made up almost entirely of large birds, which agree not only in having no power of flight, but also in certain significant structural characters, amongst which may be mentioned the absence of a keel on the breast-bone.

This latter group is sometimes spoken of as the order *Struthiones* from the ostrich (*Struthio*), which is its typical form. Sometimes these keelless birds are called *Ratitæ*. Besides the ostrich, the rhea, cassowary, and emeu are included within the group; also the small and nocturnal *Apteryx* of New Zealand and those giants of featherdom, the huge species of dinornis, all also of New Zealand and all now extinct.

With this our list of birds might close, but for a bird which anciently existed in Europe so strangely different from all modern kinds, that it must certainly be here adverted to. This bird is the *Archeopteryx*, found in fossil in the Solenhofen States.

The class Aves, like the class Mammalia, consists of animals with hot blood, but all birds have feathers and a number of other peculiarities of structure, as will appear later.

The next class to be adverted to is the class which includes all reptiles properly so-called—the class *Reptilia*.

The reptiles which exist in the world to-day may be classed in four well-marked sets, each of which has the value of an "order"—(1) crocodiles, (2) lizards, (3) serpents, and (4) tortoises. The names of these creatures alone suffice to indicate the fact that the class of reptiles presents us with an extraordinary amount of diversity of form as compared with the class of birds with which, nevertheless, reptiles have, as we shall hereafter see, very close relations. Indeed, in the diversity of kinds which it contains, the class *Reptilia* at the least fully equals the class Mammalia, especially if the extinct kinds are taken into consideration. The number of species of reptiles, both living and extinct, much exceeds also the number of living and extinct mammals.

To begin once more with forms which are the least strange and unknown, we may start with the little elegant and harmless lizards of our heaths and commons, which will serve as types of the order to which they belong—the order *Lacertilia*. That order is an extremely numerous one, containing many families, differing much in form. Our English lizards are true lizards, belonging to the typical genus *Lacerta* and to the typical family *Lacertidæ*. The rather well-known large American lizard, *Iguana*, is the type of another and very extensive family (almost entirely confined to America), while a nearly-allied family (*Agamidæ*) is an Old World group. Amongst the curious forms found in the latter family may be mentioned the frilled and moloch lizards of Australia, and those little harmless lizards of India which go by the formidable name of "flying dragons" (*Draco*). They are the only existing aerial reptiles—not that they can truly "fly" at all, but they are enabled to take prolonged jumps, and to sustain themselves to a considerable extent in the air by means of the extremely distensible skin of their flanks which, when extended, is supported by a peculiar solid framework hereafter to be described. Some of the largest lizards

[Pg 24]

are called "monitors," and are common in Egypt; they belong to the family *Monitoridæ*.

In the warmest period of the year, certain lizards are found in the South of Europe, called geckos. They have a power of running, not only up walls, but across ceilings by means of a peculiar structure of their toes. They are types of a large family (*Geckotidæ*) widely spread over the world.

Another large family (*Scincidæ*) has also its type in the South of Europe in the skink (*Scincus*), which was formerly supposed to possess much medicinal value. This large family contains a number of species which exhibit a series of gradations in structure leading to forms which have the external aspect of serpents. One such form is the perfectly harmless slow-worm, or blind-worm, of our own country, which in spite of its scientific name, *Anguis fragilis*^[14], is a legless lizard, and no snake.

Other lizards of a very different kind forming the family *Amphisbæidæ* are also legless, with the single exception of the genus *Chirottes*, which has a pair of anterior limbs, but no posterior ones. The name of this family is derived from the similarity of appearance presented by both ends of the body, so that either end looks as if ready to take the lead as "head."

A family of lizards familiar by name to us all from our childhood is the family of chameleons (*Chameleonidæ*). There are many species of chameleons, but they are found in the Old World only; they are among the most exceptional and peculiar of all lizards, but there is one form which is yet more so.

This most exceptional of lizards is one found in New Zealand, and named *Sphenodon*. Its external aspect would not lead the ordinary observer at all to suspect that it is so remarkable a creature as its anatomy shows it really to be.

The order *Crocodylia* contains, of course, the true crocodiles which are found both in the Old and New Worlds. It contains besides the alligators (which are peculiar to America), as well as the long and slender-snouted gavials which are now found only in India and Australia. At one time the number of kinds of this order was very much greater than at present, and interesting structural modifications have taken place in it during the course of ages, as will be pointed out later.

On the whole, the order of crocodiles makes a much nearer approach to mammals and birds—especially (strange as it may seem) to birds, than is made by any other group of existing reptiles.

Reptiles, however, once existed have left their remains fossilized (in the rocks of what is termed the "secondary" or "mesozoic" period), which reptiles in the structure of their skeleton approach much more closely to birds, and especially to birds of the ostrich order, than crocodiles do. Amongst these reptiles may be mentioned the huge Iguanodon (type of the, extinct order *Dinosauria*), which once roamed over the Weald of Kent, and has left its remains in the Isle of Wight and elsewhere. Such remains were collected by its discoverer, the late Dr. Mantell, and are now preserved in our British Museum.

[Pg 25]

The crocodylia and some of the lizards of our own day are aquatic, but none live constantly in the ocean, as do the cetacea amongst beasts. This was, however, by no means always the case. In the secondary period just adverted to, huge marine reptiles (*Ichthyosauria* and *Plesiosauria*) lorded it over the other then inhabitants of the deep, and presented some noteworthy resemblances to the whales and porpoises which have since succeeded them.

But other remains preserved in those same secondary rocks show us that in that period which has been so deservedly called "the age of reptiles," not only did many huge species of the class stalk over the land (either browsing on its foliage or preying on their fellows), and many others swarm in the then existing waters, but it shows us that the atmosphere also had its reptilian tenants. Flying reptiles which formed the now extinct order, *Pterosauria*, and which were some of small, some of very large size, as truly "flew" as do the bats of our own day fly, and by a very similar mechanism. Moreover, if the *Dinosauria* present, as they do present, very noteworthy and interesting resemblances to birds of the ostrich order, no less noteworthy and interesting are the resemblances presented by these flying reptiles to ordinary—*i.e.*, to "carinate"—birds.

The orders of extinct reptiles just referred to are not the only ones which formerly existed and have now passed away. There were reptiles with peculiarities in their teeth such as to have caused their order to be named *Amnodontia*, and it is members of this extinct order that the lizard *Sphenodon* more or less resembles, and it is this resemblance which gives it that special interest before noted.

We may now return from these very various extinct forms to enumerate other kinds of reptiles which exist to-day. But before doing so the fact may be adverted to, that though amongst beasts many forms have become extinct, yet the proportion borne by the known extinct forms to the living kinds is much less than amongst reptiles, and that while it is the most highly-organized reptiles which have ceased to exist, the highest mammals which are in any way known to us are those which at present inhabit the earth's surface.

In passing from the orders of crocodiles and lizards to that of serpents—*i.e.*, to the order *Ophidia*—we might select as first to be mentioned kinds which much resemble the legless lizards; but such kinds are not familiar ones in Europe.

[Pg 26]

The only serpents met with in England are but of three species—two harmless snakes and the common viper, which latter is the only really poisonous reptile in this country.

Of the harmless snakes, the ringed or collared snake (*Tropidonotus*) is much the commoner and more widely diffused. It ought to escape destruction on account of the ease with which it may be discriminated from the viper by means of the white collar-like mark which appears so conspicuously just behind its head.

Our viper is the type of a large and poisonous family, but by no means all poisonous snakes are vipers. The deadly cobras belong to a different group, having much more affinity with our own harmless snakes than with the vipers. The rattle-snakes again form a family (*Crotalidæ*) by themselves.

There are such things as true sea-serpents, and they are poisonous. They are not, however, allies of any "sea serpent," such as every now and again figures in startling paragraphs in our journals. The true sea-serpents are snakes of small or moderate size, which have their tails flattened from side to side, and which inhabit the Indian Ocean. Of other serpents which are not poisonous, the family of boas and pythons (which kill by crushing) is tolerably familiar to all who have visited zoological collections. There are many beautiful and harmless snakes, such as the families of tree-snakes and whip-snakes, but the snakes which more or less resemble legless lizards are burrowing forms which have the habits and more or less the appearance of earth-worms, such as those which form the families of *Uropeltidæ* and *Typhlopsidæ*.

The last existing reptilian order (*Chelonia*) includes, besides the land tortoises of very various dimensions, a variety of aquatic forms.

The best known of these in this country, is the marine family (*Chelonidæ*), to which the edible and tortoise-shell turtles belong. The best known family in the United States and in the Continent of Europe, is the *Emydæ*, to which pertain the terrapins or ordinary river tortoises. Besides these, however, there is a very small family (*Trioncidæ*) of curious and exceptional forms, called mud-tortoises (*Trionyx*).

The creatures which have next to be glanced at are those familiar forms, the frogs, toads and efts, which, together with their allies, form another class,—the class *Batrachia*. These animals were long confounded with reptiles but are really widely distinct from them. They are arranged in four orders, three of which have living representatives. The creatures of the first order (the order of tailless Batrachians or *Anoura*)—frogs and toads—exist over almost all the habitable globe; and though the number of their kinds is very great, yet they are all extremely alike in organization. Many kinds (of both frogs and toads) are found to live in trees, the ends of their fingers and toes being dilated to enable them to cling to the surfaces of leaves. The most exceptional species of the whole group are the two tongueless toads, the *Pipa* of South America and the *Daclytethra* of Africa, the last-named kind being the lowest of all known animals provided with finger nails.

[Pg 27]

Closely related to the frogs and toads are the efts so common in our ponds. These familiar English forms are represented in other countries of the Northern Hemisphere by creatures, some of which (as we shall hereafter see) are of very great interest indeed. The whole group constitutes the second Batrachian order—the order *Urodela*.

One of the most noteworthy forms of the order is the eft *Proteus*, which inhabits the dark, subterranean caverns of Carniola and Istria. Allied to this is the *Menobranthus* of North America and the Axolotl of Mexico. Other forms of the order are the American eft-genera *Speleerpes* and *Amblystoma*, the *Menopoma*, and the gigantic Salamander (*Cryptobranchus*) of Japan and China, the eel-like *Amphiuma*—with its very long body and minute legs—and the two-legged *Siren* of the United States.

The third order of Batrachians is one which contains very few species, but these are very strange, for though allied to frogs they have the appearance of snakes, or rather perhaps of worms. With long and slender bodies (marked by many transverse wrinkles), devoid of every rudiment of limb, they remind us of the before-noticed *Anguis*, *Typhlops*, and *Uropeltis* amongst reptiles. The Batrachians in question (which belong to the genera *Cæcilia* and *Siphonops*) form the order *Ophiomorpha*.

The fourth order of Batrachians is one which has entirely passed away and become extinct. It is the order *Labyrinthodonta*, and the species which composed it were, some of them, of large size, with great heads like those of crocodiles. Others bore more or less resemblance to enlarged *Ophiomorpha*.

Every one knows that frogs begin their existence in the water as tadpoles, which have the habits and mode of life of fishes. Thus, the class *Batrachia* naturally conducts us to the class *Pisces*, the class of true fishes. This class contains a prodigious variety of forms, and is far more rich in species than any other of the classes before enumerated—even that of birds.

The fishes most familiar to us—such as the perch, carp, mackerel, cod, herring, sole, turbot, salmon, pike, dory, and eel—all belong to one great order called *Teleostei*, and which is made up of what are called "bony" fishes, though there are some bony fishes which do not belong to it. To the same order also belong the Muræna, the electric eel (*Gymnotus*), the flying fishes (*Exocetus* and *Dactyloptera*), the sucking fish (*Remora*), the pipe-fish and sea-horse (*Hippocampus*), the diodon, the ostracion, the file-fish (*Balistes*), the largest of all fresh-water fishes (*Sudis gigas* of South America), with a multitude of other forms.

Certain more or less singular Teleosteans are classed together in a subordinate group of

"Siluroids" (of which fish the *Silurus* is a type), and which group includes, amongst others, the singular, cuirassed fish *Callichthys*.

[Pg 28]

A group of fishes, which is now very small, but which at an earlier period of the world's history was very large, includes within it all those fishes which will be hereinafter occasionally spoken of as "Ganoids," as they compose the order *Ganoidei*. Of all the forms of this order, the sturgeon is that which is least unfamiliar to us. The Ganoids are mostly fresh-water fishes and consist of the spoonbill-fish (*Polyodon*), the bony-pike (*Lepidosteus*), the African *Polypterus*, the mud fish (*Lepidosiren*), and the curious Australian fish *Ceratodus*, which last is a singular instance of piscine survival.

Another order, *Elosmobranchii*, is made up of the sharks, together with the skates (or rays) and the curious *Chimæra*. Amongst the skates may be mentioned the celebrated torpedo or electric ray.

The three groups above enumerated contain almost all known fishes, but a few other kinds, all of lowly organization, constitute two other groups of very different structure.

One of these groups is called *Marsipo-branchii*, and contains the lamprey, the *Myxine* (or Glutinous Hag), and the *Bdellestoma*. They are fishes of parasitic habits and of relatively inferior structure.

Last of all comes a creature of such exceptional build, so widely different from, and so greatly inferior to, any kind of animal yet noticed, that it may but doubtfully be reckoned as a fish at all. The animal referred to is the lancelet (*Amphioxus*), which is a small, almost worm-like animal, living in the sand on our own coasts, and also widely distributed over other parts of the world. The *Amphioxus* has no distinct head or heart, and its breathing apparatus—its gill structure—differs so much from that of all other fishes as to give a name to its "order" (which contains it alone)—the order *Pharyngobranchii*.

We have now, then, hastily surveyed no less than five "classes" of animals—(1) Mammalia, (2) Aves, (3) Reptilia, (4) Batrachia, and (5) Pisces.

But, as was said in the first beginning of this Essay,^[15] "classes" are the groups into which "sub-kingdoms" are divided, and which, by their union, make up such "sub-kingdoms."

The five classes above-mentioned together constitute the highest of those sub-kingdoms into which the whole animal kingdom itself is divided. This highest sub-kingdom is named VERTEBRATA, and is called the vertebrate sub-kingdom, because every creature which belongs to it possesses a "spinal column," which is generally built up of bones, each of which is called a "Vertebra."

We ourselves are members of the genus *Homo*, of the family *Hominidæ*, of the order *Primates*, of the class *Mammalia*, of the sub-kingdom *Vertebrata*, and it is desirable to treat this sub-kingdom at considerable length, both because it is, to us who are members of it, the most interesting and important, and because, by treating it somewhat fully, a good example can be once for all given of biological classification.

[Pg 29]

But the number of animal kinds which belong to other sub-kingdoms vastly exceeds the total number of vertebrate animals, and the structural contrasts found between different non-vertebrate species is very much greater than any such contrasts as can be found to exist between any two members of the highest, or vertebrate sub-kingdom. This is only what we might expect; for non-vertebrate animals—often spoken of collectively as "*Invertebrata*"—form several distinct sub-kingdoms, each of which has a rank approximatively co-ordinate with that sub-kingdom to which we ourselves belong. Nevertheless, since the members of the invertebrata sub-kingdoms are, speaking generally, much less known and familiar than are vertebrate animals, and as the structural differences between them cannot be pointed out till an initial acquaintance has been made with comparative anatomy, for these reasons we may treat the various animal sub-kingdoms which have yet to be noticed at much less length than we have treated the vertebrata. The details of their peculiarities and the various degrees of significance and interest which they present will begin to appear when we proceed to treat of "The Forms of Animals."

The last class of vertebrates is, as we have seen, constituted by the fishes, which are fishes properly so called. But there are many animals which are familiarly and improperly spoken of as "Fishes," but which are even more below true fishes than whales and porpoises are above them. Thus, we hear of cuttle-fishes, and a variety of creatures are spoken of as "shell-fish," which are not in the least related to true fishes. Indeed, the many so-called "shell-fish" are not even nearly related one to another. Thus, the oyster and the lobster are both commonly thus named, but they belong respectively to two altogether distinct sub-kingdoms of the world of animals.

The oyster is an animal which belongs to a vast assemblage of species, with much variety of form and structure, which, on account of their soft bodies (whether or not enclosed in shells), are called MOLLUSCA or "Mollusks." This assemblage ranks as a sub-kingdom and contains within it at least four subordinate great groups, or "classes." All snails and whelks, with their allies, and also all cuttle-fishes, belong to the sub-kingdom of "soft animals."

Amongst the most familiar of mollusks is the common snail, which may serve as a type of the "class" of mollusks to which it belongs—the class *Gasteropoda*. The snail, with the slug, are representatives of land-forms of mollusca, but the bulk of the class and of the whole sub-kingdom

are aquatic animals, such as the whelk (*Buccinum*), periwinkle (*Littorina*), limpet (*Patella*), &c. The Gasteropods generally possess spirally coiled shells (like the cowry or whelk), but some kinds have their shells in the form of simple cones—like a Chinaman's cap—as, *e.g.*, the limpet. There are a few Gasteropods in which the shell consists of a series of similar segments as is the case with *Chiton*, while many are altogether naked. In some kinds the soft body is drawn out into a number of tufted processes, as in *Doris* and *Eolis*, and sometimes the body is almost worm-like, as in *Phylliroë*, or provided with a pair of ring-like lateral processes and a rudimentary shell, as in the sea-hare *Aplysia*.

[Pg 30]

Next above the Gasteropods comes a group of animals forming the class *Pteropoda*. These pteropods are small, active, oceanic, surface-swimming creatures, many of which live in delicate glass-like shells, and some of which form a large part of the food of the whalebone whale. They flit through the water by the aid of lateral processes which much resemble those before-mentioned as existing in the sea-hare. Allied to these pteropods is a curious little animal, the shell of which resembles a miniature elephant's tooth and which is named *Dentalium*.

Highest of all the mollusca stand the cuttle-fishes, forming (with the *Nautilus* and many extinct animals, such as ammonites and their allies) the great class *Cephalopoda*. The Cephalopoda, such as the cuttle-fish (*Sepia*) and the Poulp (*Octopus*), have now become familiar objects through our aquaria, where their very eccentric forms and remarkable movements naturally attract attention. To this group also belongs *Spirula*, the coiled and chambered shell of which is found so abundantly, but its soft tenant so very rarely. To it also belongs the extinct Belemnite, which was provided with a dense, conical internal shell, specimens of which found in rocks were at one time taken for thunderbolts. Of a lower grade of organization is the *Nautilus*, sole existing representative of a great group of Cephalopoda (including the ammonites and other forms) which has, with the above exception, long become entirely extinct.

The oyster is an animal which belongs to a much lower class of mollusca—namely, to the class called *Lamellibranchiata*, from the plate-like (or lamellar) structure of the gill. To that class also belongs the scallop (*Pecten*), the mussel (*Magilus*), the fresh-water mussel (*Anodon*), the razor-shell (*Solen*), the cockle (*Cardium*), species with a long fleshy tube such as *Mya*, stone-perforating shells such as *Pholas*, and the well-known wood-boring "ship-worm" (*Teredo*)—which is no "worm" at all—with a multitude of other forms.

Certain other animals (which, like the Lamellibranchs, all have a shell divided into two valves) form another still lower class called *Brachiopoda*, a class which we may, at least provisionally, consider as belonging to the mollusca. These *Brachiopods* are also called "Lamp-shells," from a certain resemblance which many of them show to the form of a classical lamp. They are interesting, because in very ancient times they seem to have held that place in the world's animal population which is now held by the Lamellibranchs, by which, as they died out, they have been gradually replaced till but comparatively few forms survive. Some of these, however, are of great antiquity, and one of them, *Lingula*, is, though still living, one of the most ancient of all known animals.

We may next pass to a small sub-kingdom which includes the curious and inert animals before referred to^[16] as "Sea-squirts," Tunicaries or Ascidiars, and which constitute the sub-kingdom TUNICATA. These are marine organisms of very simple but very peculiar structure which sometimes grow up in compound aggregations. Certain forms (*e.g.*, *Pyrosoma*) are luminous at night and may be seen swimming about in the ocean like so many red-hot urn-heaters. As we shall hereafter see, the reproductive processes and the earlier stages of existence of these creatures possess much interest, and have afforded strong grounds for regarding them, in spite of their lowly organization, as very close allies of the highest animals or *Vertebrata*.

[Pg 31]

Returning now to the "lobster" (lately mentioned as one of those animals commonly called "shell-fish") we may regard it as an example of what is by far the most numerous of all the sub-kingdoms of animals. This sub-kingdom is made up of animals with jointed feet or "Arthropods," and the ARTHROPODA are subdivided into four classes—1, *Crustacea*; 2, *Myriapoda*; 3, *Arachnida*; and 4, *Insecta*; and it is to the first of these four classes that the lobster belongs.

The class *Crustacea* contains, besides the lobster (and its near allies, hermit-crabs, prawns, shrimps, and cray-fish), all crabs, including those very quaint-looking animals (now so often seen in our living collections), the king-crabs (*Limulus*), and a variety of more or less strangely different forms such as the following:—

Certain Crustaceans, of the group called *Ostracods*, have the hard outer coat of their body so peculiarly modified that they have quite the appearance of Lamellibranch Mollusks, and this resemblance is even more than skin deep, as we shall see later.

Some of another group, called *Copepoda*, become, when adult, so degraded in structure as to have the appearance of mere worms, as *Lerneocera* and *Tracheliastes*, and become strangely unlike the typical forms (crabs and lobsters) of their class.

Other animals of the class *Crustacea*, which animals form the order *Cirripedia* (barnacles and acorn-shells), bear such an external resemblance to mollusks that they were actually classed by Cuvier in the class *Mollusca*. In some of them—the Barnacles which commonly attach themselves to the bottoms of ships—the head grows from above downwards to a relatively enormous degree, forming the long stalk or "peduncle," at the lower end of which the small body with its limbs hangs suspended.

In another group, *Rhizocephala*, the form of the adult becomes yet more strange. These creatures are parasitic on other crustacea. Having attached themselves to the surface of the soft abdomen of the Hermit crab, the head of the Rhizocephalon grows out into it as so many root-like processes, from which condition the group has received its name.

The numerous and long extinct group of *Trilobites* also belongs to the class *Crustacea*.

The next class, *Myriopoda*, consists of the hundred-legs (centipedes), and thousand-legs (millipedes), which present us with some of the best examples of creatures the bodies of which are composed of a longitudinal series of similar segments. Allied to them is a very exceptional animal found in Africa and New Zealand, and called *Peripatus*, the anatomy of which presents many significant peculiarities.

[Pg 32]

The third class of Arthropods (*Arachnida*) consists of the scorpions and spiders with their poor relations, the mites and ticks, together with the very peculiarly-shaped *Pycnogonida* (which present us with a good image of "no body"—being all legs and no body), and the singular worm-like parasite *Linguatula*. Lastly, we come to the most zoologically important and numerous of all the classes of Arthropods—namely, to the "class" of insects—*Insecta*. Therein we meet with the power of flight in its most perfect form—*i.e.*, in the Dragon-flies—and most of the species are aërial in their adult (or *Imago*) condition. Some, however, are burrowers as, for example, the mole-cricket—an insect which presents some curious analogies in structure to the beast referred to in its name. Amongst insects may be mentioned the most familiar of all, the House-fly (which belongs to the order *Diptera*), and Beetles of all kinds (which constitute the order *Coleoptera*), some of which latter are luminous, as is the well-known glow-worm, and the exotic beetles *Pyrophorus*. Another order (*Orthoptera*) is made up of the earwigs, cockroaches, crickets, grasshoppers, and their allies the locusts, with Bamboo-insects and the curious walking-leaf (so-called from their resemblance to a Bamboo twig and a foliage leaf respectively), the praying mantis, and other curious kinds.

Bees and Ants, which belong to the order *Hymenoptera*, are, as every one knows, celebrated for their wonderfully complex instincts and community-life (which will occupy us later), and to the same order also belong the Ichneumon insects, which are provided with long appendages at the hinder ends of their bodies wherewith to pierce the bodies of animals in order to deposit their eggs within them, or to pierce the substance of plants, so producing "galls" which are structures of much interest from several points of view.

Butterflies and Moths form another order of insects called *Lepidoptera*, amongst which may be mentioned as (having to be referred to hereafter) the true butterflies (*Papilio*), and the hawkmoths (some of which in their flight so much resemble Humming-birds), the clear-wing moths, and those moths the grubs of which are known as "silk-worms," and certain moths of the genera *Solenobia* and *Psyche*.

The numerous group of bugs is allied to the plant-lice (*Aphides*), which so often infest our Pelargoniums when kept in dwelling-rooms. Allied to them, again, are the small creatures the nature of which was so long disputed, though familiar to commerce as "Cochineal." Really, they are small, singularly inert, plant-lice, which adhere to the surface of certain "Cacti."

The Dragon-flies, before referred to, are the types of the order *Neuroptere*.

[Pg 33]

All the insects above mentioned, save the House-fly, have four wings, or else none; but that familiar form may serve as the type of the two-winged order (*Diptera*) to which belong all flies and gnats—including, of course, the Mosquito—and the numerous "Bots," one of which (the Tsee-Tsee fly) is so fatal to cattle in Africa.

Finally, amongst insects may be mentioned the wingless, but active order of fleas (*Aphaniptera*), the wingless but sluggish lice (*Aptera*), and the jumping and wingless springtails (*Thysanura*).

In leaving the class of insects, we leave all the more highly-organized Invertebrata. But the next group to which we may direct our attention is one which is exceedingly numerous, and contains a very varied assemblage of forms. This group is the "sub-kingdom" of Worms, VERMES. First amongst its contents may be mentioned the higher or true "worms," such as the earth-worm (*Lumbricus*), the leech (*Hirudo*), the sea-mouse (*Aphrodite*), and their allies, together with the worms which live in tubes, which are called *Tubicolous*-*Annelids*," because the whole class of these higher worms bears the name *Annelida*.

In this connexion may be mentioned certain exceptional vermiform creatures, about the affinities of which naturalists dispute.

One of these is a marine creature (called *Sagitta*, from the way in which it shoots like an arrow through the water), which has many affinities to Arthropods.

Another is a most remarkable worm, which has been found in the Bay of Naples, and is called *Balanoglossus*. It is the type of a group called *Enteropneusta*. To it reference will have again and again to be made on account of certain singularities in its structure.

A very distinct class of creatures is termed *Bryozoa* (or *Polyzoa*), and is composed of very minute animals which live in compound aggregations, and often grow up in an arborescent manner. The common sea-mat (*Flustra*) is one example of the class, and another—a good type—is called *Plumatella*. The *Bryozoa* have many affinities with the *Mollusca*, to which some naturalists consider them to belong.

Other worms form the class *Nematoidea*, of which many are parasitic and many not so. Amongst the better known of the former may be mentioned the worms which tease children (*Ascarides*), the guinea-worm (*Filaria*), the scourge of Germans who eat raw meat (*Trichina*), the deadly blood-parasite of the Nile (*Bilharzia*), and many others.

Another class (*Trematoda*) is made up of parasites called "Flukes," to some of which (*e.g.*, *Monostomum*) reference will have hereafter to be made with respect to their processes of development.

The class *Turbellaria* contains a variety of other worms of a lowly kind, one or two of which (*e.g.*, *Borlesia*) live coiled up in complex tangles which, if unravelled, would attain a length of forty feet. Amongst the commoner kinds may be mentioned the worm *Nemertes*, and all worms called *Planariæ* (which are mostly fresh-water, though some live on land), allied to the flukes.

[Pg 34]

The class of tape-worms (*Cestoidea*) is one most numerous in its kinds, which are all completely parasitic in habit. Some of them are so fatal in their effects that they are estimated to occasion every seventh death which occurs in Iceland, and they cause mortality amidst our own flocks, producing in sheep the disease known as the "staggers."

Certain minute organisms, familiarly known as "Wheel-Animalcules," or Rotifers, form the "class" *Rotifera*. They have gained their name through an apparently (though, of course, not really) rotary motion, of that end of their bodies at which the mouth is situated. Here also may be mentioned certain curious aquatic worms called *Gasterotricha*, which are closely allied to the wheel animalcules.

Finally may be mentioned the class *Gephyrea*, containing animals, worm-like indeed in form, but which have much apparent affinity to the group next to be spoken of—the group of star-fishes and their allies. Amongst the *Gephyrea* may be mentioned the worms called *Sipunculus* and *Priapulus*.

This leads us to the sub-kingdom containing the star-fishes—the sub-kingdom ECHINODERMA, which includes, besides the star-fishes (or *Asteridea*), all sea-eggs or sea-urchins (*Echinidea*), the brittle-stars *Ophiuridea*, as well as the elongated soft animals called sea-cucumbers, or *Holothuridea*, some of which latter are known as the Japanese edible, "Trepang."

Besides these groups there are still surviving a few creatures (*Comatula* and *Pentacrinus*) belonging to the class of "sea-lilies," or *Crinoidea*, creatures which once lived in countless multitudes, but have now almost entirely passed away. All these crinoids were like star-fishes on stalks, and of the existing forms, *Pentacrinus* still passes the whole of its life, and *Comatula* its youth, in a stalked condition.

The next great primary division, or sub-kingdom of animals, is CŒLENTERA, and a good type of the cœlenterates, the sea anemone (*Actinia*), has now become a familiar object to us in our aquaria. These animals are plant-animals, or zoophytes, and some of them build up coral-reefs, or islands, and it is one kind which produces the red coral of commerce. Forms essentially similar, but the solid supporting framework of which is of a softer nature, are such as *Alcyonium* and *Pennatula*. All these belong to the "class" *Actinozoa*. There are other cœlenterates of an active free-swimming habit, such as *Berœe* and *Cydippe*, which are balls of glassy transparency displaying iridescent hues as they move rapidly through the water by means of their peculiar locomotive organs.

Other cœlenterates, of the same essential type but of simpler structure, form the class *Hydrozoa*. Amongst these may be mentioned the little *Hydra* of our ponds, which will often come before us in our survey of animal life. Some compound forms of Hydrozoa simulate the compound Actinozoa; such are the calcareous millipores, and those with a softer structure, called "corallines," such as *Eudendrium* and many others. The Portuguese man-of-war (*Physalia*) and the various forms of jelly-fish (*Medusæ*) all belong to the *Hydrozoa*, as also does a very curious and very elementary form, to which the name *Tetraplatia* has been given.

[Pg 35]

Next we come to the group of sponges, SPONGIDA, some of which—as the now well-known *Euplectella*—are of marvellous beauty and delicacy of structure; while others, as the sponge of commerce, are of much greater simplicity of form. Simplest of all the sponges is the sponge called *Ascetta Primordialis*. Some sponges have a horny, some a calcareous, and some a siliceous skeleton, and (strange as it may appear) some have a habit of boring into shells, and living in the excavations they make.

An animal recently discovered, *Dicyema*, may at this initial stage of our inquiry be left with its place and affinities undetermined. It is a minute worm-like creature of most exceptionally simple structure, which lives parasitically within cuttle-fishes.

We now pass to animals (if so they are really to be considered) which are the lowest and simplest of all, and which are mostly microscopic in size, and may be grouped together under the term HYPOZOA, or under the generally employed name *Protozoa*. With very few exceptions these animals are aquatic, and if terrestrial they are found in damp localities. Some are marine, others are fresh-water organisms.

The highest of the group are the animalcules, which are named *Infusoria*, most of which are freely swimming organisms, though a certain number of them live fixed to some supporting body.

Another group of *Hypozoa* is that termed *Gregarinida*, a group made up of very lowly parasites,

such as are often found tenanted the intestines of insects as well as those of higher animals. Finally, we have the group of *Rhizopoda*, animals which have the faculty of projecting and retracting (so to say, at will) filamentary or conical processes of their semi-fluid substance, such processes being the *Pseudopodia*, which were referred to earlier.^[17]

Amongst the *Rhizopoda*, the most complex and beautiful are the delicate and symmetrical creatures known as *Radiolaria*,^[18] the siliceous skeletons of which are amongst the most remarkable of microscopic objects.

Allied to them are the simpler *Heliozoa*, of which the after-mentioned *Actinophrys* may be taken as a type.

Next come the *Flagellata*, or minute creatures which swim about by means of one or two whip-like processes, whence the name of the group.

Last of all is the group of *Foraminifera*, animals which are well worthy of note, seeing that, though they are each but as it were a minute particle of structureless jelly, they manage to build most complexly-formed, generally calcareous, shells, or to pick up from the sand of the sea minute particles, which they agglutinate around them with marvellous neatness and precision. Their calcareous shells are generally pierced by a multitude of minute pores, through which the little creatures protrude their *pseudopodia*. It is from these pores (or *foramina*) that the group receives its name. All *Foraminifera*, however, are not provided with shells. Some, as the *Amœba*, are naked, and the simplest of all animals, *Protogenes* and *Protamœba*, consist of but a minute particle of semi-fluid jelly, or protoplasm, naked and as devoid of every external protection as it is of internal organization.

[Pg 36]

We have thus descended to the bottom of the animal kingdom, and passing from these rudimentary forms, which are generally reckoned as animals, we may next survey in ascending order the different organisms which together compose the kingdom of Plants, a group much less rich in species than is the animal kingdom.

At the bottom of that kingdom are very simple creatures, but little different, to all appearance, from the lowest animals. As an example of such we may take the minute plant *Protococcus*, which is an humble member of the great group of *Algæ*, to which all sea-weeds belong. Not all of this important tribe, however, are marine. Many are found in fresh water—such as the *protococcus* itself, and many of the green vegetable threads known as *Conferræ*. Some even live on land, and draw their moisture from the atmosphere. The *Algæ* are exceedingly varied in their structure; some, like the *protococcus*, being of extreme simplicity; others attaining a large size, and presenting the appearance of a stout stem with branches and leaves.

The *Algæ* are divisible into the green-spored^[19] (*Chlorospermæ*), the rose-spored (*Floridæ*), and the olive-spored (*Melanospermæ*).

It is in the first division that the *Protococcus* may be placed, as also those microscopic plants called *Diatoms* and *Desmids*. The former, the *Diatomaceæ*, are a very numerous group of minute organisms, some of which are used as test objects for microscopes. They contain in their outer coat or case a relatively large portion of silex, and their remains here and there form deposits—vast beds many feet in thickness—known as "tripoli," and used for polishing. The minute particle of their protoplasm is contained within the siliceous case. They may be entirely free, or cohere in aggregations, or be attached to a supporting surface by a slender stalk, which may ramify and bear a little siliceous case or "frustule" at the end of each branch.

The *desmids* (or *Desmidiaceæ*) are green and devoid of silex, though their protoplasm is enclosed in hard or flexible cases, often marked with beautiful and characteristic patterns.

Both diatoms and *desmids* may cohere together, forming more complex masses; but another creature allied to *Protococcus* is noted for its mode of cohesion. This is the microscopic plant *Volvox*, the individuals of which cohere so as to form spheroidal aggregations, which swim about by the action of filamentary prolongations of their protoplasm, such prolongations reminding us of the *pseudopodia* of radiolarians and other *rhizopods*.

[Pg 37]

Amongst these simplest plants may be also mentioned the curious thread-like organisms, which, on account of their remarkable and as yet unexplained movements, are called *Oscillatoriæ*.

Another curious vegetable organism which may here be mentioned is *Vaucheria*. It is a green, thread-like plant, which may be several inches long, and which at one stage of its existence (when it is what is called a "spore") swims about by *pseudopodial* prolongations of its protoplasm.

Some few of the *Chlorospermæ* are large and conspicuous organisms. Such, *e.g.*, is *Caulerpa*, which abounds on warm, sandy coasts, and on which turtles browse. Though, as we shall hereafter see, it is really as simple in structure as a particle of yeast, it yet presents a very complicated external figure.

Some of the great group of *Algæ* attain enormous dimensions. Thus, *Macrocystis* (one of the *Melanospermæ*), of the Southern Ocean, may be even 700 feet in length. Another kind, *Lessonia*, forms submarine forests, with stems like the trunks of trees.

The group of *Floridiæ* includes the delicate and elegant sea-weeds, which are amongst the most admired vegetable productions of our coasts. They are of interest, on account of various

peculiarities in their reproductive processes.

Other lowly plants may, at least provisionally, be placed in the great group to which mushrooms and truffles belong—the group of *Fungi*—a group the members of which agree in certain exceptional phenomena of function,^[20] as well as of structure and composition—as they are exceptionally nitrogenous.

Amongst the lowest which we may for convenience provisionally include in this group may be mentioned minute *Vibrios*, such as the *Bacteria* so much talked of in connexion with spontaneous generation, and the small plant which by its growth produces fermentation—the yeast-plant (*Saccharomyces*).^[21] Closely allied to the yeast-plant are the "moulds" which grow on organic matters such as *Penicillium*, *Mucor*, *Saprolegna*, *Phytophthora*, the last of which is the potato disease.

A singular group of organisms goes by the name of *Myxomycetes*. These enigmatical creatures have been classed in turn as animals and as plants, and, indeed, at one period of their existence they seem to have more resemblance to the former, while at another stage of their life history they must unquestionably be ranked as plants. When young, they are in a semi-fluid condition, and so move that they seem, as it were, to flow over the body on which they rest. They grow upon the bark of trees or on leaves and decayed wood. They exhibit movements like those of the amœbæ and are said to engulf nutritious matters which come in their way.

[Pg 38]

The dry-looking, green, grey, red or yellow vegetable structures which encrust our rocks, walls, and trees, and which are called *Lichens*, form a group of plants curiously intermediate between *Fungi* and *Algæ*.

Plants somewhat higher in the scale of vegetable life are those which are termed liverworts (*Hepaticæ*), including the scale-mosses (*Jungermanniaceæ*) and *Marchantia*. These plants, as we shall see, are interesting on account of the variations to be found in the forms of different genera. In many, there is no stem, but only a connected series of green disk-like expansions, while others have a distinct stem with leaf-like outgrowths.

Two genera of aquatic plants (*Chara* and *Nitella*) constitute another group of plants called *Characeæ*. These will be hereafter referred to both on account of peculiarities in their structure and on account of a peculiar motion of protoplasm which is easily to be seen^[22] in them.

Mosses (*Muscî*) are familiar objects to every one in this country, and allied to them are the so-called "club-mosses" or *Lycopods*, which form a sort of green sward in so many parts of the warmer regions of the earth. To one of the lycopods, called *Selaginella*, reference will hereafter be made in connexion with its very instructive reproductive process.

Certain humble plants, in some of which the foliage leaves present a superficial resemblance to those of a four-leaved clover, are popularly called pepperworts; by botanists, *Rhizocarpeæ* or *Marsiliaceæ*. They are creeping or floating stemless plants which inhabit ditches or inundated places. They are scattered over both the Old and New Worlds, but are chiefly found in temperate latitudes.

The horse-tails (*Equisetaceæ*) are also found in most parts of the world, though wanting in Australia and New Zealand. They inhabit wet and sandy places, and sometimes are of a considerable size even in the present day, but in ancient geological periods they attained the proportions of trees.

This group leads us on to their allies the ferns which form a very large natural group *Filices* or *Pteridophytes*—a group now familiar to every one interested in plants. Common as ferns are in our own country, they are far more abundant and attain to a much greater size in southern latitudes—notably in New Zealand and various Pacific islands.

All the plants hitherto enumerated, from the protococcus to the tree-ferns inclusive, together form what is commonly regarded as one great primary division or "sub-kingdom" of vegetals called CRYPTOGAMIA. In no plant belonging to this sub-kingdom—in no single cryptogam—is any flower ever developed. These form the great group which is often spoken of as "flowerless plants."

[Pg 39]

The other primary division of vegetable organisms consists of all plants with flowers, and is termed PHANEROGAMIA, and is subdivided into two sections,^[23] very unequally numerous. To the first section of phanerogams—a section containing comparatively few kinds—belong all firs, pines, yews, junipers, araucarias, and a most remarkable African plant, *Welwitschia*, which has never more than two leaves, though these attain enormous dimensions. All these plants are collectively spoken of as conifers, or *Coniferæ*. Besides these, certain curious southern forms called Cycads are also associated in this section. To this section, thus composed of conifers and cycads, the name GYMNOSPERMS is given, from the naked mode of development of their young seeds. These gymnosperms are also characterized by having such peculiar and inconspicuous flowers that the ordinary observer would hardly apply that term to denote their floral organs.

All the plants which yet remain to be noticed, and which belong to the second and very much larger section of the PHANEROGAMIA are spoken of as *Angiosperms*. Their seeds are, from their first appearance, in a very different condition from those of gymnosperms, and their flowers are generally conspicuous. To this group, therefore, belong all the familiar ornamental plants of our gardens, and all the brightly coloured natural ornaments of our fields, as well as a number of

herbs and trees, the flowers of which, though truly flowers, are not commonly recognized as such.

This group of Angiospermous flowering plants is divided into a great number of natural groups or "orders." Of these there are about 275, and they are grouped in two sets or classes, which are separated one from another, as we shall hereafter see, by differences as to their modes of growth, the structure of their seeds, the numbers of the parts of their flowers, and the course of the veins in their leaves.

First amongst the Angiospermous flowering plants may be mentioned the grasses forming the order *Gramineæ*, including under that term the tree-like bamboos (of multitudinous uses), with the rice plant, and all the grain-bearing herbs, all of which are grasses. Thus, with much reason may it be said of man, that "all flesh is grass;" for with the exception of the piscivorous Esquimaux, the exclusively flesh-eating Gouchos, the population of Australia, and the people of the Molluccas who nourish themselves on sago—which is the produce of a palm—with these and a few more exceptions, the staple food of the human race is one or another form of grass. It is, indeed, a remarkable fact that men of such varied races so widely spread should have thus selected as their food objects so little tempting in appearance, and so small and so inconspicuous as the seeds of grasses!

[Pg 40]

Allied to the grasses are the sedges (forming the order *Cyperaceæ*), and the rushes (*Juncaceæ*). The apparently insignificant, but really interesting duckweeds (*Pistiaceæ*) should also be noted with the bullrushes (*Typheæ*), and the arums (*Aroidææ*). This last-mentioned order, familiar to us by the kind known as "Lords and Ladies," presents some climbing forms in tropical countries. Generally acrid, some species, when in flower, even produce headache and vomiting; at least an explorer was attacked with these symptoms after gathering forty specimens of *Arum dracunculus*. The order is also interesting from experiments as to vegetable heat, which have been made with the flowers of some of its species.

The screw-pines (*Pandanaceæ*) are not "pines" at all, any more than "pine-apples" are pines. They are, indeed, trees or shrubs, which, from one point of view, may be regarded as gigantic bulrushes. The flowers of certain species are in some places eaten as the solid equivalent of a love potion. Allied to the plants of the last-mentioned order are the palms (*Palmaceæ*), which are the first really large trees we come to after leaving the tree-ferns and the gymnosperms. Amongst the more noteworthy palms may be mentioned the palmetto (*Chamærops*) of Southern Europe (a summer ornament of our public gardens), the date palm, the areca palm, the sago palm, the cocoa palm, the rattan palm—a natural cordage—and *Seaforthia*, so remarkable for its graceful and elegant form.

Next may be enumerated the great order of lilies (*Liliaceæ*), to which the homely and useful onion, leek, garlic, chive, and asparagus belong, no less than a multitude of lovely flowers.

The New Zealand flax (*Phormium tenax*), and all the magnificent yuccas and aloes, together with our English butcher's broom (*Ruscus aculeatus*), which has not a little botanical interest (as being the only British shrub which belongs to the group called "Monocotyledons") also belong to this order. Closely allied to the lilies are the amaryllids (*Amaryllidaceæ*), amongst which are the agaves, with their gigantic flower stems, sometimes forty feet high, supporting a multitudinous crop of flowers, the product and termination of a life.

To these follow the pine-apples (*Bromeliaceæ*) all originally from America, the useful bananas and plantains (*Musaceæ*), and the ginger-plants (*Zingiberaceæ*), tropical herbs, generally of great beauty.

The underground parts of certain tropical plants (*Dioscoreaceæ*) are known as "yams." A representative of this order exists in England in the climbing black bryony (*Tamus*) of our hedges, and to the same group belongs the very singularly stemmed elephant's foot, or tortoise-tree (*Testudinaria elephantipes*). The last-named plant is a native of the Cape of Good Hope, where it has been known as Hottentot's bread, because the soft interior of its swollen base was at one time eaten by the natives of that region, who have, however, now abandoned it to the baboons.

Lastly, in this connexion may be mentioned the very interesting and beautiful group of orchids (*Orchidaceæ*), many of which live high up in the air, supported on the branches of trees, from which their roots hang freely down. Such orchids are sometimes spoken of as "air-plants."

[Pg 41]

All the Angiosperms as yet mentioned, from the grasses to the orchids inclusively, belong to the lower of the two great groups or classes into which, as was lately said, the whole mass of Angiosperms is divided.

This great group is named *Monocotyledones* (on account of the structure of the seed), and it is sometimes spoken of as *Endogens*, in reference to a generally prevalent habit of growth. The members of this whole class will then hereinafter be spoken of as "Monocotyledons."

All the plants which yet remain to be enumerated belong to the other and still greater group of Angiosperms called (also in reference to their seeds) *Dicotyledons*, a group sometimes spoken of as "*Exogens*," in reference to the habit of growth prevalent amongst its species.

All our familiar trees which are not conifers, and most of our flowering shrubs and herbs, are "Dicotyledons."

Amongst the many orders which compose the Dicotyledonous group the few following may be

selected for enumeration, either on account of the general interest they possess, or because they will have to be more or less referred to hereafter.

We may thus note the singular order of vegetable parasites, the *Loranthaceæ*, an order containing some thirty genera with four hundred species, and including the mistletoe, which is traditionally venerable in our island. The great group of catkin-bearing trees (*Amentaceæ*), contains a great assemblage of plants, familiar in England, such as the hornbeam, hazel, oak, beech, Spanish chestnut, birch, willow, poplar, &c.^[24]

The largest and one of the most remarkable flowers in the world, *Rafflesia*—a parasite found in Java and Sumatra by Sir Stamford Raffles—is the type of the small order *Rafflesiaceæ*. The eccentric pitcher-bearing plants form the order *Nepenthaceæ*. The English herb called "Spurge" (with its milky juice), belongs to the order (*Euphorbiaceæ*), which is a large^[25] cosmopolitan group, some species of the plants belonging to which attain, in hot countries, the size of trees. Certain African species strangely resemble different kinds of *Cactus*. The elm order (*Ulmaceæ*) may come next. The hop, the hemp, the mulberry, the fig, and the dorstenia are all nearly allied, the first two belonging to the order *Cannabinaceæ*, the last three to the *Moraceæ*. The bread-fruit of the South-Sea Islands belongs to the same order (*Artocarpaceæ*) as does the deadly upas-tree of Java. Garments made of the inner bark of this plant are like the shirt of Nessus, and will produce intolerable irritation; and even climbing the tree to obtain its flowers is said to have produced severe effects on the climber. In proximity to the last-mentioned plant comes appropriately (as also in its proper botanical order) the group of stinging-nettles (*Urticaceæ*). The curious Australian plants which delighted the eyes of Captain Cook's botanical companions belong to the order *Proteaceæ*. Besides these may be mentioned the dead-nettle order (*Labiataë*); the broom-rapes (*Orobanchaceæ*); the order of snap-dragons and foxgloves (*Scrophularineæ*); the potato group (*Solanaceæ*), which includes the deadly nightshade and the dulcamara of our hedges; the parasitic order (*Cuscutaceæ*); the beautiful group of convolvuluses (*Convolvulaceæ*); the gentians (*Gentianaceæ*); the primrose group (*Primulaceæ*); the heaths (*Ericaceæ*); the graceful hair-bell and its allies (*Campanulaceæ*); the very large group to which belong the daisy, dandelion, and thistle (*Compositæ*); the honeysuckle order (*Caprifoliaceæ*); the ivy (*Araliaceæ*); the large order containing the fennel, hemlock, and a multitude of other forms which, though mostly ranking as herbs, attain gigantic dimensions in some species found in Africa and Kamskatka (*Umbelliferæ*); the very singularly-shaped group of cactuses (*Cactaceæ*), with leafless fleshy stems, which sometimes look like dry columns and sometimes are globular; the begonias (*Begoniaceæ*); the cucumbers, melons, and vegetable marrows (*Cucurbitaceæ*); the singularly-formed passion-flowers (*Passifloraceæ*); the myrtles (*Myrtaceæ*); the carnivorous group containing the sundew and Venus's flytrap (*Droseracæ*); the fleshy houseleek and stonecrops (*Crassulaceæ*); the Saxifrages (*Saxifragaceæ*); the rose group (*Rosaceæ*), which includes within it most of our fruits, such as the apple, pear, strawberry, cherry, peach, plum, almond, and others; the very large order which contains the peas, beans, and their allies (*Leguminoseæ*); the horse-chestnut order (*Hippocastaneæ*); the maples (*Acerineæ*); the hollies (*Ilicineæ*); the oranges and citrons (*Aurantiaceæ*); the cranesbills and pelargoniums (*Geraniaceæ*); the flaxes (*Linaceæ*); the limes (*Tiliaceæ*), in which the useful jute is included; the mallows (*Malvaceæ*); the St. John's worts (*Hypericaceæ*); the order of pinks (*Caryophylleæ*); the pansies (*Violaceæ*); the rock-roses (*Cistaceæ*); the mignonette group (*Resedaceæ*); the great wall-flower and cabbage group (*Cruciferæ*); the poppies (*Papaveraceæ*); the water-lilies (*Nymphaceæ*); the berberries (*Berberideæ*); the custard-apples (*Anonaceæ*); the magnolias (*Magnoliaceæ*); and, finally, the great group (*Ranunculaceæ*) containing the anemones, the clematis, hellebore, monkshood, and the buttercup, which last is of great use to the student of Botany because it is an excellent type of all flowers.

[Pg 42]

The above may serve as a brief enumeration of the more generally known or more interesting orders of flowering plants, as also of the most noteworthy forms of cryptogams. The much more numerous and complex groups of animals have also been catalogued in the earlier and larger part of this Essay, which may thus, it is hoped, answer the purpose of an introduction to those multitudinous forms of organic life, the leading points in the structure and functions of which are hereafter to occupy us.

[Pg 43]

The main groups of Animals and Plants may be provisionally tabulated as follows:—

ANIMALS.

- | | | |
|--|---|--|
| (1) VERTEBRATA
(Back-boned Animals) | } | <i>Mammalia</i> (Man and Beasts)
<i>Aves</i> (Birds)
<i>Reptilia</i> (Serpents, Crocodiles, Lizards, &c.)
<i>Batrachia</i> (Frogs, Efts, &c.)
<i>Pisces</i> (Fishes) |
|--|---|--|

- | | | |
|--------------------------------|---|---|
| (2) MOLLUSCA
(Soft Animals) | } | <i>Cephalopoda</i> (Cuttle Fishes)
<i>Pteropoda</i>
<i>Gasteropoda</i> (Snails, &c.)
<i>Lamellibranchiata</i> (Oysters, &c.)
<i>Brachiopoda</i> (Lamp-shells) |
|--------------------------------|---|---|

(3) TUNICATA (Ascidians, Tunicaries, or Sea-squirts)

(4) ARTHROPODA
(Animals with jointed feet) } *Crustacea* (Crabs, &c.)
Myriapoda (Hundred-legs, &c.)
Gasteropoda (Snails, &c.)
Arachnida (Scorpions, Spiders, &c.)
Insecta

(5) VERMES } *Annelida* (Earth-worms, Leeches, &c.)
Enteropneusta (Balanoglossus)
Bryozoa (Sea-mat, &c.)
Nematoidea (Thread-worms)
Trematoda (Flukes, &c.)
Turbellaria (Planariæ, &c.)
Cestoidea (Tape-worms)
Rotifera (Wheel-animalcules)
Gasterotricha
Gephyrea (Sipunculus, &c.)

(6) ECHINODERMA (Star-fishes, &c.)

(7) CŒLELENTERA } *Ctenophora* (Berœe, &c.)
Myriapoda (Hundred-legs, &c.)
Hydrozoa (Jelly-fishes, &c.)

(8) SPONGIDA (Sponges)

(9) HYPOZOA } *Infusoria* (Animalcules with mouths)
Gregarinida
Rhizopoda (Foraminifers, Radiolarians, Flagellata, &c.)

PLANTS.

(1) CRYPTOGAMIA
(Flowerless Plants) } *Algæ* (Sea-weeds, Confervæ, &c.)
Fungi
Lichenes
Hepaticæ (Liverworts and Scale-mosses)
Characeæ (Nitella, &c.)
Musci (Mosses)
Marsiliaceæ (Pepperworts)
Equisetaceæ (Horsetails)
Filices (Ferns)

(2) PHANEROGAMIA } A. *Gymnosperms* (Firs, Yews, Cycads, &c.)
Monocotyledones (Grasses, Palms, Lilies, Orchids, &c.)

B. *Angiosperms Dicotyledones* (the great mass of Flowering Plants and Trees).

ST. GEORGE MIVART.

[Pg 44]

THE ARTISTIC DUALISM OF THE RENAISSANCE.

I.

Into the holy enclosure which had received the precious shiploads of earth from Calvary, the

Pisans of the thirteenth century carried the fragments of ancient sculpture brought from Rome and from Greece; and in the Gothic cloister enclosing the green sward and dark cypresses of the grave-yard of Pisa, the art of the Middle Ages came for the first time face to face with the art of antiquity. There, among pagan sarcophagi turned into Christian tombs, with heraldic devices chiselled on to their arabesques and vizored helmets surmounting their garlands, the great unsigned artist of the fourteenth century, be he Sienese or Florentine, be he Orcagna, Lorenzetti, or Volterra, painted the typical masterpiece of mediæval art, the great fresco of the Triumph of Death. With wonderful realization of character and situation he painted the prosperous of the world, the dapper youths and damsels seated with dogs and falcons beneath the orchard trees, amusing themselves with Decameronian tales and sound of lute and psaltery, unconscious of the gigantic scythe wielded by the gigantic dishevelled Death, and which, in a second, will descend and mow them to the ground; but the crowd of beggars, ragged, maimed, paralyzed, leprous, grovelling on their withered limbs, see and implore Death, and cry stretching forth their arms, their stumps, and their crutches. Further on, three kings in long embroidered robes and gold-trimmed shovel caps, Lewis the Emperor, Ugucione of Pisa, and Castruccio of Lucca, with their retinue of ladies and squires, and hounds and hawks, are riding quietly through a wood. Suddenly their horses stop, draw back; the Emperor's bay stretches out his long neck sniffing the air; the kings strain forward to see, one holding his nose for the stench of death which meets him; and before them are three open coffins, in which lie, in three loathsome stages of corruption, from blue and bloated putrescence to well-nigh fleshless decay, three crowned corpses. This is the triumph of Death; the grim and horrible jest of the Middle Ages: equality in decay; kings, emperors, ladies, knights, beggars, and cripples, this is what we all come to be, stinking corpses; Death, our lord, our only just and lasting sovereign, reigns impartially over all.

[Pg 45]

But opposite, all along the sides of the painted cloister, the amazons are wrestling with the youths on the stone of the sarcophagi; the chariots are dashing forward, the Tritons are splashing in the marble waves; the Bacchantæ are striking their timbrels in their dance with the satyrs; the birds are pecking at the grapes, the goats are nibbling at the vines, all is life, strong and splendid in its marble eternity. And the mutilated Venus smiles towards the broken Hermes; the stalwart Hercules, resting against his club, looks on quietly, a smile beneath his beard; and the gods murmur to each other, as they stand in the cloister filled with earth from Calvary, where hundreds of men lie rotting beneath the cypresses, "Death will not triumph for ever; our day will come."

We have all seen them opposite to each other, these two arts, the art born of antiquity and the art born of the Middle Ages; but whether this meeting was friendly or hostile or merely indifferent, is a question of constant dispute. To some, mediæval art has appeared being led, Dante-like, by a magician Virgil through the mysteries of Nature up to a Christian Beatrice, who alone can guide it to the kingdom of heaven; others have seen mediæval art, like some strong, chaste knight turning away resolutely from the treacherous sorceress of antiquity, and pursuing solitarily the road to the true and the good; for some the antique has been an impure goddess Venus, seducing and corrupting the Christian artist; the antique has been for others a glorious Helen, an unattainable perfection, ever pursued by the mediæval craftsman, but seized by him only as a phantom. Magician or witch, voluptuous, destroying Venus or cold and ungrasped Helen, what was the antique to the art born of the Middle Ages and developed during the Renaissance? Was the relation between them that of tuition, cool and abstract, or of fruitful lore, or of deluding and damning example?

The art which came to maturity in the late fifteenth and early sixteenth centuries was generated in the early mediæval revival. The seeds may, indeed, have come down from antiquity, but they remained for nearly a thousand years hidden in the withered, rotting remains of former vegetation, and it was not till that vegetation had completely decomposed and become part of the soil, it was not till putrefaction had turned into germination, that artistic organism timidly reappeared. The new art-germ developed with the new civilization which surrounded it. Manufacture and commerce reappeared: the artisans and merchants formed into communities; the communities grew into towns, the towns into cities; in the city arose the cathedral; the Lombard or Byzantine mouldings and traceries of the cathedral gave birth to figure-sculpture; its mosaics gave birth to painting; every forward movement of the civilization unfolded as it were a new form or detail of the art, until, when mediæval civilization was reaching its moment of consolidation, when the cathedrals of Lucca and Pisa stood completed, when Niccoto and Giovanni Pisani had sculptured their pulpits and sepulchres, painting, in the hands of, Cimabue and Duccio, of Giotto and of Guido da Siena, freed itself from the tradition of the mosaicists as sculpture had freed itself from the practice of the stone-masons, and stood forth an independent and organic art.

[Pg 46]

Thus painting was born of a new civilization, and grew by its own vital force; a thing of the Middle Ages, original and spontaneous. But contemporaneous with the mediæval revival was the resuscitation of antiquity; in proportion as the new civilization developed, the old civilization was exhumed; real Latin began to be studied only when real Italian began to be written; Dante, Petrarca, and Boccaccio were at once the founders of modern literature and the exponents of the literature of antiquity; the strong young present was to profit by the experience of the past.

As it was with literature, so likewise was it with art. The most purely mediæval sculpture, the sculpture which has, as it were, just detached itself from the capitals and porches of the cathedral, is the direct pupil of the antique; and the three great Gothic sculptors, Niccoto, Giovanni, and Andrea of Pisa, learn from fragments of Greek and Roman sculpture how to model

the figure of the Redeemer and how to chisel the robe of the Virgin. This spontaneous mediæval sculpture, aided by the antique, preceded by a full half-century the appearance of mediæval painting; and it was from the study of the works of the Pisan sculptors, that Cimabue and Giotto learned to depart from the mummified monstrosities of the Miratic, Byzantine, and Roman style of Giunta and Berlinghieri. Thus, through the sculpture of the Pisans the painting of the school of Giotto received at second-hand the teachings of antiquity. Sculpture had created painting, painting now belonged to the painters. In the hands of Giotto it developed within a few years into an art which seemed almost mature, an art dealing victoriously with its materials, triumphantly solving its problems, executing as if by miracle all that was demanded of it. But Giottesque art appeared perfect merely because it was limited; it did all that was required of it, because that which was required was little; it was not asked to reproduce the real, nor to represent the beautiful, it was asked merely to suggest a character, a situation, a story.

The artistic development of a nation has its exact parallel in the artistic development of an individual. The child uses his pencil to tell a story, satisfied with balls and sticks as body, head, and legs, provided he and his friends can associate with them the ideas in their minds: the youth sets himself to copy what he sees, to reproduce forms, and effects, without any aim beyond the mere pleasure of copying; the mature artist strives to obtain forms and effects of which he approves, he seeks for beauty. In the life of Italian painting generations of men who flourished at the beginning of the sixteenth century are the mature artists; the men of the fifteenth century are the inexperienced youths; the Giottesques are the children—children Titanic and seraph-like, but children nevertheless, and, like all children, learning more perhaps in their few years than can the youth of the man learn in a lifetime.

[Pg 47]

Like the child, the Giottesque painter wished to show a situation or express a story, and for this purpose the absolute realization of objects was unnecessary. Giottesque art is not incorrect art, it is generalized art; it is an art of mere outline. The Giottesques could draw with great accuracy the hand, the form of the fingers, the bend of the limb, they could give to perfection its whole gesture and movement, they could produce a correct and spirited outline, but within this correct outline marked off in dark paint there is but a vague, uniform mass of pale colour; the body of the hand is missing, and there remains only its ghost, visible indeed, but unsubstantial, without weight or warmth, eluding the grasp. The difference between this spectre hand of the Giottesques, and the sinewy, muscular hand which can shake and crush of Masaccio and Signorelli, or the soft hand with throbbing pulse and warm pressure of Perugino and Bellini,—this difference is typical of the difference between the art of the fourteenth century and the art of the fifteenth century; the first suggests, the second realizes; the one gives impalpable outlines, the other gives tangible bodies; the Giottesque cares for the figure only, inasmuch as it displays an action, he reduces it to a semblance, a phantom, to the mere exponent of an idea; the man of the Renaissance cares for the figure, inasmuch as it is a living organism, he gives it substance and weight, he makes it stand out as an animate reality. But despite its early triumphs, the Giottesque style, by its inherent nature, forbade any progress; it reached its limits at once, and the followers of Giotto look almost as if they were his predecessors, for the simple reason that, being unable to advance, they were forced to retrograde. The limited amount of artistic realization required to present to the mind of the spectator a situation or an allegory had been obtained by Giotto himself, and bequeathed by him to his followers, who, finding it more than sufficient for their purposes, and having no incentive to further acquisition in the love of form and reality for their own sake, worked on with their master's materials, composing and recomposing, but adding nothing of their own. Giotto had observed Nature with passionate interest, because, although its representation was only a means to an end, it was a means which required to be mastered, and as such became in itself a sort of secondary aim; but the followers of Giotto merely utilized his observations of Nature, and in so doing gradually conventionalized and debased these second-hand observations. Giotto's forms are wilfully incomplete, because they aim at mere suggestion, but they are not conventional: they are diagrams, not symbols, and thence it is that Giotto seems nearer to the Renaissance than do his latest followers, not excepting even Orcagna. Painting, which had made the most prodigious strides from Giunta to Cimabue, and from Cimabue to Giotto, had got enclosed within a vicious circle, in which it moved for nearly a century neither backwards nor forwards: painters were satisfied with suggestion; and as long as they were satisfied, no progress was possible.

[Pg 48]

From this Giottesque treadmill, painting was released by the intervention of another art. The painters were hopelessly mediocre; their art was snatched from them by the sculptors. Orcagna himself, perhaps the only Giottesque who gave painting an onward push, had modelled and cast one of the bronze gates of the Florence baptistery; the generation of artists who arose at the beginning of the fifteenth century, and who opened the period of the Renaissance, were sculptors or pupils of sculptors. When we see these vigorous lovers of Nature, these heroic searchers after truth, suddenly pushing aside the decrepit Giottesque allegory-mongers, we ask ourselves in astonishment whence they have arisen, and how those broken-down artists of effete art could have begotten such a generation of giants. Whence do they come? Certainly not from the studios of the Giottesques; no, they issue out of the workshops of the stone-mason, of the goldsmith, of the worker in bronze, of the sculptor. Vasari has preserved the tradition that Masolino and Paolo Uccello were apprentices of Ghiberti; he has remarked that their greatest contemporary, Masaccio, "trod in the steps of Brunelleschi and of Donatello." Pollaiuolo and Verrocchio we know to have been equally excellent as painters and as workers in bronze; sculpture, at once more naturalistic and more constantly under the influence of the antique, had for the second time laboured for painting. Itself a subordinate art, without real vitality, without deep roots in the civilization, sculpture was destined to remain the unsuccessful pupil of the antique, and the

unsuccessful rival of painting; but sculpture had for its mission to prepare the road for painting and to prepare painting for antique influence, and the noblest work of Ghiberti and Donatello was Masaccio, as the most lasting glory to the Pisani had been Giotto.

With Masaccio began the study of Nature for its own sake, the desire of reproducing external objects without any regard to their significance as symbols or as parts of a story, the passionate wish to arrive at absolute realization. The merely suggestive outline art of the Giottesques had come to an end; the suggestion became a matter of indifference; the realization became a paramount interest; the story was forgotten in the telling, the religious thought was lost in the search for the artistic form. The Giottesques had used debased conventionalism to represent action with wonderful narrative and logical power; the artists of the early Renaissance became unskilful narrators and foolish allegorists almost in proportion as they became skilful draughtsmen and colourists; the Saints had become to Masaccio merely so many lay figures on to which to cast drapery; for Fra Filippo, the Madonna was a mere peasant model; for Filippino Lippi and for Ghirlandajo, a miracle meant merely an opportunity of congregating a number of admirable portrait figures in the dress of the day; the Baptism for Verrocchio had significance only as a study of muscular legs and arms; and the sacrifice of Noah had no importance for Uccello save as a grand opportunity for foreshortenings. In the hands of the Giottesques, interested in the subject and indifferent to the representation, painting had remained stationary for eighty years; for eighty years did it develop in the hands of the men of the fifteenth century, indifferent to the subject and passionately interested in the representation. The unity, the appearance of relative perfection of the art had disappeared with the limits within which the Giottesques had been satisfied to move; instead of the intelligible and solemn conventionalism of the Giottesques, we see only disorder, half-understood ideas and abortive attempts, confusion which reminds us of those enigmatic sheets on which Leonardo or Michel Angelo scrawled out their ideas, drawings within drawings, plans of buildings scratched over Madonna heads, single flowers upside down next to flayed arms, calculations, monsters, sonnets, a very chaos of thoughts and of shapes, in which the plan of the artist is inextricably lost, which mean everything and nothing, but out of whose unintelligible network of lines and curves have issued masterpieces, and which only the foolish or the would-be philosophical would exchange for some intelligible, hopelessly finished and finite illustration out of a Bible or a book of travels.

[Pg 49]

Anatomy, perspective, colour, drapery, effects of light, of water, of shadow, forms of trees and flowers, converging lines of architecture, all this at once absorbed and distracted the attention of the artists of the early Renaissance; and while they studied, copied, and calculated, another thought began to haunt them, another eager desire began to pursue them: by the side of Nature, the manifold, the baffling, the bewildering, there rose up before them another divinity, another sphinx, mysterious in its very simplicity and serenity—the antique.

The exhumation of the antique had, as we have seen, been contemporaneous with the birth of painting; nay, the study of the remains of antique sculpture had, in contributing to form Niccoto Pisano, indirectly helped to form Giotto; the very painter of the "Triumph of Death" had inserted into his terrible fresco two-winged genii, upholding a scroll, copied without any alteration from some coarse Roman sarcophagus, in which they may have sustained the usual *Dis Manibus Sacrum*. There had been, on the part of both sculptors and painters, a constant study of the antique; but during the Giottesque period this study had been limited to technicalities, and had in no way affected the conception of art. The mediæval artists, surrounded by physical deformities, and seeing sanctity in sickness and dirt, little accustomed to observe the human figure, were incapable, both as men and as artists, of at all entering into the spirit of antique art. They could not perceive the superior beauty of the antique; they could recognize only its superior science and its superior handicraft, and these they studied to obtain.

[Pg 50]

Giovanni Pisano, sculpturing the unfleshed, carved carcasses of the devils who leer, writhe, crunch, and tear on the outside of Orvieto Cathedral, and the Giottesques painting those terrible green, macerated Christs, hanging livid and broken from the cross, which abound in Tuscany and Umbria, the artists who produced these loathsome and lugubrious works were indubitably students of the antique; but they had learned from it not a love for beautiful form and noble drapery, but merely the general shape of the limbs and the general fall of the garments; the anatomical science and technical processes of antiquity were being used to produce the most intensely un-antique, the most intensely mediæval works. Thus matters stood in the time of Giotto. His followers, who studied only arrangement, probably consulted the antique as little as they consulted Nature; but the contemporary sculptors were brought by the very constitution of their art into close contact both with Nature and with the antique; they studied both with determination, and handed over the results of their labours to the sculptor-taught painters of the fifteenth century.

Here, then, were the two great factors in the art of the Renaissance—the study of Nature, and the study of the antique; both understood slowly, imperfectly; the one counteracting the effect of the other; the study of Nature now scaring away all antique influence; the study of the antique now distorting all imitation of Nature; rival forces confusing the artist and marring the work, until, when each could receive its due, the one corrected the other, and they combined, producing by this marriage of the living reality with the dead but immortal beauty, the great art of Michel Angelo, of Raphael, and of Titian: double like its origin, antique and modern, real and ideal.

The study of the antique is thus placed opposite to the study of Nature, the comprehension of the works of antiquity is the momentary antagonist of the comprehension of Nature. And this may

seem strange, when we consider that antique art was itself due to perfect comprehension of Nature. But the contradiction is easily explained. The study of Nature, as it was carried on in the Renaissance, comprised the study of effects which had remained unnoticed by antiquity; and the study of the statue, colourless, without light, shade, or perspective, interfered with, and was interfered with by, the study of colour, of light and shade, of perspective, and of all that a generation of painters would seek to learn from Nature. Nor was this all; the influence of the civilization of the Renaissance, of a civilization directly issued from the Middle Ages, was entirely at variance with the influence of antique civilization through the medium of ancient art; the Middle Ages and antiquity, Christianity and Paganism, were even more opposed to each other than could be the statue and the easel picture, the fresco and the bas-relief.

[Pg 51]

First, then, we have the hostility between painting and sculpture, between the *modus operandi* of the modern and the *modus operandi* of the ancient art. Antique art is in the first place purely linear art, colourless, tintless, without light and shade; next, it is essentially the art of the isolated figure, without background, grouping, or perspective. As linear art it could directly affect only that branch of painting which was itself linear, and as art of the isolated figure it was ever being contradicted by the constantly developing arts of perspective and landscape. The antique never directly influenced the Venetians, not from reasons of geography and culture, but from the fact that Venetian painting, founded from the earliest times upon a system of colour, could not be affected by antique sculpture, based upon a system of modelled, colourless forms; the men who saw form only through the medium of colour could not learn much from purely linear form; hence it is that even after a certain amount of antique imitation had passed into Venetian painting, through the medium of Mantegna, the Venetian painters display comparatively little antique influence. In Bellini, Carpaccio, Cima, and other early masters, the features, forms, and dress are mainly modern and Venetian; and Giorgione, Titian, and even the eclectic Tintoret were more interested in the bright lights of a steel breastplate than in the shape of a limb, and preferred in their hearts a shot brocade of the sixteenth century to the finest drapery modelled by an ancient.

The antique influence was naturally strongest among the Tuscan schools; because the Tuscan schools were essentially schools of drawing, and the draughtsman only recognized in antique sculpture the highest perfection of that linear form which was his own domain. The antique not only appealed most to the linear schools, but even in them it could strongly influence only the purely linear part; it is strong in the drawings and weak in the paintings. As long as the artists had only the pencil or pen, they could reproduce much of the linear perfection of the antique; they were, so to speak, alone with it; but as soon as they brought in colour, perspective, and scenery, the linear perfection was lost in attempts at something new; the antique was put to flight by the modern. Botticelli's crayon study for his Venus is almost antique, his tempera picture of Venus, with the pale blue scaly sea, the laurel grove, the flower-embroidered garments, the wisps of tawny hair, is comparatively mediæval; Pinturicchio's sketch of fauns and satyrs contrasts strangely with his frescos in the library of Silena; Mantegna himself, supernaturally antique in his engravings, becomes almost trivial and modern in his oil paintings. Do what they might, draw from the antique, calculate its proportions, the artists of the Renaissance found themselves baffled as soon as they attempted to apply the result of their linear studies to coloured pictures; as soon as they tried to make the antique unite with the modern, one of the two elements was sure to succumb. In Botticelli, draughtsman and student though he was, the modern, the mediæval, that part of the art which had arisen in the Middle Ages, invariably had the upper hand; his Venus has, despite her forms studied from the antique and her gesture imitated from some earlier discovered copy of the Medicean Venus, the woe-begone prudery of a Madonna or of an abbess; she shivers physically and morally in her unaccustomed nakedness, and the goddess of Spring, who comes skipping up from beneath the laurel copse, does well to prepare her a mantle, for in the paled tempera colour, against the dismal background of rippled sea, this mediæval Venus, at once indecent and prudish, is no pleasing sight. In the Allegory of Spring in the Academy of Florence, we again have the antique; goddesses and nymphs whose clinging garments the gentle Sandro Botticelli has assuredly studied from some old statue of Agrippina or Faustina; but what strange livid tints are there beneath those draperies, what eccentric gestures are those of the nymphs, what a green, ghostlike light illumines the garden of Venus! Are these goddesses and nymphs immortal women such as the ancients conceived, or are they not rather fantastic fairies or nixen, Titanias and Undines, incorporeal daughters of dew and gossamer and mist?

[Pg 52]

In Sandro Botticelli the teachings of the statue are forgotten or distorted when the artist takes up his palette and brushes; in his far greater contemporary, Andrea Mantegna, the ever-present antique chills and arrests the vitality of the modern. Mantegna, the pupil of the ancient marbles of Squarcione's workshop even more than the pupil of Donatello, studies for his paintings not from Nature, but from sculpture; his figures are seen in strange projection and foreshortening, like figures in a high relief seen from below; despite his mastery of perspective, they seem hewn out of the background; despite the rich colours which he displays in his Veronese altar-piece, they look like painted marbles, with their hard clots of stone-like hair and beard, with their vacant glance and their wonderful draperies, clinging and weighty like the wet draperies of ancient sculpture. They are beautiful petrifications, or vivified statues; Mantegna's masterpiece, the sepia "Judith" in Florence, is like an exquisite, pathetically lovely Eurydice, who has stepped unconscious and lifeless out of a Praxitelian bas-relief. And there are stranger works than even the Judith; strange statuesque fancies, like the fight of Marine Monsters and the Bacchanal among Mantegna's engravings. The group of three wondrous creatures, at once men, fish, and gods, is as grand and even more fantastic than Leonardo's Battle of the Standard: a Triton, sturdy and muscular, with sea-weed beard and hair, wheels round his finned horse, preparing to strike

his adversary with a bunch of fish which he brandishes above him; on him is rushing, careering on an osseous sea-horse, a strange, lank, sinewy being, fury stretching every tendon, his long clawed feet striking into the flanks of his steed, his sharp, reed-crowned head turned fiercely, with clenched teeth, on his opponent, and stretching forth a truncheon, ready to run down his enemy as a ship runs down another; and further off a young Triton, with clotted hair and heavy eyes, seems ready to sink wounded below the rippling wavelets, with the massive head and marble agony of the dying Alexander; enigmatic figures, grand and grotesque, lean, haggard, vehement, and yet, in the midst of violence and monstrosity, unaccountably antique. The other print, called the Bacchanal, has no background: half-a-dozen male figures stand separate and naked as in a bas-relief. Some are leaning against a vine-wreathed tub; a satyr, with acanthus-leaves growing wondrously out of him, half man, half plant, is emptying a cup; a heavy Silenus is prone upon the ground; a faun, seated upon the vat, is supporting in his arms a beautiful sinking youth; another youth, grand, muscular and grave as a statue, stands on the further side. Is this really a bacchanal? Yes, for there is the paunchy Silenus, there are the fauns, there the vat and vine-wreaths and drinking-horns. And yet it cannot be a bacchanal. Compare with it one of Rubens's orgies, where the overgrown, rubicund men and women and fauns tumble about in tumultuous, riotous intoxication: that is a bacchanal; they have been drinking, those magnificent brutes, there is wine firing their blood and weighing down their heads. But here all is different, in this so-called Bacchanal of Mantegna. This heavy Silenus is supine like a mass of marble; these fauns are shy and mute; these youths are grave and sombre; there is no wine in the cups, there are no lees in the vat, there is no life in these magnificent colossal forms; there is no blood in their grandly bent lips, no light in their wide-opened eyes; it is not the drowsiness of intoxication which is weighing down the youth sustained by the faun; it is no grape-juice, which gives that strange, vague glance. No; they have drunk, but not of any mortal drink; the grapes are grown in Persephone's garden, the vat contains no fruits that have ripened beneath our sun. These strange, mute, solemn revellers have drunk of Lethe, and they are growing cold with the cold of death and of marble; they are the ghosts of the dead ones of antiquity, revisiting the artist of the Renaissance, who paints them, thinking he is painting life, while that which he paints is in reality death.

[Pg 53]

This anomaly, this unsatisfactory character of the works of both Botticelli and Mantegna, is mainly technical; the antique is frustrated in Botticelli, not so much by the Christian, the mediæval, the modern mode of feeling, as by the new methods and aims of the new art which disconcert the methods and aims of the old art; and that which arrests Mantegna in his development as a painter is not the spirit of paganism deadening the spirit of Christianity, but the laws of sculpture hampering painting. But this technical contest between two arts, the one not yet fully developed, the other not yet fully understood, is as nothing compared with the contest between the two civilizations, the antique and the modern; between the habits and tendencies of the contemporaries of the artists of the Renaissance and of the artists themselves, and the habits and tendencies of the antique artists and their contemporaries. We are apt to think of the Renaissance as of a period closely resembling antiquity, misled by the inevitable similarity between southern and democratic countries of whatever age; misled still less pardonably by the Ciceronian pedantries and pseudo-antique obscurities of a few humanists, and by the pseudo-Corinthian arabesques and capitals of a few learned architects. But all this was mere archæological finery borrowed by a civilization in itself entirely unlike that of ancient Greece.

[Pg 54]

The Renaissance, let us remember, was merely the flowering time of that great mediæval movement which had germinated early in the twelfth century; it was merely a more advanced stage of the civilization which had produced Dante and Giotto, of the civilization which was destined to produce Luther and Rabelais. The fifteenth century was merely the continuation of the fourteenth century, as the fourteenth had been of the thirteenth; there had been growth and improvement; development of the more modern, diminishing of the more mediæval elements; but, despite growth and the changes due to growth, the Renaissance was part and parcel of the Middle Ages. The life, thought, aspirations, and habits were mediæval, opposed to the open-air life, the physical training, and the materialistic religion of antiquity. The surroundings of Masaccio and of Signorelli, nay, even of Raphael, were very different from those of Phidias or Praxiteles. Let us think what were the daily and hourly impressions given by the Renaissance to its artists. Large towns, in which thousands of human beings were crowded together, in narrow, gloomy streets, with but a strip of blue visible between the projecting roofs; and in these cities an incessant commercial activity, with no relief save festivals at the churches, brawls at the taverns, and carnival buffooneries. Men and women pale and meagre for want of air, and light, and movement; undeveloped, untrained bodies, warped by constant work at the loom or at the desk, at best with the lumpish freedom of the soldier and the vulgar nimbleness of the 'prentice. And these men and women dressed in the dress of the Middle Ages, gorgeous perhaps in colour, but heavy, miserable, grotesque, nay, sometimes ludicrous in form; citizens in lumpish robes and long-tailed caps; ladies in stiff and foldless brocade hoops and stomachers; artisans in striped and close-adhering hose and egg-shaped padded jerkin; soldiers in lumbering armour-plates, ill-fitted over ill-fitting leather, a shapeless shell of iron, bulging out and angular, in which the body was buried as successfully as in the robes of the magistrates. Thus we see the men and women of the Renaissance in the works of all its painters; heavy in Ghirlandajo, vulgarly jaunty in Phillipino, preposterously starched and prim in Mantegna, ludicrously undignified in Signorelli; and mediæval stiffness, awkwardness, and absurdity reach their acme perhaps in the little boys, companions of the Medici children, introduced into Benozzo Gozzoli's Building of Babel.

These are the prosperous townsmen, among whom the Renaissance artist is but too glad to seek for models; but besides these there are lamentable sights, mediæval beyond words, at every

[Pg 55]

street corner—dwarfs and cripples, maimed and diseased beggars of all degrees of loathsomeness, lepers and epileptics, and infinite numbers of monks, brown, grey and black, in sack-shaped frocks and pointed hoods, with shaven crown and cropped beard, emaciated with penance or bloated with gluttony. And all this the painter sees, daily, hourly; it is his standard of humanity, and as such finds its way into every picture. It is the living; but opposite it arises the dead. Let us turn aside from the crowd of the mediæval city, and look at what the workmen have just laid bare, or what the merchant has just brought from Rome or from Greece. Look at this: it is corroded by oxides, battered by ill-usage, stained with earth: it is not a group, not even a whole statue, it has neither head nor arms remaining; it is a mere broken fragment of antique sculpture, —a naked body with a fold or two of drapery; it is not by Phidias nor by Praxiteles, it may not even be Greek; it may be some cheap copy, made for a garden or a bath, in the days of Hadrian. But to the artist of the fifteenth century it is the revelation of a whole world, a world in itself. We can scarcely realize all this; but let us look and reflect, and even we may feel as must have felt the man of the Renaissance in the presence of that mutilated, stained, battered torso. He sees in that broken stump a grandeur of outline, a magnificence of osseous structure, a breadth of muscle and sinew, a smooth, firm covering of flesh, such as he would vainly seek in any of his living models; he sees a delicate and infinite variety of indentures, of projections, of creases following the bend of every limb; he sees, where the surface still exists intact, an elasticity of skin, a buoyancy of hidden life such as all the colours of his palette are unable to imitate; and in this piece of drapery, negligently gathered over the hips or robed upon the arm, he sees a magnificent alternation of large folds and small creases, of straight lines, and broken lines, and curves. He sees all this; but he sees more: the broken torso is, as we have said, not merely a world in itself, but the revelation of a world.

It is the revelation of antique civilization, of the palæstra and the stadium, of the sanctification of the body, of the apotheosis of man, of the religion of life and nature and joy; revealed to the man of the Middle Ages, who has hitherto seen in the untrained, diseased, despised body but a deformed piece of baseness, which his priests tell him belongs to the worms and to Satan; who has been taught that the monk living in solitude and celibacy, filthy, sick, worn out with fastings and bleeding with flagellation, is the nearest approach to divinity; who has seen Divinity itself, pale, emaciated, joyless, hanging bleeding from the cross; and who is for ever reminded that the kingdom of this Divinity is not of this world.

What passes in the mind of that artist? What surprise, what dawning doubts, what sickening fears, what longings and what remorse are not the fruit of this sight of antiquity? Is he to yield or to resist? Is he to forget the saints and Christ and give himself over to Satan and to antiquity? Only one man boldly said Yes. Mantegna abjured his faith, abjured the Middle Ages, abjured all that belonged to his time, and in so doing cast away from him the living art and became the lover, the worshipper of shadows. And only one man turned completely aside from the antique as from the demon, and that man was a saint, Fra Angelico da Fiesoli. And with the antique, Fra Angelico rejected all the other artistic influences and aims of his time, the time not of Giotto or of Orcagna, but of Masaccio, of Uccello, of Polaiuolo and Donatitius. For the mild, meek, angelic monk dreaded the life of his days; dreaded to leave the cloister where the sunshine was tempered and the noise reduced to a mere faint hum, and where the flower-beds were tidy and prim; dreaded to soil or rumple his spotless white robe and his shining black cowl; a spiritual sybarite, shrinking from the sight of the crowd seething in the streets, shrinking from the idea of stripping the rags off the beggar in order to see his tanned and gnarled limbs; shuddering at the thought of seeking for muscles in the dead, cut-open body; fearful of every whiff of life that might mingle with the incense atmosphere of his chapel, of every cry of human passion which might break through the well-ordered sweetness of his chants. No; the Renaissance did not exist for him who lived in a world of diaphanous form, colour, and character; unsubstantial and unruffled, dreaming feebly and sweetly of transparent-cheeked Madonnas with no limbs beneath their robes; of smooth-faced saints with well-combed beard and placid, vacant gaze, seated in well-ordered masses, holy with the purity of inanity; of divine dolls with pallid flaxen locks, floating between heaven and earth, playing upon lute and viol and psaltery; raised to faint visions of angels and blessed, moving noiseless, feelingless, meaningless, across the flowerets of Paradise; of assemblies of saints seated, arrayed in pure pink, and blue and lilac, in an atmosphere of liquid gold, in glory. And thus Fra Angelico worked on, content with the dearly-purchased science of his masters, placid, beatic, effeminate, in an æsthetical paradise of his own, a paradise of sloth and sweetness, a paradise for weak souls, weak hearts, and weak eyes; patiently repeating the same fleshless angels, the same boneless saints, the same bloodless virgins; happy in smoothing the unmixed, unshaded tints of the sky, and earth, and dresses; laying on the gold of the fretted skies, and of the iridescent wings, embroidering robes, instruments of music, haloes, flowers, with threads of gold.... Sweet, simple artist saint, reducing art to something akin to the delicate pearl and silk embroidery of pious nuns, to the exquisite sweetmeat cookery of pious monks; a something too delicately gorgeous, too deliciously insipid for human wear or human food; no, the Renaissance does not exist for thee, either in its study of the truly existing, or in its study of antique beauty.

Mantegna, the learned, the archæological, the pagan, who renounces his times and his faith; and Angelico, the monk, the saint, who shuts and bolts his monastery doors and sprinkles holy water in the face of the antique, the two extremes, are both exceptions. The innumerable artists of the Renaissance remained in hesitation; tried to court both the antique and the modern, to unite the pagan and the Christian—some, like Ghirlandajo, in cold indifference to all but mere form, encrusting marble bacchanals into the walls of the Virgin's paternal house, bringing together, unthinkingly, antique-draped women carrying baskets and noble Stroggi and Ruccellai ladies

[Pg 56]

[Pg 57]

with gloved hands folded over their gold brocaded skirts; others, with cheerful and child-like pleasure in both antique and modern, like Benozzo, crowding together half-naked youths and nymphs treading the grapes and scaling the trellise with Florentine magnificos in plaited skirts and starched collars, among the pines and porticos, the sprawling children, barking dogs, peacocks sunning themselves, and partridges picking up grain, of his Scripture histories; yet others using the antique as mere pageant shows, allegorical mummeries destined to amuse some Duke of Ferrara or Marquis of Mantua, together with hurdle races of Jews, hags, and riderless donkeys.

Little by little the antique amalgamates with the modern; the art born of the Middle Ages absorbs the art born of paganism; but how slowly, and with what fantastic and ludicrous results at first; as when the anatomical sculptor Pollaiuolo gives scenes of naked Roman prize-fighters as martyrdoms of St. Sebastian; or when the pious Perugino (pious at least with his brush) dresses up his sleek, hectic, beardless archangels as Roman warriors, and makes them stand, straddling beatifically on thin little dapper legs, wistfully gazing from beneath their wondrously ornamented helmets on the walls of the Cambio at Perugia; when he masquerades meditative fathers of the Church as Socrates and haggard anchorites as Numa Pompilius; most ludicrous of all, when he attires in scantiest of clinging antique drapery his mild and pensive Madonnas, and, with daintily-pointed toes, places them to throne bashfully on allegorical chariots as Venus or Diana.

Long is the period of amalgamation, and little are the results throughout that long early Renaissance. Mantegna, Piero della Francesca, Melozzo, Ghirlandajo, Filippino, Botticelli, Verrocchio, have none of them shown us the perfect fusion of the two elements whose union is to give us Michel Angelo, Raphael, and all the great perfect artists of the early sixteenth century; the two elements are for ever ill-combined and hostile to each other; the modern vulgarizes the antique, the antique paralyzes the modern. And meanwhile the fifteenth century, the century of study, of conflict, and of confusion, is rapidly drawing to a close; eight or ten more years, and it will be gone. Is the new century to find the antique still dead and the modern still mediæval?

The antique and the modern had met for the first time and as irreconcilable enemies in the cloisters of Pisa; and the modern had triumphed in the great mediæval fresco of the Triumph of Death. By a strange coincidence, by a sublime jest of accident, the antique and the modern were destined to meet again, and this time indissolubly united, in a painting representing the Resurrection. Yes, Signorelli's fresco in Orvieto Cathedral is indeed a resurrection, the resurrection of human beauty after the long death-slumber of the Middle Ages. And the artist would seem to have been dimly conscious of the great allegory he was painting. Here and there are strewn skulls; skeletons stand leering by, as if in remembrance of the ghastly past, and as a token of former death; but magnificent youths are breaking through the crust of the earth, emerging, taking shape and flesh; arising, strong and proud, ready to go forth at the bidding of the Titanic angels who announce from on high with trumpet sound and waving banners that the death of the world has come to an end, and that humanity has arisen once more in the youth and beauty of antiquity.

[Pg 58]

II.

Signorelli's frescoes at Orvieto, at once the latest works of the fifteenth century, and the latest works of an old man nurtured in the traditions of Benozzo Gozzoli and of Piero della Francesca, mark the beginning of the maturity and perfection of Italian art. From them Michel Angelo learns what he could not be taught even by his master Ghirlandajo, the grand and cold realist; he learns, and what he has learned at Orvieto he teaches with doubled force in Rome; and the ceiling of the Sistine Chapel, the superb and heroic nudités, the majestic draperies, the reappearance in the modern art of painting of the spirit and hand of Phidias, give a new impulse and hasten on perfection. When the doors of the chapel are at length opened, Raphael forgets Perugino; Fra Bartolomeo forgets Botticelli; Sodoma forgets Leonardo; the narrower hesitating styles of the fifteenth century are abandoned, as the great example is disseminated throughout Italy; and even the tumult of angels in glory which the Lombard Correggio is to paint in far-off Parma, and the daringly simple Bacchus and Ariadne with which Tintoret will decorate the Ducal palace more than fifty years later, all that is great and bold, all that is a re-incarnation of the spirit of antiquity, all that marks the culmination of Renaissance art, seems due to the impulse of Michel Angelo, and, through him, to the example of Signorelli. From the celestial horseman and bounding avenging angels of Raphael's Heliodorus, to the St. Sebastian of Sodoma, with delicate limbs and exquisite head, rich with tendril-like locks against the brown Umbrian sunset; from the Madonna of Andrea del Sarto seated, with the head and drapery of a Niobe, on the sack of flour in the Annunziata cloister, to the voluptuous goddess, with purple mantle half concealing her body of golden white, who leans against the sculptured fountain in Titian's "Sacred and Profane Love," with the greenish blue sky and hazy light of evening behind her; from the most extreme examples of the most extreme schools of Lombardy and Venetia, to the most intense examples of the remotest schools of Tuscany and Umbria, throughout the art of the early sixteenth century, of those thirty years which were the years of perfection, we see, more or less marked, but always distinct, the union of the living art born of the Middle Ages with the dead art left by antiquity, a union producing life and perfection, the great art of the Renaissance.

[Pg 59]

This much is clear and easy of definition; but what is neither clearly understood nor clearly defined is the nature of this union, the manner in which the antique and the modern did thus amalgamate. It is easy to speak of a vague union of spirit, of the antique idea having permeated the modern; but all this explains but little; art is not a metaphysical figment, and all its phases

and revolutions are concrete, and, so to speak, physically explicable and definable. The union of the antique with the modern meant simply the absorption by the art of the Renaissance of elements of civilization necessary for its perfection, but not existing in the mediæval civilization of the fifteenth century; of elements of civilization which gave what the civilization of the fifteenth century,—which could give colour, perspective, grouping, and landscape,—could never have afforded: the nude, drapery, and gesture.

The naked human body, which the Greeks, had trained, studied and idolized, did not exist in the fifteenth century; in its stead there was only the undressed body, ill-developed, untrained, pinched, and distorted by the garments only just cast off, cramped and bent by sedentary occupations, livid with the plague-spots of the Middle Ages, scarred by the whip-marks of asceticism. This stripped body, unseen and unfit to be seen, unaccustomed to the air and to the eyes of others, shivered and cowered for cold and for shame. The Giottesques ignored its very existence, conceiving humanity as a bodiless creature, with face and hands to express emotion, and just enough malformed legs and feet to be either standing or moving; further, beneath the garments there was nothing. The realists of the fifteenth century tore off the clothes and drew the ugly thing beneath, and brought the corpses from the lazar-houses, and stole them from the gallows, in order to see how bone fitted into bone, and muscle was stretched over muscle. They learned to perfection the anatomy of the human frame, but they could not learn its beauty; they became even reconciled to the ugliness they were accustomed to see, and, with their minds full of antique examples, Verrocchio, Donatello, Pollaiuolo, and Ghirlandajo, the greatest anatomists of the fifteenth century, imitated their coarse and ill-made living models when they imagined that they were imitating antique marbles.

So much for the nude. Drapery, as the ancients understood it in the delicate plaits of Greek chiton and tunic, in the grand folds of Roman toga, the fifteenth century could not show; it knew only the stiff, scanty raiment of the active classes, the shapeless masses of lined cloth of the merchants and magistrates, the prudish and ostentatious starched dress of the women, and the coarse, lumpish garb of the monks.

[Pg 60]

The artist of the fifteenth century knew drapery only as an exotic, an exotic with whose representation the habit of seeing mediæval costume was for ever interfering; on the stripped, unseemly, indecent body he places, with the stiffness of artificiality, drapery such as he has never seen upon any living creature; the result is awkwardness and rigidity. And what attitude, what gesture, can he expect from this stripped and artificially draped model? None, for the model scarce knows how to stand in so unaccustomed a condition of body. The artist must seek for attitude and gesture among his townsfolk, and among them he can find only trivial, awkward, often vulgar movement. They have never been taught how to stand or to move with grace and dignity; the artist must study attitude and gesture in the marketplace or the bull-baiting ground, where Ghirlandajo found his jauntily strutting idlers, and Verrocchio his brutally staggering prize-fighters. Between the constrained attitudinizing of Byzantine and Giottesque tradition, and the imitation of the movements of clodhoppers and ragamuffins, the realist of the fifteenth century would wander hopelessly were it not for the antique. Genius and science are of no avail; the position of Christ in baptism in the paintings of Verrocchio and Ghirlandajo is mean and servile; the movements of the "Thunderstricken" in Signorelli's lunettes is an inconceivable mixture of the brutish, the melodramatic, and the comic; the magnificently drawn youth at the door of the prison in Filippino's "Liberation of St. Peter" is gradually going to sleep and collapsing in a fashion which is truly ignoble.

And the same applies to sculptured figures or to figures standing isolated like statues; no Greek would have ventured upon the swaggering position, with legs apart and elbows out, of Donatello's "St. George," or Perugino's "St. Michael," and a young Athenian who should have assumed the attitude of Verrocchio's "David," with tripping legs and hand clapped on his hip, would have been sent away from school as a saucy little ragamuffin.

Coarse, nude, stiff drapery, vulgar attitude, was all that the fifteenth century could offer to its artists; but antiquity could offer more and very different things—the naked body developed by the most artistic training, drapery the most natural and refined, and attitude and gesture regulated by an education the most careful and artistic; and all these things antiquity gave to the artists of the Renaissance. They did not copy antique statues as living naked men and women, but they corrected the faults of their living models by the example of the statues; they did not copy antique stone draperies in coloured pictures, but they arranged the robes on their models with the antique folds well in their memory; they did not give the gestures of statues to living figures, but they made the living figures move in accordance with those principles of harmony which they had found exemplified in the statues.

[Pg 61]

They did not imitate the antique, they studied it; they obtained through the fragments of antique sculpture a glimpse into the life of antiquity, and that glimpse served to correct the vulgarism and distortion of the mediæval life of the fifteenth century. In the perfection of Italian painting, the union of antique and modern being consummated, it is perhaps difficult to disentangle what really is antique from what is modern; but in the earlier times, when the two elements were still separate, we can see them opposite each other and compare them in the works of the greatest artists. Wherever, in the paintings of the early Renaissance, there is realism, marked by the costume of the times, there is ugliness of form and vulgarity of movement; where there is idealism, marked by imitation of the antique, the nude, and drapery, there is beauty and dignity. We need only compare Filippino's "Scene before the Proconsul" with his "Raising of the King's Son" in the Brancacci Chapel; the grand attitude and draperies of Ghirlandajo's "Zachariah" with

the vulgar dress and movements of the Florentine citizens surrounding him; Benozzo Gozzoli's noble naked figure of Noah with his ungainly, hideously dressed figure of Cosimo de' Medici; Mantegna's exquisite Judith with his preposterous Marquis of Mantua; in short all the purely realistic with all the purely idealistic art of the fifteenth century. We may give one last instance. In Signorelli's Orvieto frescoes there is a figure of a young man, with aquiline features, long crisp hair and strongly developed throat, which reappears unmistakably in all the frescoes, and in some of them twice and thrice in various positions. His naked figure is magnificent, his attitudes splendid, his thrown-back head superb, whether he be slowly and painfully emerging from the earth, staggered and gasping with his newly-infused life, or sinking oppressed on the ground, broken and crushed by the sound of the trumpet of judgment; or whether he be moving forward with ineffable longing towards the angel about to award him the crown of the blessed; in all these positions he is heroically beautiful.

We meet him again, unmistakable, but how different, in the realistic group of the "Thunderstricken,"—the long, lank youth, with spindle-shanks and egg-shaped body, bounding forward, with most grotesque strides, over the uncouth heap of dead bodies, ungainly masses with soles and nostrils uppermost, lying in beast-like confusion. This youth, with something of a harlequin in his jumps and in his ridiculous thin legs and preposterous round body, is evidently the model for the naked demi-gods of the "Resurrection" and the "Paradise:" he is the handsome boy as the fifteenth century gave him to Signorelli; opposite, he is the living youth of the fifteenth century idealized by the study of ancient sculpture; just as the "Thunderstricken" may be some scene of street massacre such as Signorelli may have witnessed at Cortona or Perugia, while the agonies of the "Hell" are the grouped and superb agonies taught by the antique; just as the two archangels of the "Hell," in their armour of Baglioni's heavy cavalry, may represent the modern element, and the same archangels, naked, with magnificent flying draperies, blowing the trumpets of the Resurrection, may show the antique element in Renaissance art. The antique influence was not, indeed, equally strong throughout Italy; it was strongest in the Tuscan school which, seeking for perfection of linear form, found that perfection in the antique; it was weakest in the Lombard and Venetian schools, which sought for what the antique could not give, light and shade and colour; the antique was most efficacious where it was most indispensable, and it was more necessary to a Tuscan, strong only with his charcoal or pencil than to Leonardo da Vinci, who could make an imperfect figure, smiling mysteriously from out of the gloom, more fascinating than the finest drawn Florentine Madonna, and could surround an insignificant childish head with the wondrous sheen and ripple of hair, as with an aureole of poetry; it was also less necessary to Giorgione and Titian, who could hide coarse limbs beneath their draperies of precious ruby, and transfigure, by the liquid gold of their palettes, a peasant woman into a goddess.

[Pg 62]

But even the Lombards, even the Venetians, required the antique influence. They could not perhaps have obtained it direct like the Tuscans; the colourists and masters of light and shade might never have understood the blank lines and faint shadows of the marble: they received the antique influence, strong but modified by the medium through which it had passed, from Mantegna; and the relentless self-sacrifice to antiquity, the self-paralyzation of the great artist, was not without its use; from Venetian Padua, Mantegna influenced the Bellini and Giorgione; from Lombard Mantua, he influenced Leonardo; and Mantegna's influence was that of the antique.

What would have been the art of the Renaissance without the antique? The speculation is vain, for the antique had influenced it, had been goading it on ever since the earliest times; it had been present at its birth, it had affected Giotto through Niccoto Pisano, and Masaccio through Ghiberti; the antique influence cannot be conceived as absent in the history of Italian painting. So far, as a study of the impossible, the speculation respecting the fate of Renaissance art had it not been influenced by the antique would be childishly useless. But lest we forget that this antique influence did exist, lest, grown ungrateful and blind, we refuse it its immense share in producing Michel Angelo, Raphael, and Titian, we may do well to turn to an art born and bred like Italian art, in the Middle Ages; like it, full of strength and power of self-development, but which, unlike Italian art, was not influenced by the antique. This art is the great German art of the early sixteenth century; the art of Martin Schongauer, of Aldegrever, of Graf, of Wohlgemuth, of Pencz, of Zatzinger, of Kranach, and of the great Albrecht Dürer, whom they resemble as Pinturricchio, and Lo Spagna resemble Perugino, as Palma and Pario Bordone resemble Titian. This is an art born in a civilization less perfect indeed than that of Italy, narrower, as Nürnberg is narrower than Florence, but resembling it in habits, dress, religion, above all the main characteristic of being mediæval; and its masters, as great as their Italian contemporaries in all the technicalities of the art, and in absolute honesty of endeavour, may show what the Italian art of the sixteenth century might have been without the antique. Let us therefore open a portfolio of those wonderful minute yet grand engravings of the old Germans. They are for the most part Scriptural scenes or allegories, quite analogous to those of the Italians, but purely realistic, conscious of no world beyond that of an Imperial City of the year 1500. Here we have the whole turn-out, male and female, of a German free town, in the shape of scenes from the lives of the Virgin and saints; here are short fat burghers, with enormous blotchy, bloated faces and little eyes set in fat, their huge stomachs protruding from under their jackets; here are bleary-eyed ladies, tall, thin, wrinkled though not old, with figures like hungry harpies, stalking about in high headgears and stiff gowns, or sitting by the side of lean and stunted pages, singing (with dolorous voice) to lutes; or promenading under trees with long-shanked, high-shouldered gentlemen, with vacant sickly face and long scraggy hairs and beard, their bony elbows sticking out of their slashed doublets. These courtly figures culminate in Dürer's magnificent plate of the wild man of the woods kissing

[Pg 63]

the hideous, leering Jezebel in her brocade and jewels. These aristocratic women are terrible; prudish, malicious, licentious, never modest because they are always ugly. Even the poor Madonnas, seated in front of village hovels or windmills, smile the smile of starved, sickly sempstresses. It is a stunted, poverty-stricken, plague-sick society, this mediæval society of burghers and burghers' wives; the air seems bad and heavy, and the light wanting physically and morally, in these old free towns; there is intellectual sickness as well as bodily in those musty gabled houses; the mediæval spirit blights what revival of healthiness may exist in these commonwealths. And feudalism is outside the gates. There are the brutal, leering men-at-arms, in slashed, puffed doublets and heavy armour, face and dress as unhuman as possible, standing grimacing at the blood spurting from John the Baptist's decapitated trunk, as in Kranach's horrible print, while gaping spectators fill the castle yard; there are the castles high on rocks amidst woods, with miserable villages below, where the Prodigal Son wallows among the swine and the tattered boors tumble about in drunkenness, or rest wearied on their spades. There are the Middle Ages in full force. But had these Germans of the days of Luther really no thought beyond their own times and their own country? Had they really no knowledge of the antique? Not so; they had heard from their learned men, from Willibald Pirckheimer and Ulrich von Hutten, that the world had once been peopled with naked gods and goddesses; nay, the very year perhaps that Raphael handed to the engraver, Marc Antonio, his magnificent drawing of the Judgment of Paris, Lukas Kranach bethought him to represent the story of the good Knight Paris giving the apple to the Lady Venus. So Kranach took up his steady pencil and sharp chisel, and in strong, clear, minute lines of black and white showed us the scene. There, on Mount Ida, with a castellated rock in the distance, the charger of Paris browses beneath some stunted larches; the Trojan knight's helmet, with its monstrous beak and plume, lies on the ground; and near it reclines Paris himself, lazy, in complete armour, with frizzled fashionable beard. To him, all wrinkled and grinning with brutal lust, comes another bearded knight, with wings to his vizored helmet, Sir Mercury, leading the three goddesses, short, fat-cheeked German wenches, housemaids stripped of their clothes, stupid, brazen, indifferent. And Paris is evidently prepared with his choice: he awards the apple to the fattest, for among a half-starved, plague-stricken people like this, the chosen of gods and men must needs be the fattest.

[Pg 64]

No, such pagan scenes are mere burlesques, coarse mummeries, such as may have amused Nürnberg and Augsburg during Shrovetide, when drunken louts figured as Bacchus and sang drinking songs by Hans Sachs. There is no reality in all this; there is no belief in pagan gods. If we would see the haunting divinity of the German Renaissance, we shall find him prying and prowling in nearly every scene of real life; him, the ever present, the king of the Middle Ages, whose triumph we have seen on the cloister wall at Pisa, the lord "Death." His fleshless face peers from behind a bush at Zatzinger's stunted, fever-stricken lady and imbecile gentleman; he sits grinning on a tree in Orso Graf's allegory, while the cynical knights, with haggard, sensual faces, crack dirty jokes with the fat, brutish woman squatted below; he puts his hand into the basket of Dürer's tattered pedlar; he leers hideously at the stirrup of Dürer's armed and stalwart knight. No gods of youth and Nature; no Hercules, no Hermes, no Venus, have invaded his German territories, as they invaded even his own palace, the burial-ground at Pisa; the antique has not perverted Dürer and his fellows, as it perverted Masaccio, and Signorelli, and Mantegna, from the mediæval worship of Death.

The Italians had seen the antique and had let themselves be seduced by it, despite their civilization and their religion. Let us only rejoice thereat. There are indeed some, and among them the great English critic, who is irrefutable when he is a poet and irrational when he becomes a philosopher;—there are some who tell us that in its union with antique art, the art of the followers of Giotto embraced death, and rotted away ever after; there are others, more moderate but less logical, who would teach us that in uniting with the antique, the mediæval art of the fifteenth century purified and sanctified the beautiful but evil child of Paganism, that the goddess of Scopas and the athlete of Polyclète were raised to a higher sphere when Raphael changed the one into a Madonna, and Michel Angelo metamorphosed the other into a prophet. But both schools of criticism are wrong. Every civilization has its inherent evil; antiquity had its' inherent evils, as the Middle Ages had theirs; antiquity may have bequeathed to the Renaissance the bad with the good, as the Middle Ages had bequeathed to the Renaissance the good with the bad. But the art of antiquity was not the evil, it was the good of antiquity; it was born of its strength and its purity only and it was the incarnation of its noblest qualities. It could not be purified, because it was spotless; it could not be sanctified because it was holy. It could gain nothing from the art of the Middle Ages, alternately strong in brutal reality, and languid in mystic inanity; the men of the Renaissance could, if they influenced it at all, influence the antique only for evil; they belonged to an inferior artistic civilization, and if we conscientiously seek for the spiritual improvements brought by them into antique types, we shall see that they consist in spoiling their perfect proportions, in making necks longer and muscles more prominent, in rendering more or less flaccid, or meagre, or coarse, the grand and delicate forms of antique art. And when we have examined into this purified art of the Renaissance, when we have compared coolly and equitably, we may perhaps confess that, while the Renaissance added immense wealth of beauty in colour, perspective, and grouping, it took away something of the perfection of simple lines and modest light and shade of the antique; we may admit to ourselves that the grandest saint by Raphael is meagre and stunted, and the noblest Virgin by Titian is overblown and sensual by the side of the demi-gods and amazons of antique sculpture.

[Pg 65]

The antique perfected the art of the Renaissance, it did not corrupt it. The art of the Renaissance fell indeed into shameful degradation soon after the period of its triumphant union with the antique; and Raphael's grand gods and goddesses, his exquisite Eros and radiant Psyche of the

Farnesina, are indeed succeeded but too soon by the Olympus of Giulio Romano, an Olympus of harlots and acrobats, who smirk and mouth and wriggle and sprawl ignobly on the walls and ceilings of the dismantled palace which crumbles away among the stunted willows, the stagnant pools, and rank grass of the marshes of Mantua. But this is no more the fault of antiquity than it is the fault of the Middle Ages; it is the fault of that great principle of life and of change which makes all things organic, be they physical or intellectual, germinate, grow, attain maturity, and then fade, wither, and rot. The dead art of antiquity could never have brought the art of the Renaissance to an untimely end; the art of the Renaissance decayed because it was mature, and died because it had lived.

VERNON LEE.

[Pg 66]

THE SOCIAL PHILOSOPHY AND RELIGION OF COMTE.

IV.

In my last article I considered the subjective synthesis of Comte, or in other words, his attempt to systematize human knowledge in relation to the moral life of man. For it is his view, as we have seen, that science can never yield its highest fruit to man unless it be systematized—*i.e.*, unless its different parts be connected together and put in their true place as parts of one whole. Scattered lights give no illumination; it is the *esprit d'ensemble*, the general idea in which our knowledge begins and ends, that ultimately determines the scientific value of each special branch of knowledge. But while synthesis is necessary, it is not necessary, according to Comte, that the synthesis should be objective. The error of mankind in the past has been that they supposed themselves able to ascertain the real or objective principle, which gives unity to the world, and able, therefore, to make their system of knowledge an ideal repetition of the system of things without them. Such a system, however, is entirely beyond our reach. The conditions of our lot, and the weakness of our intelligence, make it impossible for us to tell what is the real principle of unity in the world, or even whether such a principle exists. The attempts to discover it, made by Theology and Metaphysics, have been nothing more than elaborate anthropomorphisms, in which men gave to the unknown and unknowable reality, a form which was borrowed from their own. They saw in the clouds about them an exaggerated and distorted reflection of themselves, and regarded this Brocken spectre as the controlling power whose activity was the source and explanation of everything. Positivism, on the other hand, arises whenever men learn to recognize the nature of this illusion, and to confine their ambition within that which is really the limit of their intelligence. All that we can know is the resemblances and successions of phenomena, and not the things in themselves that are their causes; and if we seek to find a principle of unity for these phenomena, we must find it within and not without. We must organize knowledge with reference to our own wants, rather than with reference to the nature of things. We must regard everything as a means to an end, which is determined by some inner principle in ourselves—not as if we supposed that the world and all that is in it were made for us, or found its centre in us—but simply because this is the only point of view from which we can systematize knowledge, as it is indeed the only point of view from which we need care to systematize it.

[Pg 67]

It may be asked why system is necessary at all, why we should not be content with a fragmentary consciousness of the world, without attempting to gather the dispersed lights of science to one central principle. To critics like J. S. Mill, Comte's effort after system seems to be the result of an "original mental twist very common in French thinkers," of "an inordinate desire of unity." "That all perfection consists in unity, Comte apparently considers to be a maxim which no sane man thinks of questioning: it never seems to enter into his conceptions that any one could object *ad initio*, and ask, Why this universal systematizing, systematizing, systematizing? Why is it necessary that all human life should point but to one object, and be cultivated into a system of means to a single end?"^[26] To this Mr. Bridges answers that unity in Comte's sense is "the first and most obvious condition which all moral and religious renovators, of whatever time or country, have by the very nature of their office set themselves to fulfil."^[27] In other words, all moral and spiritual life depends upon the harmony of the individual with himself and with the world. A divided life is a life of weakness and misery, nor can life be divided intellectually, without being, or ultimately becoming, divided morally. Such unity, indeed, does not exclude—and in a being like man who is in course of development cannot altogether exclude—difference and even conflict. In the most steadily growing intellectual life there are pauses of difficulty and doubt; in the most continuous moral progress there are conflicts with self and others. But such doubts and difficulties will not greatly weaken or disturb us, so long as they are partial, so long as they do not affect the central principles of thought and action, so long as there is still some fixed faith which reaches beyond the disturbance, some certitude which is untouched by the doubt. If, however, we once lose the consciousness that there is any such principle, or if we try to rest on a principle which we at the same time feel to be inadequate, our spiritual life, in losing its unity or harmony with itself, must at the same time lose its purity and energy. It must become fitful and uncertain, the sport of accidental influences and tendencies; it must lower its moral and intellectual aims. This, in Comte's view, is what we have seen in the past. The decay of the old faiths, and of the objective synthesis based upon them, has emancipated us from many illusions, but it has, as it were, taken the inspiration out of our lives. It has made knowledge a thing for specialists who have lost the sense of totality, the sense of the value of their particular studies in

[Pg 68]

relation to the whole; and it has made action feeble and wayward by depriving men of the conviction that there is any great central aim to be achieved by it. And these results would have been still more obvious, were it not that men are so slow in realizing what is involved in the change of their beliefs were it not that the habits and sympathies developed by a creed continue to exist long after the creed itself has disappeared. In the long run, however, the change of man's intellectual attitude to the world must bring with it a change of his whole life. As the creed which reconciled him to the world and bound him to his fellows ceases to affect him, he must be thrown back upon his own mere individuality, unless he can find another creed of equal or greater power to inspire and direct his life. And mere individualism is nothing, but anarchy. That this is so, was not indeed manifest to those who first expressed the individualistic principle: on the contrary, they seemed to themselves to have, in the assertion of individual right, not only an instrument for destroying the old faith and the old social order, but also the principle of a better faith, and the means of reconstructing a better order. But to us who have outlived the period when it could be supposed that the destruction of old, involves in itself the construction of new, forms of life and thought, it cannot but be obvious that the principles of private judgment and individual liberty are nothing more than negations. For as the real problem of our intellectual life is how to rise to a judgment which is more than private judgment, so the real problem of our practical life is how to realize a liberty that is more than individual license. It is in this sense that Comte says that the last three centuries have been a period of the insurrection of the intellect against the heart, a phrase by which he means to indicate at once the gain and the loss of the revolutionary movement; its gain, in so far as it emancipated the intelligence from superstitious illusions, and its loss, in so far as it destroyed the faith which was the bond of social union, without substituting any other faith in its room. At the same time, the expression points to a peculiarity of Comte's Psychology, which affects his whole view of the history, and especially of the religious history, of man; and it is therefore necessary to subject it to a careful examination.

Is it possible for the intellect to be in insurrection against the heart? In a sense already indicated this is possible. It is possible, in short, that the moral and intellectual spirit of a belief may still control the life of one who, so far as his explicit consciousness is concerned, has renounced it. Rooted as the individual is in a wider life than his own, it is often but a small part of himself that he can bring to distinct consciousness. Further, so little are most men accustomed to self-analysis; that they are seldom aware what it is that constitutes the inspiring power of their beliefs. Generally, at least in the first instance, they take their creed in gross, without distinguishing between essential and unessential elements. They confuse, in one general consecration of reverence, its primary principles, and the local and temporary accidents of the form in which it was first presented to them, and they are as ready to accept battle *à l'outrance* for some useless outwork as for the citadel itself. And, for the same reason, they are ready to think that the citadel is lost when the outwork is taken; to suppose, *e.g.*, that the spiritual nature of man is a fiction if he was not directly made by God out of the dust of the earth, or that the Christian view of life has ceased to be true if a doubt can be thrown on the possibility of proving miracles. Yet however little the individual may be able to separate the particulars which are assailed from the universal with which they are accidentally connected, his whole nature must rebel against the sacrifice which logical consistency seems in such a case to demand from him. It is a painful experience when the first break is made in the implicit unity of early faith, and it is painful just in proportion to the depth of the spiritual consciousness which that faith has produced in the individual. Unable to separate that which he is obliged to doubt from that in which lies the principle of his moral, and, even of his intellectual, life, he is "in a strait betwixt two;" and no course seems to be open to him which does not involve the surrender, either of his intellectual honesty, or of that higher consciousness which alone "makes life worth living." Such a crisis is commonly described as a division between the heart and the head, for in it the articulate or conscious logic is on the side of disbelief, and the resisting conviction generally takes the form of a feeling, an impulse, an intuition, which the individual has for himself, but which he is unable to communicate in the same force to another. And, as such feelings and intuitions of the individual are necessarily subject to continual variation of intensity and clearness, so the struggle between doubt and faith may be long and difficult, the objections, which at one time seem as nothing, at another time appearing to be almost irresistible. Not seldom the result is a broken life, in which youth is given to revolt, and the rest of existence to a faith which vainly strives to be implicit. There is, indeed, no final and satisfactory issue from such an endless internal debate and conflict, until the "heart" has learned to speak the language of the "head,"—*i.e.*, until the permanent principles which underlay and gave strength to faith have been brought into the light of distinct consciousness, and until it has been discovered how to separate them from the accidents, with which at first they were necessarily identified. The hard labour of distinguishing, in the traditions of the past, between the germinative principles, out of which the future must spring, and those external forms and adjuncts, which every day is making more incredible, must be undertaken by any one who would restore the broken unity of man's life. We begin our existence under the shadow and influence of a faith which is given to us, as it were; in our sleep; but in no age, and in this age less than any other, can man possess a spiritual life as a gift from the past without reconquering it for himself.

In this sense, then, we can understand how Comte might speak of an insurrection of the intelligence against the heart, which must be quelled ere the normal state of humanity could be restored; for this would be only another way of saying that, in the modern conflict of faith and reason, the substantial truth, or at least the most important truth, had, up to Comte's own time, been on the side of the former. In this view, the deep unwillingness of those nourished in the Christian or Catholic faith to yield to the logical battery of the Encyclopædists was not merely the

[Pg 69]

[Pg 70]

result of an obscurantist hatred of light; it was also in great part due to a more or less definite sense of the moral, if not the intellectual, weakness of the principles which the Encyclopædists maintained. For, while the insurrection was justified in so far as it asserted the claims of the special sciences, it was to be condemned in so far as it involved the denial of all synthesis whatever, and also in so far as it was blind to the elements of truth in the imperfect synthesis of the past. It thus tended to destroy the spirit of totality and the sense of duty (*l'esprit d'ensemble et le sentiment du devoir*).^[28] It practically denied the existence of any universal principle which could connect the different parts of knowledge with each other, of any general aim which could give unity to the life of man. Its analytic spirit was fatal, not only to the fictions of theology, but also to that growing consciousness of the solidarity of men of which theology had been the accidental embodiment. The reluctance of religious men to admit the claims of what appeared to be, and, indeed, to a certain extent was, light, was thus due to a more or less distinct perception that their own creed, amid all its partial errors, contained a central truth more important than all the partial truths of science. In clinging to the past they were preserving the germ of the future, and the final victory of science could not come until this germ had been disengaged from the husk of superstition under which it was hidden. Till that was done, the logic of the heart in clinging to its superstitions was better than the logic of the head in rebelling against them. In other words, the implicit reason of faith was wiser than the explicit reason of science.

But this is not all that Comte means. For him the appeal to the heart is not merely the appeal to feelings and intuitions, which are the result of the past development of human intelligence, and especially of the long discipline by which the Christian Church has moulded the modern spirit; it is an appeal to the altruistic affections as original or "innate" tendencies in man which are altogether independent of his intelligence. It is not that the reason of man often speaks through his feelings, but that feeling and reason have in themselves different, and even it may be opposite, voices. In this sense, the attempt has often been made in modern times to stop the invasions of critical reflection by setting up the heart as an independent authority. From the Lutheran theologian who said, "*Pectus theologum facit*," down to Mr. Tennyson who declares that whenever he heard "the voice—Believe no more,"

[Pg 71]

"A warmth within the breast would melt
The freezing reason's colder part,
And like a man in wrath, the heart
Stood up and answered, 'I have felt:'"

appeals have constantly been made to the feelings to resist the intrusion of doubt. Such appeals, however, cannot be regarded as otherwise than provisional and self-defensive. "The heart knoweth its own bitterness, and a stranger doth not intermeddle with its joy;" but just for that reason it has no general content or independent authority of its own. Whether the "I feel it" mean little or much, depends upon the individual who utters it. It may be the concentrated expression of a long life of culture and discipline, or it may be the loud but empty voice of untrained passion and prejudice. The "unproved assertions of the wise and experienced," as Aristotle tells us, have great value, especially in ethical matters; but it is not because they are unproved assertions, but because we otherwise know that the speakers are wise and experienced. To appeal to the heart in general, without saying "whose heart," either means nothing, or it means an appeal to the natural man—*i.e.*, man as he is before he has been sophisticated by culture and experience; but of the natural man, in this sense, nothing can be said. The further we go back in the history of the individual or the race the more imperfect does their utterance or manifestation become; and when we reach the beginning, we find that there is no manifestation or utterance at all. The natural man of Rousseau was simply an ideal creation, inspired with that intense and even morbid consciousness of self, and that fixed resolve to submit to no external law, which were characteristic of Rousseau himself, and which in him were the last product and quintessence of the individualism of the eighteenth century. The simplicity of this ideal figure was not the first simplicity of nature, but the simplicity of a spirit which has returned upon itself and asserted itself against the world; a kind of simplicity which never existed, at least in the same form, before the great Protestant revolt. The unhistorical character of this idea becomes doubly evident when we find that, as time goes on, and the spirit of the age alters, the qualities of the natural man are also changed. To St. Simon and Fourier, as to Rousseau, man is good by nature, and it is bad institutions or bad external influences which are the source of all the ills that flesh is heir to. But while with the latter the natural man is a solitary, whose chief good lies in the preservation of his independence, with the former he is essentially social, and what is wanted for his perfection and happiness is only to contrive an outward organization in which his social sympathies shall have free play. Comte, as we might expect, rises above these imperfect theories, in so far as he refuses to attribute all the evils of humanity to its external circumstances; but he does not get rid of the essential error which was common to them all, the error of seeking for the explanation of the higher life of humanity in the feelings of the natural man—feelings which are prior to, and independent of, the exercise of his reason, and which supply all the possible motives for that exercise. There are, in his view, two sets of "innate" feelings or desires, between which man's life is divided—the egoistic and the altruistic tendencies, each separate from the others as well as from the intelligence, and having its "organ" in a separate part of the brain. The egoistic feelings at first exist in man in far greater strength than the altruistic; but by the reaction of circumstances, and the influence of men upon each other, the latter have in the past gradually attained to greater power; and it is the ideal of the future to make their victory complete. Meanwhile, the intelligence is necessarily the instrument of desire, and its highest good is to be the instrument of altruistic as opposed to egoistic desire. For it has at best only a choice of

[Pg 72]

masters, and the emancipation of the intelligence from the heart could mean only its becoming a slave of personal vanity. Comte's appeal, therefore, is still to the natural man, or rather to one element in him, which, however, as he acknowledges, is never so weak as it is in man's earliest or most natural state.

The psychology implied in this theory is substantially that which found its fullest expression in Hume's Treatise on Human Nature. Hume, with that tendency to bring things to a distinct issue which is his best characteristic, declares boldly that "reason is, and ought to be, the slave of the passions, and can never pretend to any other office than to serve and obey them." The passions or desires are tendencies of a definite character which exist in man from the first; the awaking intelligence cannot add to their number, or essentially change their nature. It can only take account of what they are, and calculate how best to satisfy them. "We speak not strictly and philosophically when we talk of the combat of reason and passion," for reason in itself determines the true and false, but it sets nothing before us as an end to be pursued and avoided. It does not constitute or transform the desires, which are given altogether apart from it, and the will is but the strongest desire. When we say that reason controls the passions what we mean is simply that a strong but calm tendency of our nature, which has reference to some remote object, overcomes some violent impulse towards a present delight; but for intelligence, in the strict sense of the word, to war with passion is a simple impossibility.

The modifications which Comte makes in this view of motive are comparatively trifling. He does not, indeed, like Hume, call reason the slave of the passions; rather he says that "*l'esprit doit être le ministre du cœur, mais jamais son esclave*;" but this change of language does not involve any important modification of Hume's theory. The intelligence has to give to the heart all kinds of information about the objects through which it may find satisfaction, but after all the end itself has to be determined solely by feeling and desire. In Comte's language the intellect is a "slave," when theology makes it acknowledge the existence of supernatural beings who are agreeable to our desires, but who have no reality as objects of experience; it is a "master," when it pursues its inquiries into the phenomena of the objective world, at the bidding of an errant curiosity, without reference to the well-being of man; it is in its true place as a "servant" when it studies the objective world freely, but only with reference to the end fixed for it by the affections. "*L'univers doit être étudié non pour lui-même, mais pour l'homme, ou plutôt pour l'humanité*;" and this, Comte thinks, will not be done if the intelligence be left to itself, but only if it be made subordinate to the heart. To say, therefore, that the intelligence is not to be a slave but a servant, implies merely that it is to be left free to collect information about the means of satisfying the desires, without having its judgment anticipated by the imagination or the heart; but that, on the other hand, it must keep strictly to its position as an instrument to an end out of itself. For if it once emancipates itself from the yoke of feeling, it soon becomes altogether lawless, and disperses its efforts in every direction in the satisfaction of a vain curiosity. The intelligence, as the scholastic theologians said, is in itself, or when left to itself, a source of anarchy and confusion; it must be, not indeed the *serva*, but the *ancilla fidei*, or it defeats its own ends. The intellectual life, as such, is an unsocial, even a selfish existence; for, as reason is guided by no definite objective aim derived from itself, it must find its real motive in the satisfaction of personal vanity and self-conceit, whenever it is not subjected to the yoke of the altruistic affections.

[Pg 73]

This theory (which, as we shall see, underlies Comte's whole conception of history) suggests two questions. It leads us to ask, in the first place, whether the tendencies of the intellectual life are thus dispersive and opposed to the social tendencies? and, secondly, whether the social tendencies in the form which they take with man, are not necessarily determined to be what they are by his intelligence? The former question really resolves itself into another: Is the intelligence of man a mere formal power of apprehending what is presented to it from without, so that when it is left to itself it must lose itself in the infinite multiplicity of individual objects in the external world? or does it carry with it any synthetic principle, any idea of the whole, to which it necessarily and inevitably seeks to bring back the difference of things? Against Comte's assertion that the natural tendency of the intelligence is to lose itself in difference without end, we might quote the well-known saying of Bacon, that the tendency of the "*intellectus sibi permissus*" is rather towards a premature synthesis. "*Intellectus humanus ex proprietate sua facile supponit majorem ordinem et æqualitatem in rebus quam invenit*." Surely, if we may speak of tendencies of the intellectual life as separated from the life of feeling, the tendency to unity and the universal belongs to it quite as much as the tendency to difference and the particular; just as in the life of feeling the tendency to isolation and self-assertion against others is combined with the tendency to society and union with others. From the first moment of intellectual life the world is to us a unity; *subjectively* a unity, as all its varied phenomena are gathered up in the consciousness of one self, and *objectively* a unity, as every object and event is definitely placed in relation to the other objects and events in one space and one time. The development of knowledge is, no doubt, the continual detection of new differences and distinctions in things, but the phenomena which are distinguished from other phenomena are at the same time put in relation to them. Nor can the intelligence find complete satisfaction until this relation is discovered to be necessary, and thus difference passes into unity again. Individual minds, indeed, may be more of the Aristotelian, or more of the Platonist, order, may tend more to divide what at first is presented as unity, or to unite what at first is presented as difference. But it is absurd to talk of either tendency as belonging to the intelligence in itself, since it is utterly beyond, or rather beneath, the powers of thought to conceive either of an undifferentiated unity, or of a chaos of differences without some kind of relation. Descending to particulars, we may bring Comte as a witness against himself; for while he declares that the sciences which deal with the

[Pg 74]

inorganic world are mainly analytic in their tendencies, he at the same time maintains that the sciences of Biology and, still more, of Sociology and Morals, are synthetic, since they deal with objects in which the whole is not a mere aggregation or resultant of the parts, but in which rather the parts can be understood only in and through the whole. Hence it would seem that the dispersive tendencies of science are confined to lower steps of the scientific scale; and that the final science (as was shown more particularly in a previous article) admits and necessitates a synthesis, which is not merely subjective, but also objective. For Comte does not hold that we are to regard other men merely as means, or to seek to understand them only so far as is necessary for the gratification of some desire in ourselves as individuals. We are, on the contrary, to seek to know man in and for himself; and when we do so know him, we find that he is essentially social, and that the individual, as such, is a mere "fiction of the metaphysicians." Here, again, therefore, we find that Comte's system ends in a compromise between opposite tendencies of thought. His subjective synthesis proved after all to be objective, at least so far as mankind were concerned; and in like manner his opposition of the intellect to the heart turns out to be only partial; for when the intelligence is directed to psychology and sociology, it gives us an idea of humanity, according to which all men are "members one of another." The warfare of the heart and the intelligence thus resolves itself into another expression of that dualism between the world and man, which we found to be an essential characteristic of Comte's system.

[Pg 75]

The second question—whether the altruistic affections of man do not imply, or are not necessarily connected with, the development of his reason or self-consciousness—is even more important. Comte, like Hume, took all the desires, higher and lower, as tendencies given apart from the reason, which can only devise the means of satisfying them, and is, therefore, necessarily their servant. Reason itself on this view does not essentially affect the character of those tendencies which it obeys. "*Cupiditas est appetitus cum ejusdem conscientia*," said Spinoza, and he then went on to speak as if the "*conscientia*" made no change in the character of the "*appetitus*." But if we think of appetites or desires—some of them tending to the good of the individual, others to the good of the species—as existing in an animal which is not conscious of a self, these appetites will neither be selfish nor unselfish in the sense in which we apply these terms to man. Where there is no *ego* there can be no *alter-ego*, and therefore neither egoism nor altruism. The idea of the self as a permanent unity to which all the different tendencies are referred, and the rise in consequence of a new desire of pleasure, distinct from the desires of particular objects, are essential to egoism. The idea of an *alter-ego*, *i.e.*, of a community with others which makes their interests our own, and hence the rise of a love for them,—which is not merely disinterested as the animal appetites are disinterested, because they tend directly to their objects without any thought of self, but disinterested in the sense that the thought of self is conquered or absorbed, is essential to altruism. Each of these tendencies may in its matter, or rather in its first matter, coincide with the appetites; viewed from the outside, they may seem to be nothing higher than hunger or thirst, or sexual or parental impulse, but their form is different. They are changed as by a chemical solvent, which dissolves and renews them; nay, as by a new principle of life, whose first transformation of them is nothing but the beginning of a series of transformations both of their matter and their form; so that, in the end, the simple direct tendency to an object—the uneasiness which sought its cure without reflection either upon itself or upon anything else—becomes changed, on the one side, into a gigantic ambition and greed, which would make the whole world tributary to the lust of the individual, and, on the other, into a love of humanity in which self-love is altogether transcended or absorbed. Neither of these, however, nor any lower form of either, is in such wise *external* to reason, that we can talk of them as determining it to an end which is not its own. Both are simply the expression in feeling of that essential opposition of the self to the not self, and at the same time that essential unity of the self with the not self, which are the two opposite, but complementary, aspects of the life of reason. And the progressive triumph of altruism over egoism, which constitutes the moral significance of history, is only the result of the fact that an individual, who is also a conscious self, cannot find his happiness in his own individual life, but only in the life of the whole to which he belongs. A selfish life is for him a contradiction. It is a life in which he is at war with himself as well as with others, for it is the life of a being who, though essentially social, tries to find satisfaction in a personal or individual good. The "intelligence" and the "heart" equally condemn such a life; it is not only a crime but a blunder. For a spiritual being as such is one who can only save his life by losing it in a wider life, one who must die to himself in order that he may live. In the progress of man's spirit, therefore, there is no necessary or possible schism between the two parts of his being; but, on the contrary, the development of each is implied in the development of the other. It is the more comprehensive idea, as well as the higher social purpose, which always triumphs; and if what is called intellectual culture sometimes seems to have the worse, it is because it is a superficial or formal culture, and does not really represent the most comprehensive idea.

[Pg 76]

This leads us to observe that the opposition of the heart to the intelligence is Comte's key to the whole history of the past, especially in relation to religion. Theology is to him a system growing out of a natural, though partially erroneous, hypothesis, a hypothesis which in its first appearance was well suited to excite the nascent intelligence and satisfy the primary affections of man, but which, in its further development, tended to secure moral and social ends at the expense of truth, and became more and more irrational as it became more and more useful. Fetichism, the first religion, was the spontaneous result of man's primitive tendency to exaggerate the likeness of all things to himself. It is "less distant from Positivity" than any other sort of theology,^[29] for its error is only that it supposes the existence of life wherever it finds activity—an error which can "easily be brought to the test of verification" and corrected. "We can show it to be an error, and so get rid of it." But Polytheism, seeking for greater generality, refers

phenomena to beings who are not identified with them, to "indirect wills belonging to beings purely imaginary," whose "existence can no more be decisively disproved than it can be demonstrated." Further, Polytheism extended to the order of man's life that kind of explanation which Fetichism necessarily confined to nature, because the latter sought to explain everything by man, and never thought of man himself as requiring explanation. But this, while it had the advantage of bringing human life within the domain of speculation, at the same time reduced theology into a palpable instance of reasoning in a circle. For "humanity cannot legitimately be included in the synthesis of causes, from the very fact that its type is found in man."^[30] Last of all came Monotheism, concentrating still further the theological explanation of the universe, but rendering it still more incoherent and irrational, for "the conception of a single God involves a type of absolute perfection complete in each of the three aspects of human nature, affection, thought, and action. Now such a conception unavoidably contradicts itself, for either this all-powerful Being must be inferior to ourselves, morally or intellectually, or else the world which he created must be free from those radical imperfections which, in spite of Monotheistic sophistry, have been always but too evident. And even were this second alternative admissible, there would remain a yet deeper inconsistency. Man's moral and mental faculties have for their object to subserve practical necessities, but an omnipotent Being can have no occasion either for wisdom or for goodness."^[31]

[Pg 77]

What reconciles mankind, and especially the leaders of mankind, to these intellectually unsatisfactory conceptions of God, is their practical value in extending and strengthening the social bond. Polytheism was superior to Fetichism, because it lent itself to the formation of that wider community, which we call the State, whereas Fetichism tended rather to confine the sympathies of men to the narrower limits of the family. And Monotheism was the necessary basis of that still wider society which binds men to each other simply as men, and apart from any special ties of blood or language. This at least was the case so long as the truth of the unity of humanity had not yet assumed a scientific form, and therefore still needed an external support. But when the sciences of sociology and morals arise, this external scaffolding ceases to be necessary, and must even become injurious, as, indeed, Theology was from the first imperfectly adapted to the social end it was made to subserve.

This last point deserves special attention. According to Comte, Theology, and above all Monotheistic Theology, is a system whose direct influence is altogether unfavourable to the social tendencies, although indirectly, by the course of history, and through the wise modifications to which it has been subjected by the leaders and teachers of mankind, it has become the main instrument in developing altruism. The increasing generality of theological belief, indeed, was a necessary condition of the establishment of social unity; but, by directing the eyes of men not to themselves, but to supernatural beings, by making the event of life turn on the favour or disfavour of such beings, rather than on the social action and reaction of men upon each other, and by reducing this world into a secondary position, so that its concerns were subordinated to those of another world, Theology tended to dissolve rather than to knit closer the bonds of society. The relation of the individual to God isolated him from his fellows. Especially was this the case with the Christian form of Monotheism, with its tremendous future rewards and penalties, and the direct relation which it established between the soul of the individual and the infinite Being. "The immediate effect of putting personal salvation in the foremost place was to create an unparalleled selfishness, a selfishness rendering all social influences nugatory, and thus tending to dissolve public life."^[32] "The Christian type of life was never fully realized except by the hermits of the Thebaid," who, "by narrowing their wants to the lowest standard, were able to concentrate their thoughts without remorse or distraction on the attainment of salvation."^[33] What else, indeed, but egoism could be awakened by the worship of a God who is himself the supreme type of egoism? For "the desires of an omnipotent Being, being gratified as soon as formed, can consist in nothing but pure caprices. There can be no appreciable motive either from within or from without. And above all, these pure caprices must of necessity be purely personal; so that the metaphysical formula, To live in self for self, would be alike applicable to the two extreme grades of the vital scale. The type of divinity thus approximates to the lowest stage of animality, the only shape in which life is purely individual, because it is reduced to the one function of nutrition."^[34] The natural result of such a religion was, therefore, to discourage the altruistic affections, and, indeed, Monotheism has systematically denied that such affections form part of the nature of man.

[Pg 78]

The alchemy which, according to Comte, turned this poison into an elixir vitæ, was found in the altruistic affections of the teachers of mankind, which led them to limit and modify the doctrine they taught, so as to subserve man's moral improvement. This, however, would not have been sufficient, if these teachers had not at an early period ceased to be a theocracy, or, in other words, if the practical government of mankind had not been wrested from their hand by the military classes. By this change, which contained in itself the germ of the separation of the Church from the State, of theory from practice, of counsel from command, the priests, prophets, or philosophers, who were the intellectual leaders of men, were reduced to that position of subordination in which alone they can concentrate their attention upon their proper work. For the influences of the intellect, like those of the affections, must be indirect if they are to be pure. "No power, especially if it be theological, cares to modify the will, unless it finds itself powerless to control action."^[35] But when the theoretic class were subordinated to the practical class, they became the natural allies of the women, and, like them, had to substitute counsel for command. At first, indeed, their subjection was too absolute, for the military aristocracies of Greece and

Rome did not leave to the priesthood sufficient independence, or at least sufficient authority, to permit even of counsel. But with the rise of Catholic Monotheism, supported as it was by a new revelation based upon an incarnation of God, the separation of Church and State was definitely established, and the intellectual life was put in its proper relation to the life of action.

[Pg 79]

The consequence is that the theological priesthood have continually sought to counteract the natural influences of their theological doctrines by making additions which were inconsistent with its "absolute" principle, but which rendered it better fitted for the purpose of binding men together. This was especially the case under Monotheism, where, as we have seen, such counteraction was most necessary. From this source arose a series of supplementary doctrines, generally tending to connect God with man, and men with each other. St. Paul, "the real founder of Christianity," took the first step in reducing Monotheism into a shape in which it could act as an "organic" doctrine, and his successors followed steadily in the same path. If the omnipotence of God raised him above all human sympathy, and tended to destroy human sympathy in his worshippers, the doctrines of the Trinity and the Incarnation again brought him near to them, and taught them to reverence a humanity which was thus raised into unity with God. In the Feast of the Eucharist all men celebrated and enjoyed their unity with this exalted and deified humanity. The same influence, in its further development, led to the adoration of the saints, and above all of the Virgin Mother, in whom Christian devotion really worshipped humanity, in its simplest and tenderest affections. Finally, if benevolent sympathies were denied to nature, St. Paul found a place for them by attributing them to grace, "which Thomas à Kempis admirably defines as the equivalent of love—*gratia sive dilectio*—divine inspiration being substituted for human impulse."^[36] And the struggle between egoism and altruism was expressed in the doctrines of the Fall and Redemption of mankind.^[37] Thus the social passion, which, according to the theory, could not be found in humanity, was conceived to flow from a divine influence, and became ennobled, at least as a means of salvation, in the eyes of those who would otherwise have suppressed it. At the same time, as Comte also contends, these additions or corrections of the original doctrine were inconsistent or imperfect in themselves, and inadequate to the social purpose for which they were destined; and they naturally disappeared whenever, by the emancipation of the intelligence, the immense egoism, which Monotheism consecrated in God and favoured in man, was let loose from the bonds in which the Church had confined it. Protestantism was the first indication of this change; for Protestantism is but an organized anarchy, in which the only elements of order are derived from an instinctive conservatism, clinging to the fragments of a past doctrinal system, which, in principle, has been abandoned. It contains no organic elements of its own—no positive contribution to the progressive life of humanity; it is simply the first imperfect result of that metaphysical individualism which, in its ultimate form, freed from all the limits of the Catholic system, expressed itself theoretically in Rousseau and Voltaire, and practically in the French Revolution. The hope of mankind, however, lies in the new synthesis of Positivism, which alone can give due value to the innate altruistic sympathies of man, and which therefore alone can place on a permanent scientific basis that social order which the mediæval Church attempted in vain to found on the essentially egoistic and anarchic doctrine of Monotheism.

[Pg 80]

The fundamental conception, then, which underlies Comte's view of progress is, that every past religion, with the partial exception of Fetichism, has been an amalgam of two radically inconsistent elements, one of which only was due to the theological principle itself; while the other was due, partly to the practical instinct of its priests, which led them to modify the logical results of that principle in conformity with the social wants of man; and partly also to their subordinate position, which obliged them to use the spiritual means of conviction and persuasion instead of the ruder weapons of material force. To criticise fully this position would be to re-write Comte's history of religion. It will be sufficient here to point out that his view of modern history begins in a false interpretation of Christianity, and ends in an equally false interpretation of the Protestant Reformation.

Christianity from its origin has two aspects or elements; and if we compare it with earlier religions, we may call these its Pantheistic and its Monotheistic elements. But these elements are not, as Comte asserts, joined together by a mere external necessity. They are necessarily connected in the inner logic of the system; nor can we regard one of them as more or less essential than the other. In the simplest words of the Gospels we find already expressed a sense of reconciliation with God, and therefore with the world and self, which is alien to pure Monotheism, though there is some faint anticipation of it in the later books of the Old Testament. For a spiritual Monotheism, while it awakens a consciousness of the holiness of God, and the sinfulness of the creature, tends to make fear prevail over love, and the sense of separation over the sense of union. The idea of the unity of the Divine and the human—an original unity which yet has to be realized by self-sacrifice—and the corresponding idea that the individual or natural life must be lost in order to save it, were set before humanity, as in one great living picture, in the life and death of Christ. And what was thus directly presented to the heart and the imagination in an individual, was universalized in the writings of St. Paul and St. John: in other words, it was liberated from its peculiar national setting, and used as a key to the general moral history of man. The Messiah of the Jews was exalted into the Divine Logos, and the Cross became the symbol of an atonement and reconciliation between God and man, which has been made "before the foundation of the world," yet which has to be made again in every human life. The work of the first three centuries was to give to this idea such logical expression as was then possible, in the doctrines of the Incarnation and the Trinity. It is true that this idea of the unity of man with God was not immediately carried out to any of the consequences which might seem to be contained in

[Pg 81]

it. It remained for a time a religion, and a religion only; it did not show itself to be the principle of a new social or political order of life. Rather it accepted the old order represented by the Roman Empire, and even consecrated it as "ordained of God," only demanding for itself that it should be allowed to purify the inner life of men. Such a separation of the things of Cæsar and the things of God was then inevitable; for it is impossible that a new principle can ever be received simply and without alloy into minds, which are at the same time occupying themselves with its utmost practical or even theoretical consequences. In this sense there is great truth in what Comte says about the value of the separation of the spiritual from the temporal authority. The power of directly realizing a new religious principle, just because it draws away attention from the principle itself to the details of its practical application, is likely to prevent that application being either effective or even a true expression of the principle. Such practical inferences cannot safely be drawn by direct logical deduction; they will be made with certainty and effect only by spirits which the principle has remoulded. The decided withdrawal of the Christian Church from the sphere of "practical politics" was, therefore, not merely a necessity forced upon it from without; it was a condition which its best members gladly accepted, because without it the inner transformation of man's life by the new doctrine would have been impossible. If Christianity had raised an insurrection of slaves, it never could have put an end to slavery.

But while this withdrawal was necessary, it contained a great danger; for the inner life cannot be separated from the outer life without becoming narrowed and distorted. Confined to the sphere of religion and private morality, the doctrine of unity and reconciliation necessarily became itself the source of a new dualism. What had been at first merely neglect of the world was gradually changed into hostility to worldly interests; and the germs of a positive morality, reconciling the flesh and the spirit—which appear in the New Testament—were neglected and overshadowed in the growth of asceticism. Christianity, even in its first expression, had a negative side towards the natural life of man; while it lifted man to God, it yet taught that humanity "cannot be quickened except it die." But the mediæval Church, while it constantly taught that humanity in its desires and tendencies must die, had almost forgotten to hope that it could be quickened. Its highest morality—the morality of the three vows—was the negation of all social obligations; its science was the interpretation of a fixed dogma received on authority; its religion tended to become an external service, an *opus operatum*, a preparation for another world, rather than a principle of action in this. Its highest act of worship, the Eucharist, in which was celebrated the revealed unity of men with each other and with God, was reserved in its fulness for the clergy, and even with them was finally reduced to an external act by the doctrine of transubstantiation, in which poetry "became logic," and in becoming logic, ceased to be truth.

[Pg 82]

Now, Comte, seeing the working of this negative tendency in mediæval Catholicism, and regarding it as the natural work of Monotheism, is obliged to treat all the positive side of Christianity as an external addition suggested by the practical wisdom of the clergy. St. Paul is supposed by him to have invented (and Comte's language would ever suggest that he consciously invented^[38]) the doctrine of grace, in order to reconsecrate those social affections which Monotheism, in its condemnation of nature, had either denied to exist, or, what is nearer the truth, had treated as having no moral value. But this only shows how imperfectly Comte grasped the Pauline conception of the moral change which religion produces. The idea that the immediate untamed and undisciplined will of the natural man is not a principle of morality, and that therefore man must die to live, must rise above himself to be himself, is one which has in it nothing discordant with the claims of social feeling. It is the commonplace of every powerful writer on practical ethics, from the Gospels to Thomas à Kempis, and from Luther to Goethe.

"Und so lang du das nicht hast
Dies-es: Stirb und Werde,
Bist du nur ein trüber Gast
Auf der dunkeln Erde."

St. Paul adds that this death to self is possible only to him in whom another than his own natural will lives; "so then it is not I that live, but Christ that liveth in me." Comte would probably accept the sentence with the substitution of humanity for Christ. But either substitution involves the negation of the natural tendencies, whether individual or social, in their immediate natural form; and Comte himself, when he placed not only the sexual but even the maternal impulse among those that are merely "personal," virtually acknowledged that the natural or instinctive basis of the altruistic affections is not in itself moral.^[39] But because he begins with a psychology which treats the egoistic and altruistic desires, and again the intellect and the heart, as distinct and independent entities, he is unable to do justice to an account of moral experience which involves that they are essentially related elements in one whole, or necessarily connected stages of its development.

In the form in which it was first presented, the teaching of Christianity was undoubtedly ambiguous, as, indeed, every doctrine in its first general and abstract form must be. We cannot then call it either social or anti-social, without limitations; it is anti-social and ascetic, because of its negative relations to the previous forms of life and culture; it is social and positive in so far as in its primary doctrine of the unity of the divine and human—of divinity manifested in man and humanity made perfect through suffering—it contains the promise and the necessity of a development by which nature and spirit shall be reconciled. The progressive tendency of Christendom was based on the fact that from the earliest times the followers of Christ were placed in the dilemma, either of denying their primary doctrine of reconciliation between God and man and going back to pure Monotheism, or of advancing to the reconciliation of all those

[Pg 83]

other antagonisms of spirit and nature, the world and the Church, which arose out of the circumstances of its first publication. And modern history is more than anything else the history of the long process whereby this logical necessity manifested itself in fact. The negative spirit of the Middle Age, its asceticism, its dualism, its formalism, its tendency to transform the moral opposition of natural and spiritual into an external opposition between two natural worlds, present and future, and thus to substitute "other-worldliness" for worldliness, instead of substituting unworldliness for both—all these characteristics were the natural results of the fact that the idea of Christianity, in its first abstract form, could not include, and therefore necessarily became opposed to, the forms of social life and organization with which it came into contact. But while the early Christians looked for the realization of the kingdom of Heaven in some immediate earthly future, and the Middle Age postponed it to another life, Christ had already taught the truth, which alone can turn either of these hopes into something more than the expression of an egoistic desire—the truth that "the kingdom of God is within us." The reaction of the social necessities of mediæval society on the doctrine—which Comte quite correctly describes as leading to the gradual elevation of humanity and of human interests—found its main support in the principles of the doctrine itself, so soon as its lessons had been absorbed into the mind of the people. The irresistible force of the movement, whereby the intelligence was emancipated from authority, and the claims of the family and the State were asserted against the Church, lay above all in this, that Christianity itself was felt to involve the consecration of human life in all its interests and relations. Luther's appeal to the New Testament and to the earliest ages of Christianity was in some ways unhistorical, but it expressed a truth. Protestantism was not a return to the Christianity of the first century; it was an assertion of the relation of the individual to God, which was itself made possible only by the long work of Latin Catholicism. But the development of a doctrine, if it has in it any germ of truth which is capable of development, involves a continual recurrence to its first, and therefore its most general, expression. The elements successively developed in the Catholic and the Protestant, the Latin and the Germanic forms of Christianity, were both present in the original germ, and the exaggerated prominence given in the former to the *negative* side of Christianity could not but lead, in the development of thought, to a similarly exaggerated manifestation of its *positive* side. But it is nearly as absurd to say, as Comte does, that the true logical outcome of Christianity is to be found in the "life of the hermits of the Thebaid," as it would be to say that its true logical outcome is to be found in those vehement assertions of nature—naked and unashamed—as its own sufficient warrant, which poured almost with the force of inspiration from the lips of Diderot. Both extremes are equally removed from that special moral temper and tone of feeling which we can alone call Christian—the former by its want of sympathy and tenderness, no less than the latter by its want of purity and self-command. Reassertion of nature through its negation, or to put it more simply, the purification of the natural desires by the renunciation of their immediate gratification, is the idea that is more or less definitely present in all phases of the history of Christianity; and, though swaying from one side to the other, the religious life of modern times has never ceased to present both aspects. Even a St. Augustine recoiled from the Manichæism by which nature was regarded, not simply as fallen from its original idea, but as essentially impure. And, on the other hand, even Rousseau's Savoyard vicar, who has got rid of the negative or ascetic element, as completely as is possible for any one still retaining any tincture of Christianity or even of religion, and who insists so strongly on the text that "the natural is the moral," is yet forced to recognize that nature has two voices, and that the *raison commune* has to overcome and transform the natural inclinations of the individual. In the life of its Founder, the Christian Church has always had before it an individual type of that harmony of the spiritual and natural life, which it is its ideal to realize in all the wider spiritual relations of man; nor, till that ideal is reached, can it be said that the Christian idea is exhausted, or that the place is vacant for a new religion, however great may be the changes of form and expression through which Christianity must pass under the changed conditions of modern life.

[Pg 84]

That Comte was not able to discern this, arose, as we have seen, from the fact that he held a kind of Manichæism of his own. To him the egoistic and altruistic desires were two kinds of innate tendencies, both of which exist in man from the first, though with a great preponderance on the side of egoism. Moral improvement simply consists in altering the original proportions in favour of altruism, and moral perfection would be the complete extinction of egoism (which with Comte would naturally mean the extinction of all the desires classified as personal). Hence there is a distinctly ascetic tendency in some of the precepts of the *Politique Positive*,—*i.e.*, asceticism begins to appear, not simply as a transitional process through which certain natural desires are to be purified, but as a deliberate attempt to extinguish them. A deeper analysis would have shown that the desires in themselves, as mere natural impulses, are neither egoistic nor altruistic, neither bad nor good; and that while, as they appear in the conscious life, they are necessarily at first poisoned with egoism, yet that the *ego* is not absolutely opposed to the *alter ego*, but rather implies it. A spiritual or self-conscious being is one who can find himself, nay who can find himself only, in the life of others: and when he does so find himself, there is no natural desire which for itself he needs to renounce as impure; no natural desire which may not become the expression of the better self, which is *ego* and *alter ego* in one. But Comte, unable from the limitations of his psychology to see the true relation of the negative and the positive side of ethics, is obliged to treat the ascetic tendency of Christianity as involving a denial of the existence, or the moral value, of the social sympathies; and on the other hand, to regard the efforts of the Christian Church to cultivate those sympathies, as the result of an external accommodation. His view of Christianity, in short, practically coincides with the definition of virtue given by Paley; it is "doing good to man, in obedience to the will of God, with a view to eternal happiness." It is the pursuit of a selfish end by means in themselves unselfish, with the

[Pg 85]

pleasures and pains of another world introduced as the link of connection; and it must therefore leave bare selfishness in its place, so soon as doubt is cast upon these supernatural rewards and punishments. Hence Comte is just neither to Catholicism nor to Protestantism; considering that the former was only *indirectly* social, and that the latter is merely the first step in a scepticism which, taking away the fears and hopes of another world, must at the same time take away the last limit upon selfishness. And, just because he is unable to understand either the negative tendencies of the former, or the positive tendencies of the latter, phase of modern life, he has an imperfect appreciation of that social ideal to which both are leading, and which must combine in itself the true elements of both. As, however, it is the temptation of writers on social subjects to be least just to the tendencies of the time which preceded their own, and against whose errors they have immediately to contend, so we find that Comte is fairer towards Catholicism than he is towards Protestantism, or towards that individualism which grew out of Protestantism, and which he is pleased to call Metaphysics. The latter he sees solely on their destructive side, as successive stages in the modern movement of revolt, without appreciating the constructive elements involved in them. Hence also he is led, in his attitude towards this great movement, to all but identify himself with Catholic writers like De Maistre; and his own scheme of the future is essentially reactionary. The restoration of the spiritual power to its mediæval position was a natural proposal for one who saw in the Protestant revolt nothing more than an insurrectionary movement, which might clear the way for a new social construction, but which in itself was the negation of all government whatever.

For what was Protestantism? To the Protestant it seemed to be simply a return to the original purity of the Christian faith; to the Catholic, it seemed to be a fatal revolt against the only organization by which Christianity could be realized. Really it partook of both characters. It involved at once a dangerous misconception of the social conditions, under which alone the religious life can be realized and developed, and a deeper and truer apprehension of that religion, which first recognized the latent divinity or universal capacity of every spiritual being as such, and which, therefore, seemed to impose upon every individual man the right or rather the duty of living by the witness of his own spirit. Comte saw only the former of these aspects of it. Hence he regarded the French Revolution as a practical refutation of the individualism which grew out of the Protestant movement, and not, as it was in truth, a critical event, which should force men to distinguish and separate its true and its false elements. And he drew from it the lesson that the individual has no moral or religious life of his own, but that it is only in proportion as he transcends his own individuality and lives the life of humanity, that his own spiritual life can have any depth or riches in it. Like Burke he could say, "We are afraid to put men to live and trade each on his own private stock of reason, because we suspect that the stock in each man is small, and that the individuals would do better to avail themselves of the general bank and capital of nations and of ages." But because he discerned this, he regarded the effort of Protestantism to throw individuals back upon themselves as merely tending to empty their minds of all valuable contents, and to deliver them over to their own individual caprice. Private judgment and popular government are to him only other forms of expression for intellectual and political anarchy; and his remedy for the moral diseases of modern times is the restoration of that division of the spiritual and temporal authorities, which existed in the Middle Ages. But there is another aspect of the Protestant movement and of these apparently anarchical doctrines, to which Comte pays no attention. Catholicism, as we have seen, had developed one aspect of Christianity, until, by its exclusive prominence, the principle of Christianity itself was on the point of being lost. It had changed the opposition of laity and clergy, world and Church, from a relative into an absolute one; it had presented its doctrine, not as something which the spirit of the individual may ultimately verify for itself, but as something to which it must permanently submit without any verification. It had made the worship into an *opus operatum* instead of a means through which the feelings of the worshipper could be at once drawn out and expressed. Now, it is as opposed to these tendencies that the Protestant movement had its highest importance. It would, no doubt, be intellectual anarchy, for every individual to claim to judge for himself, on subjects for which he has not the requisite training or discipline; but it is a slavery scarcely less corrupting in its effect than anarchy, when he is made to regard the difference between himself and his teachers as a permanent and absolute one. In the former case, he has no sufficient feeling of his want to make him duly submissive to teaching; in the latter, he has no sufficient consciousness of his capacity to awake a due reaction of his thought upon the matter received from his teachers. Again, the decline of the sovereignty of the people would be the negation of all rule, if it meant that the uninstructed many should govern themselves by their own insight, and that the instructed few should simply be their servants and their instruments. But where the people are not recognized as the ultimate source of power, where their consent is not in any regular way made necessary to the proceedings of their governors, they are by that very fact kept in a perpetual tutelage, and cannot possibly feel that the life of the State is their own life. Now, the most important effect of the Protestant movement was just this, that it awakened in each individual the consciousness of his universal nature, in other words the consciousness that there is no external power or sovereignty, divine or human, to which he has absolutely and permanently to submit, but that every outward claim of authority must ultimately be justified by the inner witness of the spirit. The freedom of man is that his obedience to the State, to the Church, even to God, is the obedience of his natural to his spiritual self. The essential truth of the Reformation lay in its republication of the doctrine that the voice of God speaks within and not only without us, and indeed that "it is only by the God within that we can comprehend the God without." And the nations, which had learned that lesson in religion, soon hastened to apply it to the social and political order of life. It is undoubtedly a dangerous lesson, as may be seen, not only in the tendency of many Protestant sects to put the inner life in

[Pg 86]

[Pg 87]

opposition to the outer, and so to deprive the former of all wider contents and interests; but also in the ultimate substitution, by Rousseau and others, of the assertion of the natural, for the assertion of the spiritual, man. In such extreme cases we find the mere *capacity* of man for a higher life treated as if it were the higher life itself; forgetting that the capacity is nothing unless it be realized, and that its realization requires the surrender of individual liberty and private judgment to the guidance and teaching of those, in whom that realization has already taken place. But it is not the less true that the consciousness of the capacity, and the consequent sense of the duty of becoming, not merely a slave or instrument, but an organ, of the intellectual and moral life of mankind, is the essential basis of modern life. "Henceforth, I call you not servants, for the servant knoweth not what his lord doeth; but I have called you friends," is a word of Christ which scarcely began to be verified till the Reformation. And while its verification cannot mean the negation of that division of labour upon which society rests,—cannot mean that each one should *know* and *judge*, any more than that each one should *do*, everything for himself,—it at least means that every power and authority should henceforth be, in the true sense of the word, spiritual, and rest for its main support upon the opinion of those who obey it. It is because he has not appreciated this truth that Comte so decidedly breaks with the democratic spirit of modern times, and seeks to set up an aristocracy in the State and a monarchy in the Church. Yet the spirit of the age is, after all, too strong for him, and while he refuses to the governed any regular and legitimate way of reacting upon the powers that govern them, he recognizes that the *ultima ratio*, the final remedy for misgovernment, lies in their irregular and illegitimate action. As regards the State, he declares that "the right of insurrection is the ultimate resource with which no society should allow itself to dispense."^[40] And as regards the Church he says that if "the High Priest of Humanity, supported by the body of the clergy, should go wrong, then the only remedy left would be the refusal of co-operation, a remedy which can never fail, as the priesthood rests solely on conscience and opinion, and succumbs, therefore, to their adverse sentence." The civil government, in fact, can bring the spiritual power to a dead-lock, by "suspending its stipend, for in cases of serious error, popular subscriptions would not replace it, unless on the supposition of a fanaticism scarcely compatible with the Positive faith, where there is enthusiasm for the doctrines, rather than for the teachers."^[41] Comte also desiderates among the proletariat a strong reactive influence of public opinion, by which the officers, both of Church and State, are to be kept to their work. But if this is desirable, why should the proletariat have no regular means of making their will felt? An "organic" theory of the constitution of society must surely provide every real force with a legitimate form of expression; if a social theory embodies the idea of revolution in it, it is self-condemned.

[Pg 88]

Comte's social ideal is in many respects a close reproduction of the mediæval system, with its *régime dispersif* of feudalism in secular politics, and its concentration of Papal authority in the Church. For him, the growth of national States to their present dimensions, and, on the other hand, the increasing division of labour in the realm of thought, are equally steps in the wrong direction. Still more strongly, if possible, does he reprobate that interference of the State with spiritual matters, such as the education of the people and its religious life, which has been the natural consequence of the failure of the mediæval Church to maintain its old authority. Notwithstanding his worship of humanity, the idea of a "parliament of man, a federation of the world," by which all the powers of mankind should be united for the attainment of the highest material and spiritual good, has no attraction for him. To reduce the State to the dimensions of a commune, and to confine it to the care of purely material interests, is his first political proposal. France, England, and Spain (and we may now add Germany and Italy) are, in his view, "factitious aggregates without solid justification," and they will only become "free and durable States," when they are broken up into fragments, each with a population of two or three millions, and a territory not exceeding that of Belgium or Tuscany. The "West" will thus be divided into seventy republics, and the earth into five hundred, and the main work of the patriciate will be to direct and regulate the industrial life of the community; each member of the banker triumvirate, who are to be at the head of the State, having one of the great industrial departments under his special superintendence. On the other hand the unity of humanity is to be represented solely by the spiritual power, in whose hands is to be left the whole work of extending science, teaching the people, and exercising a moral censorship over all Governments and individuals. And while this spiritual power is, for practical purposes, to be strictly organized on the model of the mediæval Church, it is also, like that Church, to remain, for scientific purposes, inorganic. In other words, it is to admit no scientific division of labour, but every one, like a mediæval doctor, is to profess all science, adding to this the priestly office, which, with Comte, includes both the cure of souls and of bodies.

[Pg 89]

To criticize the details of this scheme seems to be unnecessary after what has been already said. It is not to be denied that the division of Church and State in the Middle Age was a most important and even necessary condition of progress. Christianity could never have been impressed upon the minds of men, if its concrete application and development had been too rapid. The essential condition of such development was that men should not concern themselves too prematurely with it. For the consequences of a moral and religious principle cannot be reached by direct logical deductions; it is like a living germ, in which, by no analysis or dissection, you can discover the lineaments of the future plant. To know what it really is, or involves, you must plant it in the minds of men, and let it grow. Hence the mediæval Church was strong in its weakness, and it was its very victories over the temporal power that were its greatest danger. It became corrupt and lost its hold upon the minds of men, just when it seemed to have established its right to an absolute supremacy. Comte, following De Maistre, attaches great importance to the position of the Popes as arbiters between the Sovereigns and nations of

mediæval Europe. But he forgets that, in claiming and maintaining this position the Popes were distinctly ceasing to be a spiritual power, if it be the function of a spiritual power to inculcate principles rather than to use them to solve present difficulties. A power interfering in this way with the immediate struggle of interests, could not but be invaded by the passions they excite, and it was the more certain to be corrupted by these passions, because it conceived them to be evil, and pretended altogether to renounce them. The mediæval authority of the Church might have its value, as an anticipation of the peaceful federation of the nations under one supreme Government, but it was at the same time the first step towards the erasing of the distinction between the temporal and the spiritual power.

[Pg 90]

The truth seems to be that the distinction, of secular and spiritual powers, except in the sense already indicated, is essentially irrational, and that the attempt to realise it in practice must involve, as it did involve in the Middle Ages, a continual internecine struggle. To set up two regularly constituted powers face to face with each other, one claiming man's allegiance in the name of his spiritual, and the other in the name of his temporal, interests, is to organize anarchy. So long as man's body and soul are inseparable, it will be impossible to divide the world between Cæsar and God; for in one point of view all is Cæsar's, and in another all is God's. In the Middle Ages the conflict of two despotisms was necessary to the growth of freedom; but, when government ceases to be despotic, the need for such division of power passes away. The relative separation between the speculative and the practical classes—between the scientific and moral teachers of mankind, on the one hand, and the statesmen or administrators who have to discover what immediate changes in the organization of life have become necessary, on the other—is a division of labour which can surely be attained without breaking up the unity of the social body. It is not desirable that the philosopher, or priest, or man of science, should be king—and we may even acknowledge that if he were king he would probably be a very bad one;—on the other hand, it is desirable that he should have his due influence, as the teacher of those general truths out of which all practical improvement must ultimately spring. But the natural difference of the tastes and capacities of men should, in a well-organized State, be sufficient to secure due influence to those who are the natural representatives of man's spiritual interests (whether they be religious, philosophic, or scientific), without tempting them from their proper task of discovering and teaching the truth, to the less appropriate work of determining how much of it comes within "the sphere of practical politics." Comte, indeed, by organizing them as an independent power apart from, and outside of, the State, would make such a perversion extremely probable. A hierarchy of priests, under a despotic Pope, would soon cease to be, in any sense, a spiritual power; and this would be only the more certain if, by the Comtist denunciation of specialism, they were prohibited from any division of labour according to capacity in their own peculiar sphere of scientific research. For by this prohibition their attention would be drawn more and more from the truth of their doctrines to their immediate practical effects, not to mention that, in the case of all but a few comprehensive minds, the natural result would be an omniscient superficiality, which would be the enemy of all real culture. For he who knows one thing well may find the whole in the part; but he who knows the whole superficially, inevitably reduces it to the level of something partial and subjective. Deprived of its natural aim, the Comtist Church of the future would inevitably throw itself, with all its energy, into the task of directly influencing the practical life of men, and there it would find itself in the presence of a number of communal States, none of them large enough to offer any effective resistance. Positivism must indeed alter human nature, if such a priesthood would not seek to make itself despotic, especially if it could wield such a formidable weapon as the Positivist excommunication is supposed to be.^[42]

[Pg 91]

The truth is that Comte commits the same error which misled Montesquieu and his followers, when they supposed that the great security of a free State lay in the separation of the legislative, executive, and judicial powers,—*i.e.*, in treating the different organs through which the common life expresses itself as if they were independent organisms. In doing so, they forgot that, if such a balance of power was realised, the effect must either be an equilibrium in which all movement must cease, or a struggle in which the unity of the State would be in danger of being lost. The true security against the dangers involved, on the one hand, in the direct application of theory to practice, and, on the other hand, in the separation of practice from theory, must lie, not in giving them independent positions as spiritual and temporal powers, but in the organic unity of the society—communal, national, or, if it may be, universal—to which the representatives of both belong. And organic unity, though it does not mean any special form of government, means at least two things: in the first place, that each great class or interest should have for itself a definite organ, and should therefore be able to act on the whole body in a regular and constitutional manner, so as to show all its force without revolutionary violence; and, in the second place, that no class or interest should have such an independent position, that there is no legal or constitutional method of bringing it into due subordination. But Comte, losing his balance in his jealousy of the individualistic and democratic movement of modern society, has built up a social ideal, which fails in both these points of view. And he is consequently obliged, against his will, to contemplate revolution and war as necessary resources of the Constitution.

It would not be fair to conclude these articles, which have necessarily been devoted in great part to criticism and controversy, without expressing a sense of the power and insight which are shown in the works of Comte, especially in the *Politique Positive*. Controversy itself, it must be remembered, is a kind of homage; for, as Hegel says, "It is only a great man that condemns us to the task of explaining him." But if we can sometimes look down upon such men, it becomes us to remember that we stand upon their shoulders. Comte seems to me to occupy, as a writer, a position in some degree similar to that of Kant. He stands, or rather moves, between the old

world and the new, and is broken into inconsistency by the effort of transition. Like Kant, he is embarrassed to the end by the ideas with which he started, and of which he can never free himself so as to make a new beginning. Comte had only a small portion of that power of speculative analysis which characterized his great predecessor, but he had much of his tenacity of thought, his power of continuous construction; and he had the same conviction of the all-importance of morals, and the same determination to make all his theoretic studies subordinate to the solution of the moral problem. Also, partly because he lived at a later time, and in the midst of a society which was in the throes of a social revolution, and partly because of the keenness and strength of his own social sympathies, he gives us a kind of insight into the diseases and wants of modern society, which we could not expect from Kant, and which throws new light upon the ethical speculations of Kant's idealistic successors. To believe that his system, as a whole, is inconsistent with itself, that his theory of historical progress is insufficient, and that his social ideal is imperfect, need not prevent us from recognizing that there are many valuable elements in his historical and social theories, and that no one who would study such subjects can afford to neglect them. A mind of such power cannot treat any subject without throwing much light upon it, which is independent of his special system of thought, and, above all, without doing much to show what are the really important difficulties in it which need to be solved. And, especially in such subjects, to discover the right question is to be half-way to the answer. Further, as Comte himself somewhere says, it is an immense advantage in studying any complex subject to have before us a distinct and systematic attempt to explain it; for it is only by criticism upon criticism that we can expect to reach the truth, in which all its varied sides and aspects are brought to a unity.

[Pg 92]

EDWARD CAIRD.

[Pg 93]

THE PROBLEM OF THE GREAT PYRAMID.

A few months ago I endeavoured to trace out, in these pages, the probable origin of the week, as a measure of time, by a method which has not hitherto, so far as I know, been followed in such cases. I followed chiefly a line of *à priori* reasoning, considering how herdsmen and tillers of the soil would be apt at a very early period to use the moon as a means of measuring time, and how in endeavouring so to use her they would almost of necessity be led to employ special methods of subdividing the period during which she passes through her various phases. But while each step of the reasoning was thus based on *à priori* considerations, its validity was tested by the evidence which has reached us respecting the various methods employed by different nations of antiquity for following the moon's motions. It appears to me that the conclusions to which this method of reasoning led were more satisfactory, because more trustworthy, than those which have been reached respecting the week by the mere study of various traditions which have reached us respecting the early use of this widespread time measure.

I now propose to apply a somewhat similar method to a problem which has always been regarded as at once highly interesting and very difficult, the question of the purpose for which the pyramids of Egypt, and especially the pyramids of Ghizeh, were erected. But I do not here take the full problem under consideration. I have, indeed, elsewhere dealt with it in a general manner, and have been led to a theory respecting the pyramids which will be touched on towards the close of the present paper. Here, however, I intend to deal only with one special part of the problem, that part to which alone the method I propose to employ is applicable—the question of the astronomical purpose which the pyramids were intended to subserve. It will be understood, therefore, why I have spoken of applying a somewhat similar method, and not a precisely similar method; to the problem of the pyramids. For whereas in dealing with the origin of the week, I could from the very beginning of the inquiry apply the *à priori* method, I cannot do so in the case of the pyramids. I do not know of any line of *à priori* reasoning by which it could be proved, or even rendered probable, that any race of men, of whatever proclivities or avocations, would naturally be led to construct buildings resembling the pyramids. If it could be, of course that line of reasoning would at the same time indicate what purposes such buildings were intended to subserve. Failing evidence of this kind, we must follow at first the *à posteriori* method; and this method, while it is clear enough as to the construction of pyramids, for there are the pyramids themselves to speak unmistakably on this point, is not altogether so clear as to any one of the purposes for which the pyramids were built.

[Pg 94]

Yet I think that if there is one purpose among possibly many which the builders of the pyramids had in their thoughts, which can be unmistakably inferred from the pyramids themselves, independently of all traditions, it is the purpose of constructing edifices which should enable men to observe the heavenly bodies in some way not otherwise obtainable. If the orienting of the faces of the pyramids had been effected in some such way as the orienting of most of our cathedrals and churches—*i.e.*, in a manner quite sufficiently exact as tested by ordinary observation, but not capable of bearing astronomical tests,—it might reasonably enough be inferred that having to erect square buildings for any purpose whatever, men were likely enough to set them four-square to the cardinal points, and that, therefore, no stress whatever can be laid on this feature of the pyramids' construction. But when we find that the orienting of the pyramids has been effected with extreme care, that in the case of the great pyramid, which is the typical edifice of this kind, the orienting bears well the closest astronomical scrutiny, we cannot doubt that this feature indicates an astronomical purpose as surely as it indicates the use of astronomical methods.

But while we thus start with what is to some degree an assumption, with what at any rate is not based on *à priori* considerations, yet manifestly we may expect to find evidence as we proceed which shall either strengthen our opinion on this point, or show it to be unsound. We are going to make this astronomical purpose the starting-point for a series of *à priori* considerations, each to be tested by whatever direct evidence may be available; and it is practically certain that if we have thus started in an entirely wrong direction, we shall before long find out our mistake. At least we shall do so, if we start with the desire to find out as much of the truth as we can, and not with the determination to see only those facts which point in the direction along which we have set out, overlooking any which seem to point in a different direction. We need not necessarily be in the wrong track because of such seeming indications. If we are on the right track, we shall see things more clearly as we proceed; and it may be that evidence which at first seems to accord ill with the idea that we are progressing towards the truth, may be found among the most satisfactory evidence obtainable. But we must in any case note such evidence, even at the time when it seems to suggest that we are on the wrong track. We may push on, nevertheless, to see how such evidence appears a little later. But we must by no means forget its existence. So only can we hope to reach the truth or a portion of the truth, instead of merely making out a good case for some particular theory.

[Pg 95]

We start, then, with the assumption that the great pyramid, called the Pyramid of Cheops, was built for this purpose, *inter alia*, to enable men to make certain astronomical observations with great accuracy; and what we propose to do is to inquire what would be done by men having this purpose in view, having, as the pyramid builders had, (1) a fine astronomical site, (2) the command of enormous wealth, (3) practically exhaustless stores of material, and (4) the means of compelling many thousands of men to labour for them.

Watching the celestial bodies hour by hour, day by day, and year by year, the observer recognizes certain regions of the heavens which require special attention, and certain noteworthy directions both with respect to the horizon and to elevation above the horizon.

For instance, the observer perceives that the stars, which are in many respects the most conveniently observable bodies, are carried round, as if they were rigidly attached to a hollow sphere, carried around an axis passing through the station of the observer (as through a centre) and directed towards a certain point in the dome of the heavens. That point, then, is one whose direction must not only be ascertained, but must be in some way or other indicated. Whatever the nature of an astronomer's instruments or observatory, whether he have but a few simple contrivances in a structure of insignificant proportions, or the most perfect instruments in a noble edifice of most exquisite construction and of the utmost attainable stability, he must in every case have the position of the pole of the heavens clearly indicated in some way or other. Now, the pole of the heavens is a point lying due north, at a certain definite elevation above the horizon. Thus the first consideration to be attended to by the builder of any sort of astronomical observatory, is the determination of the direction of the true north (or the laying down of a true north-and-south line), while the second is the determination, and in some way or other the indication of the angle of elevation above the north point, at which the true pole of the heavens may lie.

To get the true north-and-south line, however, the astronomer would be apt at first, perhaps, rather to make mid-day observations than to observe the stars at night. It would have been the observation of these which first called his attention to the existence of a definite point round which all the stars seem to be carried in parallel circles; but he would very quickly notice that the sun and the moon, and also the five planets, are carried round the same polar axis, only differing from the stars in this: that, besides being thus carried round with the celestial sphere, they also move upon that sphere, though with a motion which is very slow compared with that which they derive from the seeming motion of the sphere itself. Now, among these bodies the sun and moon possess a distinct advantage over the stars. A body illuminated by either the sun or the moon throws a shadow, and thus if we place an upright pointed rod in sunlight or moonlight, and note where the shadow of the point lies, we know that a straight line from the point to the shadow of the point is directed exactly towards the sun or the moon, as the case may be. Leaving the moon aside as in other respects unsuitable, for she only shines with suitable lustre in one part of each month, we have in the sun's motions a means of getting the north-and-south line by thus noting the position of the shadow of a pointed upright. For being carried around an inclined axis directed northwards, the sun is, of course, brought to his greatest elevation on any given day when due south. So that if we note when the shadow of an upright is shortest on any day, we know that at that moment the sun is at his highest or due south; and the line joining the centre of the upright's base with the end of the shadow at that instant lies due north-and-south.

[Pg 96]

But though theoretically this method is sufficient, it is open, in practice, to a serious objection. The sun's elevation, when he is nearly at his highest, changes very slowly; so that it is difficult to determine the precise moment when the shadow is shortest. But the direction of the shadow is steadily changing all the time that we thus remain in doubt whether the sun's elevation has reached its maximum or not. We are apt, then, to make an error as to time, which will result in a noteworthy error as to the direction of the north-and-south line.

For this reason, it would be better for any one employing this shadow method to take two epochs on either side of solar noon, when the sun was at exactly the same elevation, or the shadow of exactly the same length,—determining this by striking out a circle around the foot of the upright, and observing where the shadow's point crossed this circle before noon in drawing nearer to the base, and after noon in passing away from the base. These two intersections with the circle

necessarily lie at equal distances from the north-and-south line, which can thus be more exactly determined than by the other method, simply because the end of the shadow crosses the circle traced on the ground at moments which can be more exactly determined than the moment when the shadow is shortest.

Now, we notice in this description of methods which unquestionably were followed by the very earliest astronomers, one circumstance which clearly points to a feature as absolutely essential in every astronomical observing station. (I do not say "observatory," for I am speaking just now of observations so elementary that the word would be out of place.) The observer must have a perfectly flat floor on which to receive the shadow of the upright pointer. And not only must the floor be flat, but it must also be perfectly horizontal. At any rate, it must not slope down either towards the east or towards the west, for then the shadows on either side of the north-and-south line would be unequal. And though a slope towards north or south would not affect the equality of such shadows, and would therefore be admissible, yet it would clearly be altogether undesirable; since the avoidance of a slope towards east or west would be made much more difficult if the surface were tilted, however slightly, towards north or south. Apart from this, several other circumstances make it extremely desirable that the surface from which the astronomers make their observations should be perfectly horizontal. In particular, we shall see presently that the exact determination of elevations above the eastern and western horizons would be very necessary even in the earliest and simplest methods of observation, and for this purpose it would be essential that the observing surface should be as carefully levelled in a north-and-south as in an east-and-west direction.

[Pg 97]

We should expect to find, then, that when the particular stage of astronomical progress had been reached, at which men not only perceived the necessity of well-devised buildings for astronomical observation, but were able to devote time, labour, and expense to the construction of such buildings, the first point to which they would direct their attention would be the formation of a perfectly level surface, on which eventually they might lay down a north-and-south or true meridional line.

Now, of the extreme care with which this preliminary question of level was considered by the builders of the great pyramid, we have singularly clear and decisive evidence. For all around the base of the pyramid there was a pavement, and we find the builders not only so well acquainted with the position of the true horizontal plane at the level of this pavement, but so careful to follow it (even as respects this pavement, which, be it noticed, was only, in all probability, a subsidiary and quasi-ornamental feature of the building), that the pavement "was varied in thickness at the rate of about an inch in 100 feet to make it absolutely level, which the rock was not."^[43]

But now with regard to the true north-and-south direction, although the shadow method, carried out on a truly level surface, would be satisfactory enough for a first rough approximation, or even for what any but astronomers would regard as extreme accuracy, it would be open to serious objections for really exact work. These objections would have become known to observers long before the construction of the pyramid was commenced, and would have been associated with the difficulties which suggested, I think, the idea itself of constructing such an edifice.

[Pg 98]

Supposing an upright pointed post is set up, and the position of the end of the shadow upon a perfectly level surface is noted; then whatever use we intend to make of this observation, it is essential that we should know the precise position of the centre of the upright's base, and also that the upright should be truly vertical. Otherwise we have only exactly obtained the position of one end of the line we want, and to draw the line properly we ought as exactly to know the position of the other end. If we want *also* to know the true position of a line joining the point of the upright and the shadow of this point, we require to know the true height of the upright. And even if we have these points determined, we still have not a *material* line from the point of the upright to the place of its shadow. A cord or chain from one point to the other would be curved, even if tightly stretched, and it would not be tightly stretched, if long, without either breaking or pulling over the upright. A straight bar of the required length could not be readily made or used: if stout enough to lie straight from point to point it would be unwieldy, if not stout enough so that it bent under its own weight it would be useless.

Thus the shadow method, while difficult of application to give a true north-and-south horizontal line, would fail utterly to give material indications of the sun's elevation on particular days, without which it would be impossible to obtain in this manner any material indications of the position of the celestial pole.

A natural resource, under these circumstances—at least a natural resource for astronomers who could afford to adopt the plan—would be to build up masses of masonry, in which there should be tubular holes or tunnelling pointing in certain required directions. In one sense the contrivance would be clumsy, for a tunnelling once constructed, would not admit of any change of position, nor even allow of any save very limited changes in the direction of the line of view through them. In fact, the more effective a tunnelling would be in determining any particular direction, the less scope, of course, would it afford for any change in the direction of a line of sight along it. So that the astronomical architect would have to limit the use of this particular method to those cases in which great accuracy in obtaining a direction line and great rigidity in the material indication of that line's position were essential or at least exceedingly desirable. Again, in some cases presently to be noticed, he would require, not a tubing directed to some special fixed point in the sky, but an opening commanding some special range of view. Yet again it would be manifestly well for him to retain, whenever possible, the power of using the shadow method in observing the

sun and moon; for this method in the case of bodies varying their position on the celestial sphere, not merely with respect to the cardinal points, would be of great value. Its value would be enhanced if the shadows could be formed by objects and received on surfaces holding a permanent position.

We begin to see some of the requirements of an astronomical building such as we have supposed the earlier observers to plan.

First, such a building must be large, to give suitable length to the direction lines, whether along edges of the building or along tubular passages or tunnellings within it. Secondly, it must be massive in order that these edges and passages might have the necessary stability and permanence. Thirdly, it must be of a form contributing to such stability, and as height above surrounding objects (even hills lying at considerable distances) would be a desirable feature, it would be proper to have the mass of masonry growing smaller from the base upwards. Fourthly, it must have its sides carefully oriented, so that it must have either a square or oblong base with two sides lying exactly north and south, and the other two lying exactly east and west. Fifthly, it must have the direction of the pole of the heavens either actually indicated by a tunnelling of some sort pointed directly polewards, or else inferable from a tunnelling pointing upon a suitable star close to the true pole of the heavens.

The lower part of a pyramid would fulfil the conditions required for the stability of such a structure, and a square or oblong form would be suitable for the base of such a pyramid. We must not overlook the fact that a complete pyramid would be utterly unsuitable for an astronomical edifice. Even a pyramid built up of layers of stone and continued so far upwards that the uppermost layer consisted of a single massive stone, would be quite useless as an observatory. The notion which has been entertained by some fanciful persons, that one purpose which the great pyramid was intended to subserve, was to provide a raised small platform high above the general level of the soil, in order that astronomers might climb night after night to that platform, and thence make their observations on the stars, is altogether untenable. Probably no fancy respecting the pyramids has done more to discredit the astronomical theory of these structures than has this ridiculous notion; because even those who are not astronomers and therefore little familiar with the requirements of a building intended for astronomical observation, perceive at once the futility of any such arrangement, and the enormous, one may almost say the infinite disproportion between the cost at which the raised small platform would have been obtained, and the small advantage which astronomers would derive from climbing up to it instead of observing from the ground level. Yet we have seen this notion not only gravely advanced by persons who are to some degree acquainted with astronomical requirements, but elaborately illustrated. Thus, in Flammarion's "History of the Heavens," there is a picture representing six astronomers in eastern garb, perched in uncomfortable attitudes on the uppermost step of a pyramid, whence they are staring hard at a comet, naturally without the slightest opportunity of determining its true position in the sky, since they have no direction lines of any sort for their guidance. Apart from this, their attention is very properly directed in great part to the necessity of preserving their equilibrium. In only one point in fact does this picture accord with *a priori* probabilities—namely, in the great muscular development of these ancient observers. They are perfectly herculean, and well they might be, if night after night they had to observe the celestial bodies from a place so hard to reach, and where attitudes so awkward must be maintained during the long hours of the night.

[Pg 100]

It is perfectly clear, and is in fact one of the chief difficulties of the astronomical theory of the pyramids, that it would only be when these buildings were as yet incomplete that they could subserve any useful astronomical purposes; nevertheless we must not on this account suffer ourselves at this early stage of our inquiry to be diverted from the astronomical theory by what must be admitted to be a very strong argument against it. We have seen that there is such decisive and even demonstrative evidence in favour of the theory that the pyramids were not oriented in a general, still less in a merely casual, manner, and this is, in reality, such clear evidence of their astronomical significance, that we must pass further on upon the line of reasoning which we have adopted—prepared to turn back indeed if absolutely convincing evidence should be found against the theory of the astronomical *purpose* of the pyramids, but anticipating rather that, on a close inquiry, a means of obviating this particular objection may before long be found.

Let us suppose, then, that astronomers have determined to erect a massive edifice, on a square or oblong base properly oriented, constructing within this edifice such tubular openings as would be most useful for the purpose of indicating the true directions of certain celestial objects at particular times and seasons.

Before commencing so costly a structure they would be careful to select the best possible position for it, not only as respects the nature of the ground, but also as respects latitude. For it must be remembered that, from certain parts of the earth, the various points and circles which the astronomer recognizes in the heavens occupy special positions and fulfil special relations.

So far as conditions of the soil, surrounding country, and so forth are concerned, few positions could surpass that selected for the great pyramid and its companions. The pyramids of Ghizeh are situated on a platform of rock, about 150 feet above the level of the desert. The largest of them, the Pyramid of Cheops, stands on an elevation free all around, insomuch that less sand has gathered round it than would otherwise have been the case. How admirably suited these pyramids are for observing stations is shown by the way in which they are themselves seen from

a distance. It has been remarked by every one who has seen the pyramids that the sense of sight is deceived in the attempt to appreciate their distance and magnitude. "Though removed several leagues from the spectator, they appear to be close at hand; and it is not until he has travelled some miles in a direct line towards them, that he becomes sensible of their vast bulk and also of the pure atmosphere through which they are viewed."

With regard to their astronomical position, it seems clear that the builders intended to place the great pyramid precisely in latitude 30° , or, in other words, in that latitude where the true pole of the heavens is one-third of the way from the horizon to the point overhead (the zenith), and where the noon sun at true spring or autumn (when the sun rises almost exactly in the east, and sets almost exactly in the west) is two-thirds of the way from the horizon to the point overhead. In an observatory set exactly in this position, some of the calculations or geometrical constructions, as the case may be, involved in astronomical problems, are considerably simplified. The first problem in Euclid, for example, by which a triangle of three equal sides is made, affords the means of drawing the proper angle at which the mid-day sun in spring or autumn is raised above the horizon, and at which the pole of the heavens is removed from the point overhead. Relations depending on this angle are also more readily calculated, for the very same reason, in fact, that the angle itself is more readily drawn. And though the builders of the great pyramid must have been advanced far beyond the stage at which any difficulty in dealing directly with other angles would be involved, yet they would perceive the great advantage of having one among the angles entering into their problems thus conveniently chosen. In our time, when by the use of logarithmic and other tables, all calculations are greatly simplified, and when also astronomers have learned to recognize that no possible choice of latitude would simplify their labours (unless an observatory could be set up at the North Pole itself, which would be in other respects inconvenient), matters of this sort are no longer worth considering, but to the mathematicians who planned the great pyramid they would have possessed extreme importance.

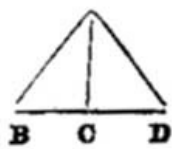


Fig. 1.

To set the centre of the pyramid's future base in latitude 30° , two methods could be used, both already to some degree considered—the shadow method, and the Pole-star method. If at noon, at the season when the sun rose due east and set due west, an upright AC were found to throw a shadow CD, so proportioned to AC that ACD would be one-half of an equal-sided triangle, then, theoretically, the point where this upright was placed would be in latitude 30° . As a matter of fact it would not be, because the air, by bending the sun's rays, throws the sun apparently somewhat above his true position. Apart from this, at the time of true spring or autumn, the sun does not seem to rise due east, or set due west, for he

is raised above the horizon by atmospheric refraction, before he has really reached it in the morning, and he remains raised above it after he has really passed below—understanding the word "really" to relate to his actual geometrical direction. Thus, at true spring and autumn, the sun rises slightly to the north of east, and sets slightly to the north of west. The atmospheric refraction is indeed so marked, as respects these parts of the sun's apparent course, that it must have been quickly recognized. Probably, however, it would be regarded as a peculiarity only affecting the sun when close to the horizon, and would be (correctly) associated with his apparent change of shape when so situated. Astronomers would be prevented in this way from using the sun's horizontal position at any season to guide them with respect to the cardinal points, but they would still consider the sun, when raised high above the horizon, as a suitable astronomical index (so to speak), and would have no idea that even at a height of sixty degrees above the horizon, or seen as in direction DA, Fig. 1, he is seen appreciably above his true position.

[Pg 102]

Adopting this method—the shadow method—to fix the latitude of the pyramid's base, they would conceive the sun was sixty degrees above the horizon at noon, at true spring or autumn, when in reality he was somewhat below that elevation. Or, in other words, they would conceive they were in latitude 30° north, when in reality they were farther north (the mid-day sun at any season sinking lower and lower as we travel farther and farther north). The actual amount by which, supposing their observations exact, they would thus set this station north of its proper position, would depend on the refractive qualities of the air in Egypt. But although there is some slight difference in this respect between Egypt and Greenwich, it is but small; and we can determine from the Greenwich refraction tables, within a very slight limit of error, the amount by which the architects of the great pyramid would have set the centre or the base north of latitude 30° , if they had trusted solely to the shadow method. The distance would have been as nearly as possible 1125 yards, or say three furlongs.

Now, if they followed the other method, observing the stars around the pole, in order to determine the elevation of the true pole of the heavens, they would be in a similar way exposed to error arising from the effects of atmospheric refraction. They would proceed probably somewhat in this wise:—Using any kind of direction lines, they would take the altitude of their Polar star (1) when passing immediately under the pole, and (2) when passing immediately above the pole. The mean of the altitudes thus obtained would be the altitude of the true pole of the heavens. Now, atmospheric refraction affects the stars in the same way that it affects the sun, and the nearer a star is to the horizon, the more it is raised by atmospheric refraction. The Pole-star in both its positions—that is when passing below the pole, and when passing above that point—is raised by refraction, rather more when below than when above; but the estimated position of the pole itself, raised by about the mean of these two effects, is in effect raised almost exactly as much as it would be if it were itself directly observed (that is, if a star occupied the pole itself, instead of merely circling close round the pole). We may then simplify matters by leaving out of

[Pg 103]

consideration at present all questions of the actual Pole-star in the time of the pyramid builders, and simply considering how far they would have set the pyramid's base in error, if they had determined their latitude by observing a star occupying the position of the true pole of the heavens.

They would have endeavoured to determine where the pole appears to be raised exactly thirty degrees above the horizon. But the effect of refraction being to raise every celestial object above its true position, they would have supposed the pole to be raised thirty degrees, when in reality it was less raised than this. In other words, they would have supposed they were in latitude 30° , when, in reality, they were in some lower latitude, for the pole of the heavens rises higher and higher above the horizon as we pass to higher and higher latitudes. Thus they would set their station somewhat to the south of latitude 30° , instead of to the north, as when they were supposed to have used the shadow method. Here again we can find how far they would set it south of that latitude. Using the Greenwich refraction table (which is the same as Bessel's), we find that they would have made a much greater error than when using the other method, simply because they would be observing a body at an elevation of about thirty degrees only, whereas in taking the sun's mid-day altitude in spring or autumn, they would be observing a body at twice as great an elevation. The error would be, in fact, in this case, about 1 mile 1512 yards.

It seems not at all unlikely that astronomers, so skilful and ingenious as the builders of the pyramid manifestly were, would have employed both methods. In that case they would certainly have obtained widely discrepant results, rough as their means and methods must unquestionably have been, compared with modern instruments and methods. The exact determination from the shadow plan would have set them 1125 yards to the north of the true latitude; while the exact determination from the Pole-star method would have set them 1 mile 1512 yards south of the true latitude. Whether they would thus have been led to detect the effect of atmospheric refraction on celestial bodies high above the horizon may be open to question. But certainly they would have recognized the action of some cause or other, rendering one or other method, or both methods, unsatisfactory. If so, and we can scarcely doubt that this would actually happen (for certainly they would recognize the theoretical justice of both methods, and we can hardly imagine that having two available methods, they would limit their operations to one method only), they would scarcely see any better way of proceeding than to take a position intermediate between the two which they had thus obtained. Such a position would lie almost exactly 1072 yards south of true latitude 30° north.

[Pg 104]

Whether the architects of the pyramid of Cheops really proceeded in this way or not, it is certain that they obtained a result corresponding so well with this that if we assume they really did intend to set the base of the pyramid in latitude 30° , we find it difficult to persuade ourselves that they did not follow some such course as I have just indicated—the coincidence is so close considering the nature of the observations involved. According to Professor Piazzzi Smyth, whose observational labours in relation to the great pyramid are worthy of all praise, the centre of the base of this pyramid lies about 1 mile 568 yards south of the thirtieth parallel of latitude. This is 944 yards north of the position they would have deduced from the Pole-star method; 1 mile 1693 yards south of the position they would have deduced from the shadow method; and 1256 yards south of the mean position between the two last-named. The position of the base seems to prove beyond all possibility of question that the shadow method was not the method on which sole or chief reliance was placed, though this method must have been known to the builders of the pyramid. It does not, however, prove that the star method was the only method followed. A distance of 944 yards is so small in a matter of this sort that we might fairly enough assume that the position of the base was determined by the Pole-star method. If, however, we supposed the builders of the pyramid to have been exceedingly skilful in applying the methods available to them, we might not unreasonably conclude from the position of the pyramid's base that they used both the shadow method and the Pole-star method, but that, recognizing the superiority of the latter, they gave greater weight to the result of employing this method. Supposing, for instance, they applied the Pole-star method three times as often as the shadow method, and took the mean of all the results thus obtained, then the deduced position would lie three times as far from the northern position obtained by the shadow method as from the southern position obtained by the Pole-star method. In this case their result, if correctly deduced, would have been only about 156 yards north of the actual present position of the centre of the base.

It is impossible, however, to place the least reliance on any calculation like that made in the last few lines. By *à posteriori* reasoning such as this one can prove almost anything about the pyramids. For observe, though presented as *à priori* reasoning, it is in reality not so, being based on the observed fact, that the true position lies more than three times as far from the northerly limit as from the southern one. Now, if in any other way, not open to exception, we knew that the builders of the pyramid used both the sun method and the star method, with perfect observational accuracy, but without knowledge of the laws of atmospheric refraction, we could infer from the observed position the precise relative weights they attached to the two methods. But it is altogether unsafe, or, to speak plainly, it is in the logical sense a perfectly vicious manner of reasoning, to ascertain first such relative weights on an assumption of this kind, and having so found them, to assert that the relation thus detected is a probable one in itself, and that since, when assumed, it accounts precisely for the observed position of the pyramid, therefore the pyramid was posited in that way and no other. It has been by unsound reasoning of this kind that nine-tenths of the absurdities have been established on which Taylor and Professor Smyth and their followers have established what may be called the pyramid religion.

[Pg 105]

All we can fairly assume as probable from the evidence, in so far as that evidence bears on the results of *à priori* considerations, is that the builders of the great pyramid preferred the Pole-star method to the shadow method, as a means of determining the true position of latitude 30° north. They seem to have applied this method with great skill considering the means at their disposal, if we suppose that they took no account whatever of the influence of refraction. If they took refraction into account at all they considerably underrated its influence.

Piazzì Smyth's idea that they knew the *precise* position of the thirtieth parallel of latitude, and also the *precise* position of the parallel, where, owing to refraction, the Pole-star would appear to be thirty degrees above the horizon, and deliberately set the base of the pyramid between these limits (not exactly or nearly exactly half-way, but somewhere between them), cannot be entertained for a moment by any one not prepared to regard the whole history of the construction of the pyramid as supernatural. My argument, let me note in passing, is not intended for persons who take this particular view of the pyramid, a view on which reasoning could not very well be brought to bear.

If the star method had been used to determine the position of the parallel of 30° north latitude, we may be certain it would be used also to orient the building. Probably indeed the very structures (temporary, of course) by which the final observations for the latitude had been made, would remain available also for the orientation. These structures would consist of uprights so placed that the line of sight along their extremities (or along a tube perhaps borne aloft by them in a slanting position) the Pole-star could be seen when immediately below or immediately above the pole. Altogether the more convenient direction of the two would be that towards the Pole-star when below the pole. The extremities of these uprights, or the axis of the upraised tube, would lie in a north-and-south line considerably inclined to the horizon, because the pole itself being thirty degrees above the horizon, the Pole-star, whatever star this might be, would be high above the horizon even when exactly under the pole. No star so far from the pole as to pass close to the horizon would be of use even for the work of orientation, while for the work of obtaining the latitude it would be absolutely essential that a star close to the pole should be used.

[Pg 106]

A line along the feet of the uprights would run north-and-south. But the very object for which the great astronomical edifice was being raised, was that the north-and-south line amongst others should be indicated by more perfect methods.

Now at this stage of proceedings, what could be more perfect as a method of obtaining the true bearing of the pole than to dig a tubular hole into the solid rock, along which tube the Pole-star at its lower culmination should be visible? Perfect stability would be thus insured for this fundamental direction line. It would be easy to obtain the direction with great accuracy, even though at first starting the borings were not quite correctly made. And the further the boring was continued downwards towards the south the greater the accuracy of the direction line thus obtained. Of course there could be no question whatever in such underground boring, of the advantage of taking the lower passage of the Pole-star, not the upper. For a line directly from the star at its upper passage would slant downwards at an angle of more than thirty degrees from the horizon, while a line directly from the star at its lower passage would slant downwards at an angle of less than thirty degrees; and the smaller this angle the less would be the length, and the less the depth of the boring required for any given horizontal range.

Besides perfect stability, a boring through the solid rock would present another most important advantage over any other method of orienting the base of the pyramid. In the case of an inclined direction line above the level of the horizontal base, there would be the difficulty of determining the precise position of points under the raised line; for manifest difficulties would arise in letting fall plumb-lines from various points along the optical axis of a raised tubing. But nothing could be simpler than the plan by which the horizontal line corresponding to the underground tube could be determined. All that would be necessary would be to allow the tube to terminate in a tolerably large open space; and from a point in the base vertically above this, to let fall a plumb-line through a fine vertical boring into this open space. It would thus be found how far the point from which the plumb-line was let fall lay, either to the east or to the west of the optical axis of the underground tunnel, and therefore how far to the east or to the west of the centre of the open mouth of this tunnel. Thus the true direction of a north-and-south line from the end of the tube to the middle of the base would be ascertained. This would be the meridian line of the pyramid's base, or rather the meridian line corresponding to the position of the underground passage directed towards the Pole-star when immediately under the pole.

A line at right angles to the meridian line thus obtained would lie due east and west, and the true position of the east-and-west line would probably be better indicated in this way than by direct observation of the sun or stars. If direct observation were made at all, it would be made not on the sun in the horizon near the time of spring and autumn, for the sun's position is then largely affected by refraction. The sun might be observed for this purpose during the summer months, at moments when calculation showed that he should be due east or west, or crossing what is technically the *prime vertical*. Possibly the so-called azimuth trenches on the east side of the great pyramid may have been in some way associated with observations of this sort, as the middle trench is directed considerably to the north of the east point, and not far from the direction in which the sun would rise when about thirty degrees (a favourite angle with the pyramid architects) past the vernal equinox. But I lay no stress on this point. The meridian line obtained from the underground passage would have given the builders so ready a means of determining accurately the east and west lines for the north and south edges of the pyramid's base, that any other observations for this purpose can hardly have been more than subsidiary.

[Pg 107]

It is, of course, well known that there is precisely such an underground tunnelling as the considerations I have indicated seem to suggest as a desirable feature in a proposed astronomical edifice on a very noble scale. In all the pyramids of Ghizeh, indeed, there is such a tunnelling as we might expect on almost any theory of the relation of the smaller pyramids to the great one. But the slant tunnel under the great pyramid is constructed with far greater skill and care than have been bestowed on the tunnels under the other pyramids. Its length underground amounts to more than 350 feet, so that, viewed from the bottom, the mouth, about four feet across from top to bottom on the square, would give a sky range of rather less than one-third of a degree, or about one-fourth more than the moon's apparent diameter. But, of course, there was nothing to prevent the observers who used this tube from greatly narrowing these limits by using diaphragms, one covering up all the mouth of the tube, except a small opening near the centre, and another correspondingly occupying the lower part of the tube from which the observation was made.

It seems satisfactorily made out that the object of the slant tunnel, which runs 350 feet through the rock on which the pyramid is built, was to observe the Pole-star of the period at its lower culmination, to obtain thence the true direction of the north point. The slow motion of a star very near the pole would cause any error in time, as when this observation was made, to be of very little importance, though we can understand that even such observations as these would remind the builders of the pyramid of the absolute necessity of good time-measurements and time-observations in astronomical research.

Finding this point clearly made out, we can fairly use the observed direction of the inclined passage to determine what was the position of the Pole-star at the time when the foundations of the great pyramid were laid, and even what that Pole-star may have been. On this point there has never been much doubt, though considerable doubt exists as to the exact epoch when the star occupied the position in question. According to the observations made by Professor Smyth, the entrance passage has a slope of about $26^{\circ} 27'$, which would have corresponded, when refraction is taken into account, to the elevation of the star observed through the passage, at an angle of about $26^{\circ} 29'$ above the horizon. The true latitude of the pyramid being $29^{\circ} 58' 51''$, corresponding to an elevation of the true pole of the heavens, by about $30^{\circ} 1/2'$ above the horizon, it follows that if Professor Smyth obtained the true angle for the entrance passage, the Pole-star must have been about $3^{\circ} 31-1/2'$ from the pole. Smyth himself considers that we ought to infer the angle for the entrance passage from that of other internal passages, presently to be mentioned, which he thinks were manifestly intended to be at the same angle of inclination, though directed southwards instead of northwards. Assuming this to be the case, though for my own part I cannot see why we should do so (most certainly we have no *à priori* reason for so doing), we should have $26^{\circ} 18'$ as about the required angle of inclination, whence we should get about $3^{\circ} 42'$ for the distance of the Pole-star of the pyramid's time from the true pole of the heavens. The difference may seem of very slight importance, and I note that Professor Smyth passes it over as if it really were unimportant; but in reality it corresponds to somewhat large time-differences. He quotes Sir J. Herschel's correct statement, that about the year 2170 B.C. the star Alpha Draconis, when passing below the pole, was elevated at an angle of about $26^{\circ} 18'$ above the horizon, or was about $3^{\circ} 42'$ from the pole of the heavens (I have before me, as I write, Sir J. Herschel's original statement, which is not put precisely in this way); and he mentions also that somewhere about 3440 B.C. the same star was situated at about the same distance from the pole. But he omits to notice that since, during the long interval of 1270 years, Alpha Draconis had been first gradually approaching the pole until it was at its nearest, when it was only about $3-1/2'$ from that point, and then as gradually receding from the pole until again $3^{\circ} 42'$ from it, it follows that the difference of nine or ten minutes in the estimated inclination of the entrance passage corresponds to a very considerable interval in time, certainly to not less than fifty years. (Exact calculation would be easy, but it would be time wasted where the data are inexact.)

[Pg 108]

Having their base properly oriented, and being about to erect the building itself, the architects would certainly not have closed the mouth of the slant tunnel pointing northwards, but would have carried the passage onwards through the basement layers of the edifice, until these had reached the height corresponding to the place where the prolongation of the passage would meet the slanting north face of the building. I incline to think that at this place they would not be content to allow the north face to remain in steps, but would fit in casing stones (not necessarily those which would eventually form the slant surface of the pyramid, but more probably slanted so as to be perpendicular to the axis of the ascending passage.) They would probably cut a square aperture through such slant stones corresponding to the size of the passage elsewhere, so as to make the four surfaces of the passage perfectly plane from its greatest depth below the base of the pyramid to its aperture, close to the surface to be formed eventually by the casing stones of the pyramid itself.

[Pg 109]

Now, in this part of his work, the astronomical architect could scarcely fail to take into account the circumstance that the inclined passage, however convenient as bearing upon a bright star near the pole when that star was due north, was, nevertheless, not coincident in direction with the true polar axis of the celestial sphere. I cannot but think he would in some way mark the position of their true polar axis. And the natural way of marking it would be to indicate where the passage of his Pole-star *above* the pole ceased to be visible through the slant tube. In other words he would mark where a line from the middle of the lowest face of the inclined passage to the middle of the upper edge of the mouth was inclined by twice the angle $3^{\circ} 42'$ to the axis of the passage. To an eye placed on the optical axis of the passage, at this distance from the mouth the middle of the upper edge of the mouth would (*quam proximè*) show the place of the true pole of

the heavens. It certainly is a singular coincidence that at the part of the tube where this condition would be fulfilled, there is a peculiarity in the construction of the entrance passage, which has been indeed otherwise explained, but I shall leave the reader to determine whether the other explanation is altogether a likely one. The feature is described by Smyth as "a most singular portion of the passage—viz., a place where two adjacent wall-joints, similar, too, on either side of the passage, were vertical or nearly so; while every other wall-joint, both above and below, was *rectangular* to the length of the passage, and, therefore, largely *inclined* to the vertical." Now I take the mean of Smyth's determinations of the transverse height of the entrance passage as 47.23 inches (the extreme values are 47.14 and 47.32), and I find that, from a point on the floor of the entrance passage, this transverse height would subtend an angle of 7° 24' (the range of Alpha Draconis in altitude when on the meridian) at a distance 363.65 inches from the transverse mouth of the passage. Taking this distance from Smyth's scale in Plate xvii. of his work on the pyramid ("Our Inheritance in the Great Pyramid"), I find that, if measured along the base of the entrance passage from the lowest edge of the vertical stone, it falls exactly upon the spot where he has marked in the probable outline of the uncased pyramid, while, if measured from the upper edge of the same stone, it falls just about as far within the outline of the cased pyramid as we should expect the outer edge of a sloped end stone to the tunnel to have lain.

[Pg 110]

It may be said that from the floor of the entrance passage no star could have been seen, because no eye could be placed there. But the builders of the pyramid cannot reasonably be supposed to have been ignorant of the simple properties of plane mirrors, and by simply placing a thin piece of polished metal upon the floor at this spot, and noting where they could see the star and the upper edge of the tunnel's mouth in contact by reflection in this mirror, they could determine precisely where the star could be seen touching that edge, by an eye placed (were that possible) precisely in the plane of the floor.

I have said there is another explanation of this peculiarity in the entrance passage, but I should rather have said there is another explanation of a line marked on the stone next below the vertical one. I should imagine this line, which is nothing more than a mark such "as might be ruled with a blunt steel instrument, but by a master hand for power, evenness, straightness, and still more for rectangularity to the passage axis," was a mere sign to show where the upright stone was to come. But Professor Smyth, who gives no explanation of the upright stone itself, except that it seems, from its upright position, to have had "something representative of setting up, or preparation for the erecting of a building," believes that the mark is as many inches from the mouth of the tunnel as there were years between the dispersal of man and the building of the pyramid; that thence downwards to the place where an ascending passage begins, marks in like manner the number of years which were to follow before the Exodus; thence along the ascending passage to the beginning of the great gallery the number of years from the Exodus to the coming of Christ; and thence along the floor of the grand gallery to its end, the interval between the first coming of Christ and the second coming or the end of the world, which it appears is to take place in the year 1881. It is true not one of these intervals accords with the dates given by those who are considered the best authorities in Biblical matters,—but so much the worse for the dates.

To return to the pyramid.

We have considered how, probably, the architect would plan the prolongation of the entrance passage to its place of opening out on the northern face. But as the pyramid rose layer by layer above its basement, there must be ascending passages of some sort towards the south, the most important part of the sky in astronomical research.

The astronomers who planned the pyramid would specially require four things. First, they must have the ascending passage in the absolutely true meridian plan; secondly, they would require to have in view, along a passage as narrow as the entrance tunnel, some conspicuous star, if possible a star so bright as to be visible by day (along such a tunnel) as well as by night; thirdly, they must have the means of observing the sun at solar noon on every day in the year; and fourthly, they must also have the entire range of the zodiac or planetary highway brought into view along their chief meridional opening.

[Pg 111]

The first of these points is at once the most important and the most difficult. It is so important, indeed, that we may hope for significant evidence from the consideration of the methods which would suggest themselves as available.

Consider:—The square base has been duly oriented. Therefore, if each square layer is placed properly, the continually diminishing square platform will remain always oriented. But if any error is made in this work the exactness of the orientation will gradually be lost. And this part of the work cannot be tested by astronomical observations as exact as those by which the base was laid, unless the vertical boring by which the middle of the base, or a point near it, was brought into connection with the entrance passage, is continued upwards through the successive layers of the pyramidal structure. As the rock rises to a considerable height within the interior of the pyramid,^[44] probably to quite the height of the opening of the entrance passage on the northern slope, it would only be found necessary to carry up this vertical boring on the building itself after this level had been reached. But in any case this would be but an unsatisfactory way of obtaining the meridian plane when once the boring had reached a higher level than the opening of the entrance passage; for only horizontal lines from the boring to the inclined tunnelling would be of use for exact work, and no such lines could be drawn when once the level of the upper end of the entrance passage had been passed by the builders.

A plan would be available, however (not yet noticed, so far as I know, by any who have studied the astronomical relations of the great pyramid), which would have enabled the builders perfectly to overcome this difficulty.

Suppose the line of sight down the entrance passage were continued upwards along an ascending passage, after reflection at a perfectly horizontal surface—the surface of still water—then by the simplest of all optical laws, that of the reflection of light, the descending and ascending lines of sight on either side of the place of reflection, would lie in the same vertical plane, that, namely, of the entrance passage, or of the meridian. Moreover, the farther upwards an ascending passage was carried, along which the reflected visual rays could pass, the more perfect would be the adjustment of this meridional plane.

To apply this method, it would be necessary to temporarily plug up the entrance passage where it passed into the solid rock, to make the stone-work above it very perfect and close fitting, so that whenever occasion arose for making one of the observations we are considering, water might be poured into the entrance passage, and remain long enough standing at the corner (so to speak) where this passage and the suggested ascending passage could meet, for Alpha Draconis to be observed down the ascending passage. Fig. 2 shows what is meant. Here D C is the descending passage, C A the ascending passage, C the corner where the water would be placed when Alpha Draconis was about to pass below the pole. The observer would look down A C, and would see Alpha Draconis by rays which had passed down D C, and had been reflected by the water at C. Supposing the building to have been erected, as Lepsius and other Egyptologists consider, at the rate of one layer in each year, then only one observation of the kind described need be made per annum. Indeed, fewer would serve, since three or four layers of stone might be added without any fresh occasion arising to test the direction of the passage C A.

[Pg 112]

It is hardly necessary to remind those who have given any attention to the subject of the pyramid that there is precisely such an ascending passage as C A, and that as yet no explanation of the identity of its angle of ascent with the angle of descent of the passage D C has ever been given. Most pyramidalists content themselves by assuming, as Sir E. Beckett puts it, "that the same angle would probably be used for both sets of passages, *as there was no reason for varying it*," which is not exactly an explanation of the relation. Mr. Wachterbarth has suggested that the passages were so adjusted for the purpose of managing a system of balance cars united by ropes from one passage to another; but this explanation is open, as Beckett points out, to the fatal objection that the passages meet at their lowest point, not at their highest, so that it would be rather a puzzle "to work out the mechanical idea." The reflection explanation is not only open to no such objections, but involves precisely such an application of optical laws as we should expect from men so ingenious as the pyramid builders certainly were. In saying this, let me explain, I am not commending myself for ingenuity in thinking of the method, simply because such methods are quite common and familiar in the astronomy of modern times.

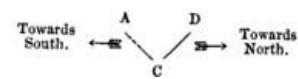


Fig. 2.

While I find this explanation, which occurred to me even while this paper was in writing, so satisfactory that I feel almost tempted to say, like Sir G. Airy of his explanation of the Deluge as an overflow of the Nile, that "I cannot entertain the slightest doubt" of its validity, I feel that there ought to be some evidence in the descending passage itself of the use of this method. We might not find any traces of the plugs used to stop up, once a year or so, the rock part of the descending passage. For they would be only temporary arrangements. But we should expect to find the floor of the descending passage constructed with special care, and very closely fitted, where the water was to be received.

[Pg 113]

Inquiring whether this is so, I find not only that it is, but that another hitherto unexplained feature of the great pyramid finds its explanation in this way,—the now celebrated "secret sign." Let us read Professor Smyth's account of this peculiar feature:—

"When measuring the cross-joints in the floor of the entrance-passage, in 1865, I went on chronicling their angles, each one proving to be very nearly at right angles to the axis, until suddenly one came which was *diagonal*; another, and that was diagonal too; but, after that, the rectangular position was resumed. Further, the stone material carrying these diagonal joints was harder and better than elsewhere in the floor, so as to have saved that part from the monstrous excavations elsewhere perpetrated by some moderns. Why, then, did the builders change the rectangular joint angle at that point, and execute such unusual angles as they chose in place of it, in a better material of stone than elsewhere; and yet with so little desire to call general attention to it, that they made the joints fine and close to that degree that they escaped the attention of all men until 1865 A.D. The answer came from the diagonal joints themselves, on discovering that the stone between them was opposite to the butt end of the portcullis of the first ascending passage, or to the hole whence the prismatic stone of concealment through 3000 years had dropped out almost before Al Mamoun's eyes. Here, therefore, was a secret sign in the pavement of the entrance-passage, appreciable only to a careful eye and a measurement by angle, but made in such hard material that it was evidently intended to last to the end of human time with the great pyramid, and *has* done so thus far."

Whether Professor Smyth is right in considering that this specially-prepared position of the floor

was intended not for any practical purpose, but to escape the notice of the careless, while yet, when the right men "at last, duly instructed, entered the passage," this mysterious floor-sign should show them where a ceiling-stone was movable, on perceiving which they "would have laid bare the beginning of the whole train of those sub-aërial features of construction which are the great pyramid's most distinctive glory, and exist in no other pyramid in Egypt or the world," I leave the reader to judge. I would remark, only, that, if so, the builders of the pyramid were not remarkably good prophets, seeing that the event befell otherwise, the ceiling-stone dropping out a thousand years or so before the floor-sign was noticed; wherefore we need not feel altogether alarmed at their own prediction (according to Professor Smyth), that the end of the world is to come in 1881, even as Mother Shipton also is reported to have prophesied. For my own part, I am quite content with my own interpretation of the secret sign; as showing where the floor of the descending passage was purposely prepared for the reception of water, on the still surface of which the Pole-star of the day might be mirrored for one looking down the ascending passage.

Albeit, I cannot but think that this ascending passage must also have been so directed as to show some bright star when due south. For if the passage had only given the meridian plane, but without permitting the astronomer to observe the southing of any fixed star, it would have subserved only one-half its purposes as a meridional instrument. It is to be remembered that, supposing the ascending passage to have its position determined in the way I have described, there would be nothing to prevent its being also made to show any fixed star nearly at the same elevation. For it could readily be enlarged in a vertical direction, the floor remaining unaltered. Since it is not enlarged until the great gallery is reached (at a distance of nearly 127 feet from the place where the ascent begins), it follows, or is at least rendered highly probable, that some bright star was in view through that ascending passage.

[Pg 114]

Now, taking the date 2170 B.C., which Professor Smyth assigns to the beginning of the great pyramid, or even taking any date (as we fairly may), within a century or so on either side of that date, we find no bright star which would have been visible when due south, through the ascending passage. I have calculated the position of that circle among the stars along which lay all the points passing $26^{\circ} 18'$ above the horizon when due south, in the latitude of Ghizeh, 2170 years before the Christian era; and it does not pass near a single conspicuous star.^[45] There is only one fourth magnitude star which it actually approaches—namely, Epsilon Ceti; and one fifth magnitude star, Beta of the Southern Crown.

When we remember that Egyptologists almost without exception assert that the date of the builders of the great pyramid *must* have been more than a thousand years earlier than 2170 B.C., and that Bunsen has assigned to Menes the date 3620 B.C., while the date 3300 B.C. has been assigned to Cheops or Suphis on apparently good authority, we are led to inquire whether the other epoch when Alpha Draconis was at about the right distance from the pole of the heavens may not have been the true era of the commencement of the great pyramid. Now, the year 3300 B.C., though a little late, would accord fairly well with the time when Alpha Draconis was at the proper distance $3\frac{2}{3}^{\circ}$ from the pole of the heavens. If the inclination of the entrance-passage is $26^{\circ} 27'$, as Professor Smyth made it, the exact date for this would be 3390 B.C.; if $26^{\circ} 40'$, as others made it before his measurements, the date would be about 3320 B.C., which would suit well with the date 3300 B.C., since a century either way would only carry the star about a third of a degree towards or from the pole.

Now, when we inquire whether in the year 3300 B.C. any bright star would have been visible, at southing, through the ascending passage, we find that a very bright star indeed, an orb otherwise remarkable as the nearest of all the stars, the brilliant Alpha Centauri, shone as it crossed the meridian right down that ascending tube. It is so bright that, viewed through that tube, it must have been visible to the naked eye, even when southing in full daylight.

[Pg 115]

But thirdly, we must consider how the builders of the pyramid would arrange for the observation of the sun at noon on every clear day in the year.

They would carry up the floor of the ascending passage in an unchanged direction, as it already pointed south of the lowest place of the noon sun at mid-winter. They would have to turn the tunnel into a lofty gallery, to increase the vertical range of view on the meridian. It seems reasonable to infer that they would prefer so to arrange matters that the upper end of the gallery would be near the middle of the platform which would form the top of the pyramidal structure from the time when it was completed for observational purposes. The height of the gallery would be so adjusted to its length, that the mid-winter's sun would not shine further than the lower end of the gallery (that is, to the upper end of the smaller ascending passage). In fact, as the moon and planets would have to be observed when due south, through this meridional gallery, and as they range further from the equator both north and south than the sun does, it would be necessary that the gallery should extend lower down than the sun's mid-winter noon rays would shine.

As it would be a part of the observer's work to note exactly how far down the gallery the shadow of its upper southern edge reached, as well as the moment when the sun's light passed from the western to the eastern wall of the gallery, and other details of the kind; besides, of course, taking time-observations of the moment when the sun's edge seemed to reach the edge of the gallery's southern opening; and as such observations could not be properly made by men standing on the smooth slanting floor of the gallery, it would be desirable to have cross-benches capable of being set at different heights along the sloping gallery. In some observations, indeed, as where the transits of several stars southing within short intervals of time had to be observed, it would be

necessary to set some observers at one part of the gallery, others at another part, and perhaps even to have several sets of observers along the gallery. And this suggests yet another consideration. It might be thought desirable, if great importance was attached (as the whole building shows that great importance must have been attached) to the exactness of the observations, to have several observations of each transit of a star across the mouth of the gallery. In this case, it would be well to have the breadth of the gallery different at different heights, though its walls must of necessity be upright throughout—that is, the walls must be upright from the height where one breadth commences, to the height where the next breadth commences. With a gallery built in this fashion, it would be possible to take several observations of the same transit, somewhat in the same way that the modern observer watches the transit of a star across each of five, seven, or nine parallel spider threads, in order to obtain a more correct time for the passage of the star across the middle thread, than if he noted this passage alone.

[Pg 116]

How far the grand gallery corresponds with these requirements can be judged from the following description given by Professor Greaves in 1638:—"It is," he says, "a very stately piece of work, and not inferior, either in respect of the curiosity of art, or richness of materials, to the most sumptuous and magnificent buildings," and a little further on he says, "this gallery, or corridor, or whatever else I may call it, is built of white and polished marble (limestone), the which is very evenly cut in spacious squares or tables. Of such materials as is the pavement, such is the roof and such are the side walls that flank it; the coagmentation or knitting of the joints is so close, that they are scarce discernible to a curious eye; and that which adds grace to the whole structure, though it makes the passage the more slippery and difficult, is the acclivity or rising of the ascent. The height of this gallery is 26 feet" (Professor Smyth's careful measurements show the true height to be more nearly 28 feet), "the breadth of 6.870 feet, of which 3.435 feet are to be allowed for the way in the midst, which is set and bounded on both sides with two banks (like benches) of sleek and polished stone; each of these hath 1.717 of a foot in breadth, and as much in depth." These measurements are not strictly exact. Smyth made the breadth of the gallery above the banks or ramps as he calls them, 6 feet 10-1/5 inches; the space between the ramps, 3 feet 6 inches; the ramps nearly about 1 foot 8-1/14 inches broad, and nearly 1 foot 9 inches high, measured transversely, that is at right angles to the ascending floor.

As to arrangements for the convenience of observers in the slippery and difficult floor of this gallery, we find that upon the top of these benches or ramps, near the angle where they meet the wall, "there are little spaces cut in right-angled parallel figures, set on each side opposite one another, *intended no question for some other end than ornament.*"

The diversity of width which I have indicated as a desirable feature in a meridional gallery, is a marked feature of the actual gallery. "In the casting and ranging of the marbles" (limestone), "in both the side walls, there is one piece of architecture," says Greaves, "in my judgment very graceful, and that is that all the courses or stones, which are but seven (so great are these stones), do set and flag over one another about three inches; the bottom of the uppermost course overlapping the top of the next, and so in order, the rest as they descend." The faces of these stones are exactly vertical, and as the width of the gallery diminishes upwards by about six inches for each successive course, it follows that the width at the top is about 3-1/2 feet less than the width, 6 feet 10-1/5 inches, at the bottom, or agrees in fact with the width of the space between the benches or ramps. Thus the shadow of the vertical edges of the gallery at solar noon just reached to the edges of the ramps, the shadow of the next lower vertical edges falling three inches from the edges higher up the ramps, those of the next vertical edges six inches from these edges, still higher up, and so forth. The true hour of the sun's southing could thus be most accurately determined by seven sets of observers placed in different parts of the gallery, and near mid-summer, when the range of the shadows would be so far shortened, that a smaller number of observers only could follow the shadows' motions; but in some respects, the observations in this part of the year could be more readily and exactly made than in winter, when the shadows' spaces of various width would range along the entire length of the gallery.

[Pg 117]

Similar remarks would apply to observations of the moon, which could also be directly observed. The planets and stars of course could only be observed directly.

The grand gallery could be used for the observation of any celestial body southing higher than 26° 18' above the horizon; but not very effectively for objects passing near the zenith. The Pleiades could be well observed. They southed about 63-2/3° above the horizon in the year 2140 B.C. or thereabouts when they were on the equinoctial colure.^[46] But if I am right in taking the year 3300 B.C. when Alpha Centauri shone down the smaller ascending passage in southing, the Pleiades were about 58° only above the horizon when southing, and therefore even more favourably observable from the great meridional gallery.

In passing I may note that at this time, about 3300 years before our era, the equinoctial point (that is, the point where the sun passes north of the equator, and the year begins according to the old manner of reckoning) was midway between the horns of the Bull. So that then, and then alone, a poet might truly speak of spring as the time

"Candidus auratis aperit quum cornibus annum
Taurus."

as Virgil incorrectly did (repeating doubtless some old tradition) at a later time. Even Professor Smyth notices the necessity that the pyramid gallery should correspond in some degree with such a date. "For," says he, "there have been traditions for long, whence arising I know not, that

the seven overlappings of the grand gallery, so impressively described by Professor Greaves, had something to do with the Pleiades, those proverbially seven stars of the primeval world," only that he considers the pyramid related to *memorial* not *observing* astronomy, "of an earlier date than Virgil's." The Pleiades also, it may be remarked, were scarcely regarded in old times as belonging to the constellation of the Bull, but formed a separate asterism.

The upper end of the great gallery lies very near the vertical axis of the pyramid. It is equidistant, in fact, from the north and south edges of the pyramid platform at this level, but lies somewhat to the east of the true centre of this platform. One can recognise a certain convenience in this arrangement, for the actual centre of the platform would be required as a position from whence observation of the whole sky could be made. Observers stationed there would have the cardinal points and the points midway between them defined by the edges and angles of the square platform, which would not be the case if they were displaced from the centre. Stationed as they would be close to the mouth of the gallery, they would hear the time signalings given forth by the observers placed at various parts of the gallery; and no doubt one chief end of the exact time-observations for which the gallery was manifestly constructed, would be to enable the platform observers duly to record the time when various phenomena were noticed in any part of the heavens.

[Pg 118]

This corresponds well with the statement made by Proclus, that the pyramids of Egypt, which, according to Diodorus Siculus, had been in existence during 3600 years, terminated in a platform upon which the priests made their celestial observations. The last-named historian alleges, also (Biblioth. Hist. Lib. I.), that the Egyptians, who claimed to be the most ancient of men, professed to be acquainted with the situation of the earth, the risings and settings of stars, to have arranged the order of days and months, and pretended to be able to predict future events, with certainty, from their observations of celestial phenomena. I think that it is in this association of astrology with astronomy that we find the explanation of what, after all, remains the great mystery of the pyramid—the fact, namely, that all the passages, ascending, descending, and horizontal, constructed with such extreme care, and at the cost of so much labour, in the interior of the great pyramid, were eventually (perhaps not very long after their construction) to be closed up. I reject utterly the idea that they could have been constructed merely as memorials. Sir E. Beckett, who seems willing to admit this conception, rejects the notion that the builders of the pyramid recorded "standard measures by hiding them with the utmost ingenuity." Is it not equally absurd to imagine that they recorded the date of the great pyramid, by construction, by those most elaborately concealed passages? Why they should have concealed them after constructing them so carefully, may not be clear. For my own part, I regard the theory that the Pyramid of Suphis was built for astrological observations, relating to the life of that monarch only, as affording the most satisfactory explanation yet advanced of the mysterious circumstance that the building was closed up after his death. Supposing the part of the edifice (fifty layers in all), which includes the ascending and descending passages, to have been erected during his lifetime, it may be that some reverential or superstitious feeling caused his successors, or the priesthood, to regard the building as sacred after his death—to be closed up therefore and completed as a perfect pyramid, polished *ad unguem* from its pointed summit to the lines along which the four faces met the smooth pavement round its base. We might thus explain why each monarch required his own astrological observatory afterwards to become his tomb. Be this as it may, it is certain that the pyramids were constructed for astronomical observations; and it would, I conceive, be utterly unreasonable to imagine that the costly interior fittings and arrangements, "not inferior, in respect of curiosity of art or richness of materials, to the most sumptuous and magnificent buildings," were intended to subserve no other purpose but to be memorials; and that, too, not until, in the course of thousands of years, the whole mass of the pyramid had begun to lose the exactness of its original figure.

[Pg 119]

R. A. PROCTOR.

[Pg 120]

CONSPIRACIES IN RUSSIA UNDER THE REIGNING CZAR.

I.

Much astonishment has been expressed of late, by those who are too apt to forget the main facts even of contemporary history, that under "so benevolent a prince as Alexander II." the most fearful conspiracies should have become rife. This view of the situation shows a misconception of the whole system of government in Russia, and more especially of the character of the ruling Autocrat, as it has been formed by his education and by the ever-worsening course of his reign. For the proper understanding of what has occurred within the last twelve years or so, we must consequently go back for a moment to Alexander's early training and antecedents. No despotic system can be judged without a knowledge of personal facts relating to its bearer. A sketch of the character of Alexander II. and of his strange acts of "benevolence," will make it clear to the commonest comprehension why his antagonists should at last have met him by wild deeds of conspiracy.

Alexander's arbitrary bias may be said to have been inherited in his blood. A disposition, originally, perhaps, less severe than that of Nicholas, was darkened and vitiated in him from his early days. Custine already remarked the expression of deep melancholy in the Grand Duke; and

all those who have seen Alexander II. since have been struck with his sour and sullen morosity. No smile ever lights up this "humane" Czar's face. His uneasy glance is that of the misanthrope; his brow seems overcast as with the lowering shadow of a tragic fate. The harsh way in which he was brought up by his martinet father, without the slightest regard for his somewhat delicate health, no doubt laid a foundation for this pensive sadness, which, under a pernicious Court atmosphere, and with the terrible recollections crowding about his family history, gradually changed into the fierceness of the Tyrant.

[Pg 121]

Poor royal humanity is sometimes strangely led up to its task in life. Almost from infancy the sickly boy had to don the soldier's uniform. All joyous sprightliness was crushed out of the infantine heir of a barbarous Imperialism. His education by the crowned corporal who happened to be his parent, appeared to aim mainly at making him physically and in character as rigid as a ramrod. By nature of a sensuous bent, he had to undergo all the ordeals of barrack-room practices, which Nicholas held to be the proper sum and substance of human life.

The stern nature and teaching of that typical tyrant came out one day in a striking manner during the early boyhood of Alexander. Even Imperial children do not seem to be able to shake off the dark historical recollections that hang about the Winter Palace. In the manner of children they will make a ghastly sport of them. Once, when they were in a specially jocular mood, Alexander, in company with his brother Constantine and some comrades in play, enacted—as youngsters in their apishly imitative mood will do—one of the most hideous scenes that concluded a previous reign. The throttling of the Emperor Paul was the subject! Alexander, standing for Paul, was assaulted and thrown down by his brother, who knelt upon his chest. With the aid of the sportive accomplices, a cord was passed round the victim's throat. It is said that young Constantine took a malicious pleasure in putting into this semblance of strangulation rather an unexpected deal of energy.

"For mercy's sake! For mercy's sake!" Alexander cried, with half-stifled voice, and at last with a fearful yell.

Nicholas, hurrying out from his room, beheld the spectacle before him in deep consternation. When the matter was explained to him, he severely reproved and actually punished his eldest-born. "It is not worthy of an Emperor," he said, "to call out for mercy!"

This well-authenticated anecdote has been told by writers who expressed the most adulatory sentiments towards the present Czar. It is to be found in Castille's highly flattering biography of Alexander II., published about the time of his accession to the throne. The incident, loathsome as it must appear to every sensitive mind, strikingly paints both the gloom that always hangs about the Russian Court, and the kind of education given by Nicholas to his offspring.

The youthful despotic propensities of Alexander may be seen from an account given by another of his admiring biographers, Mr. J. G. Hesekei. This writer enthusiastically swings the censer before Nicholas as the "Iron Knight of Legitimacy" and the "Invincible Champion of Government by the Grace of God." (I may mention in passing that Mr. Hesekei has done the life of Prince Bismarck into similar adulatory prose). At the age of fourteen—he relates—the boy-prince, Alexander, in going through a state room of the Palace, was respectfully greeted by the assembled high dignitaries of the Empire, senators, generals, and so forth. They all rose and bowed before the Heir-Apparent. The boy's vanity being flattered, he purposely came back several times, expecting the grey-beards on each occasion to rise and salaam before him. When he found that they thought they had done their duty by the first salutation, he angrily complained against them to his father. Nicholas, however, blamed the son for his unreasonable exaction. This vicious arrogance of the boy ripened afterwards into the haughtiness of the despot, being but slightly mitigated by a naturally melancholy disposition, which sometimes gave the appearance of comparative softness.

[Pg 122]

Of Constantine, the second son of Nicholas, there is a further characteristic anecdote on record. It is to be found even in publications otherwise marked by servile feelings towards the Court. We all know at what a supernaturally early age the purple-born are appointed to high titular positions in the State Administration or in the army. In Russia, where the "right divine of kings to govern wrong" is pushed to its most logical or illogical consequences, this royal custom flourishes to excess. At the mature age of eight, Alexander was appointed Chancellor of the University of Finland. His brother Constantine was nominated in early youth High Admiral of the Fleet. One day, Constantine, between whom and his elder brother there was little love lost, had Alexander arrested because he had come on board ship without special authorization. Something of the sentiment of Franz Moor, in Schiller's *Robbers*, seems to have animated Constantine in his youth. He was often heard to utter a malediction against the law of heredity. He declared that, being born when his father (Nicholas) was already on the throne, he (Constantine) had a better right of succession than Alexander, who had been born when Nicholas was only a Grand Duke. He further said that, after the death of Nicholas, he would contend against Alexander with the object of partitioning the Empire.

These may seem trifling occurrences—mere freaks of childhood. They would certainly be so regarded in countries where the nation practically possesses self-government and the Crown is mainly an ornamental cipher, or where the sovereign privilege is at least largely circumscribed by the parliamentary power. It is different in an Empire like Russia, with its murderous dynastic antecedents. There, the personal character of the princely personages is of the utmost importance; for a youthful freak or hideous trick may point to a coming horrible event. In olden times, previous to the Tatar dominion, Russia passed through the so-called Appanage Period of

Separate Principalities, when the Empire was actually partitioned. The feuds which then tore the various branches of the Rurik family greatly facilitated the Mongol conquest that weighed upon the country for centuries. With the condition of Russia such as it was until lately, and still is for that matter, a bold attempt on the part of a Prince second in birth could not be said to be beyond the range of possibility. Even now we hear of a deep estrangement between the ruling Autocrat and the Czarewitch, reaching even to such an extent that for a moment there was an intention of arresting the latter.

[Pg 123]

Nothing has come of the childish threat of the Grand Duke Constantine, who to this day fills the post of Admiral-General of the Russian Fleet. Still, the incident alluded to has its value. When a whole nation is disinherited from political rights, a younger member of the ruling House, of violent and ambitious temper, may easily take the idea into his head of altering, by a palace plot, the very basis of the Empire for his own special benefit. What looks like boyish play may in time to come turn into a tragedy. These dangers, characteristic of all autocracies, can only be done away with by the introduction of a settled order of Constitutional law, conferring the chief power in the State upon representative bodies.

II.

The death of Nicholas, shortly before the end of the Crimean War, remains to this day enshrouded in darkness and doubt.

His proud spirit had been deeply humiliated by a series of defeats. He who once posed as the arbiter of the destinies of Continental Europe had been beaten, not only by the Western Allies, but, before that, even by the Turks single-handed. He wrathfully avowed that "he had been deceived as to the state of public opinion in England." The messengers of the Peace Society, the language held by the organs of the Manchester school, had emboldened him to try to realize the secular dream of Russian despots,—namely, the conquest of Constantinople. The disenchantment he experienced gave even his iron frame a terrible shock. Yet his haughty temper forbade him to entertain offers of, still more to sue for, peace. Those surrounding him, including his nearest by kinship, were afraid of angering the ruthless man by unwelcome counsel.

At the same time vague murmurs were heard in society against the absolutistic *régime* which had led Russia to the brink of utter ruin. From the southern part of the Empire, where opinion, since the days of Cossack and Ukraine independence, had always been the most advanced, threatening tales came up of a spirit of rebellion among the peasantry, upon whom the relay duties and other hardships connected with the war weighed most heavily. There was a universal feeling that the removal of Nicholas from this world's stage would be a blessing.

In the midst of this darkening situation men learnt that the Czar was slightly indisposed; immediately afterwards, that he was—*dead*. He had only taken a cold; but the illness—as the manifesto of Alexander II. afterwards said—"developed itself with incredible rapidity." The manifesto added:—"Let us bow before the mysterious decrees of Providence!"

Was the mystery a real or merely an apparent one?

Abroad a rumour quickly spread of foul play having once more taken place in the Winter Palace. In the German and the Danish press—for instance, in the Copenhagen *Faedrelandet*, and the Berlin *National Zeitung* and *Volks-Zeitung*—surmises were openly uttered that the Russian Emperor had died from poison. Not a few thought he had fallen a victim to a palace plot in the interest of the maintenance of the dynasty which was endangered by his obstinacy. In a medical journal of this country it was shown that the bulletins concerning the course of his illness were, at all events, quite at variance with well-known physiological laws. In a lithographed pamphlet—attributed to Dr. Mandt, the physician-in-ordinary to Nicholas—it was alleged that the Czar, in a fit of life-weariness, had himself asked for strychnine, and forced his physician to prepare it for him. A noted Russian writer, Mr. Ivan Golovin, in a book published at Leipzig about eight years ago,^[47] refers to the statement of this pamphlet. He himself remarks that the reason for the head of the Emperor having been covered up, when lying in state, was, that his features were so terribly disfigured by the poison as to render it advisable to conceal the face.

[Pg 124]

It is impossible to unravel the truth. This much can, however, be said beyond mere probability, that, if Nicholas had not been suddenly taken away, the contrast between his iron rule at home and his continued defeats on the field of battle would have roused a spirit of rebellion and mutiny very similar to that against which he had to contend in the ensanguined streets of the capital at the beginning of his reign. As it was, men expected that his successor would prove more pliant. The prevailing feeling of dissatisfaction did not, therefore, at first assume a revolutionary shape.

Perhaps it was a consciousness of being surrounded by men who watched him closely which made Alexander II. speak out in rather a peremptory tone in his manifesto of March 2, 1855. Monarchs who fear an attack upon their sovereign privileges often seek to terrify their would-be antagonists by bold language. "I hereby declare solemnly," Alexander said, "that I will remain faithful to all the views of my father, and *persevere in the line of political principles* which have served as guiding maxims both to my uncle, Alexander I., and to him. These principles are those of the Holy Alliance. If that Alliance no longer exists, it is certainly not the fault of my august father." The fling against Austria, which had half taken the side of the Western Allies in the Crimean War, and the covert reference to Prussia, which had refused making common military cause with Russia, was unmistakable.

So far as public opinion existed then, or could make itself heard in the Czar's Empire, the impression of this manifesto was a highly unfavourable one. Its allusions to the maintenance of the political principles of Nicholas and to the maxims of the Holy Alliance were little relished—all the less so, because there was not a word about coming reforms. Military preparations were continued. The whole country seemed to be destined to become a military camp. No prospects were held out either of the emancipation of the serfs, or of the admission of any section of the nation to a share in the Government.

[Pg 125]

Soon, however, Alexander II. had to alter his tone. The wave of public discontent rising ever higher, whilst the Russian arms suffered defeat after defeat, peace had to be concluded, and the full stringency of the despotic rule could no longer be maintained. Gortschakoff was substituted for Nesselrode in the Chancellorship. At that time this was almost considered progress—so unspeakably degrading was the slavery of the nation, and so apt are men in their despair to catch at a straw.

Gortschakoff, nevertheless, pronounced the famous saying, "*La Russie ne boude pas; elle se recueille!*" The old war policy had been scotched, not killed. Scarcely had the army returned from the campaign, before Government busied itself with a well-studied plan for a network of railways, not in the commercial, but in the strategical interest. With the same object of an ulterior return to the aggressive war policy, Alexander II. sought an interview with Napoleon III. soon after the conclusion of the Crimean War. Piedmont, also, was diplomatically approached in a remarkably friendly manner. England was to be isolated. Revenge was to be ultimately taken against her. Between all these significant, though somewhat weak attempts, the new Czar addressed to the Marshals of the Polish nobility at Warsaw his threatening words:—"Before all, no dreams, gentlemen!... If need be, I shall know how to punish with the utmost severity; and with the utmost severity I mean to punish!" ("*Avant tout, point de rêveries, messieurs!... Au besoin, je saurai sévir, et je sévirai!*")

Thus the autocratic vein strongly stood out even in this more sickly type of a barbarous autocracy. It is the fashion at present, at least among some who take the name of "philosophical Radicals" in vain when they curtsy before a Machiavellian tyrant, to dwell with admiring pride upon the philanthropic character of Alexander the Benevolent. All the cardinal virtues are his. He is the Liberator of the Serfs, the Deliverer of Downtrodden Nationalities, the Educator and Friend of the People—a monstrous paragon of princely perfection. The truth is that this Czar, albeit lacking the nerve of his sire, has from early youth shown the full absolutistic bent. Dire necessity only brought him to the accomplishment of some reforms. But the evidence before us clearly shows that in this he acted on the well-known lines of despotic calculation, and that he never did good without the intention of thereby preventing what to him appeared to be the greater evil for his position as an irresponsible autocrat, by the so-called "Grace of God."

III.

So deeply shaken was the Empire by the events of 1853-56, that Alexander did not dare for several years—in fact, not until 1863—to ordain any fresh recruitment for the army. This necessity greatly diminished the oppressive power of the Crown. At the same time, public opinion showed signs of a threatening unrest. An "Underground Literature," as it was called, began once more to express the ideas of the better-educated, progressive classes. Among the troops, the "Songs of the Crimean Soldiers," by Tolstoy, an artillery officer, made a great stir. Count Orloff, then Minister of the Police, wrote to the Commanding-General in the South, that he should silence these rebel songs. The General somewhat bluntly replied, "Please come yourself, and try to silence them!"

[Pg 126]

Among the secret publications then in vogue there were some political poems of Pushkin, hitherto only known in clandestine manuscript form. Pushkin is often called, with a great deal of exaggeration, the Russian Byron, whereas others will only let him pass as a Byron travestied, wanting in originality, like most of his Russian brother-poets of the end of the last and the beginning of this century. At all events, one of Pushkin's utterances containing the words,

"I hate thee and thy race,
Thou autocratic villain,"

does not lack in allusive clearness. Secretly printed abroad, his writings were largely propagated at Alexander the Second's accession. Again, men like Lawroff—who, ten years later, was imprisoned as a suspect, after Karakasoff's attempt against the life of the Czar—had celebrated the advent of the successor of Nicholas with such ironically questionable sentiments as this:—

"Be proud, ye Russian men,
Of being the slaves of a Czar!"

Writers of comedies, novelists, delineators of the life of the people, ultra-realistic and cynical describers of the criminal classes arose in rapid succession, whose tendency, one and all, was to show to what a state of corruption Russian society, from top to bottom, had come under the famous "Champion of Order," the dreaded Nicholas. That Czar had been in the habit of speaking of Turkey as the Sick Man. Russia was now shown to be the Sick Man. Neither did St. Petersburg, Moscow or the other chief towns, alone serve as a theme for this kind of semi-political literature. "Provincial Sketches" also came out in a similar strain. These publications obtained an ever-increasing success among those classes—few in number, it is true—which were

able to read. A whole "Revelation Literature" sprang up, dealing with cases of governmental corruption. The censorship could not be upheld any longer against these writers with the strict severity of the previous reign. A beaten Absolutism had to do things a little more cautiously; and the watchful eyes of men hitherto treated like slaves quickly found out, with the rapid glance and intuition of the oppressed, that it was safe to "dare it on" a little more than they would have dreamt of doing before the end of the Crimean War. Truly, those Liberals in this country who now denounce that war as a mistake and even a crime, do not know, or do not care to remember, what a relief it brought to Russian Liberals themselves.

[Pg 127]

Soon after the death of Nicholas, desires, until then only muttered, were publicly expressed for the recall and the amnesty of the Martyrs of the Conspiracy and the Insurrection of December, 1825. Pestel, Ryleieff, Bestujeff-Rumin, and the other leaders, had been strung up on the gallows. Many of those transported to Siberia had died a miserable felon's death in the lead-mines. Brought up in the lap of luxury, they ended like galley-slaves, because they had loved freedom more than wealth and ease. It is reported of one of the political prisoners, a nobleman, that he died in Kamtschatka with a chain round his neck, fastened to the wall. Others had been sent to the Caucasus, which in Russia was long ago said to be "not so much a frontier as a grave-yard." There they had fallen in a hateful war against brave, independent mountain tribes, as the unwilling tools of an aggressive tyranny. Still, some of the sufferers were yet alive—among them men of the foremost families of the country. They had to be allowed to come back. They came—mere shadows and ruins of their former selves. But their decrepit condition was the most telling evidence of the infamy of the Tyrant who had fortunately passed away.

In the salons of the upper classes these suffering witnesses of a terrible past received lavish proofs of admiration. Men would listen with sympathetic avidity to the tales of horror told by them. All those present at such a gathering made it a point to be profuse towards the martyrs with little attentions such as only women ordinarily receive from the other sex. Thirty years—a long time—had passed since the armed struggle in the streets of St. Petersburg. Now, all of a sudden, memories were revived. Political tendencies, which some imagined had died out, came up afresh among a younger generation, for whom the "December Conspiracy" was surrounded with a poetical halo. There was danger in the air for the autocratic principle.

Count Rostoptchin, the same who ordered the burning of Moscow in 1812, said in 1825 he could not understand that attempt at a revolution. He "could understand the French Revolution, because there the ordinary citizen wished to become an aristocrat, but he could not conceive aristocrats wishing to become simple burghers." That was the version of a cynical, though otherwise clever, member of the nobility, who was unable to comprehend the spirit of self-sacrifice for noble aims showing itself even among the wealthy and the "noble" by birth. However, had Count Rostoptchin only been capable of feeling the degradation under which the Russian aristocracy itself lies in its relations with a despotic Crown, he might, even from his own point of view as a mere man of the world, have found a reason for the uprising of independent characters among men of his own rank.

[Pg 128]

IV.

The more cultured and wealthier classes again came to the front as political agitators, at the accession of Alexander. They wanted to throw down the Chinese Wall which Nicholas had built around them—if it is not an insult to the Chinese to compare the wall they erected as a protection against barbarism with the barrier set up by Nicholas against Western ideas of culture and freedom. At first, Alexander II. did not hold out any hope of reform. Driven to straits, he busied himself with throwing a sop to public opinion by various small relaxations in administrative matters. They were small enough; and they were given with a niggard hand.

Anyone taking a survey of the earlier part of the reign of Alexander II. must see that the main object of his government was to foil the tendency towards the introduction of parliamentary institutions, which was sullenly but perceptibly making its way among the better educated section of the nation; that, with the view of attaining this reactionary end, he pursued the traditional despotic policy of approaching the lower classes on the one hand, and engaging the country in fresh warlike enterprise abroad on the other. Foiled in Europe by England and France, he throws his armies, after the conclusion of the Peace of Paris, with renewed fury upon the Tcherkess tribes. They had long barred the way of Russia towards Asia Minor and Persia, thereby insuring the safety of India from that side. Now Schamyl, the hoary-headed warrior-prophet, is compelled to surrender in his last mountain stronghold. From his lofty Alpine home, which is filled with the renown of his romantic deeds, he is carried a prisoner to St. Petersburg, there to be stared at by the crowd of decorated slaves of autocracy.

With this "pacification" of the Caucasus, the Czar obtained the unimpeded use of the high-road leading into Asia Minor. He then struck a blow against the independent tribes on the eastern shore of the Caspian. With the Court of Teheran he entered into relations calculated to threaten Turkey with a double danger from the Asiatic side, in case of a renewal of war. Again, he enlarged his Empire, at the cost of China, by filching territories as extensive as some of the greatest European countries. In what once was Independent Turkestan, his armies overran one Khanate after the other, thus coming nearer and nearer to India from the north-west. There is a striking war-picture by Vereshagin, with a pyramid of skulls as its centre—a very Golgotha of the horrors of massacre; but Russian monarchs, in their ceaseless career of conquest, out-Tatar the Tatar in the fiendishness of their atrocities. Witness the order given by General Kaufmann, the

pampered tool of Alexander II., in these Turkestan campaigns:—"Kill all; spare no age, or sex!" Witness also the death-dance that took place when his Majesty, the crowned head of Holy Russia, the magnanimous Champion of Religion and Humanity, made his victorious entry into Plevna, [48] carousing there jubilantly, whilst the Turkish wounded lay unattended in the town for fully two days—a helpless mass of men, dying in raving agony.

[Pg 129]

I have anticipated for a moment the course of events. In glancing at the reign of Alexander II., the eye involuntarily runs over the full panorama of tyrannic outrages. From the time of the wholesale proscription of the Tcherkess and Abchasian tribes to the heart-rending horrors committed against Toork populations and wounded Ottoman prisoners of war, there has been, in his career, a perfect climax of inhumanity. Conferences for the professed humanization of warfare were, with him, only the hypocritical precursors of fresh barbarities. But it is not necessary to forestall events. Enough was done in the way of atrocities even in the earlier years of his rule.

Between the conquests made in the Caucasus and the annexations on the Amoor or in Central Asia, Alexander II. bullied, and at last put down, by unspeakably cruel means,—even as did his predecessor,—the national aspirations of unhappy Poland. Like Nicholas, he kept the road to Siberia alive with the wretched convoys of unfortunate exiles. Even in the Baltic Provinces, whence the Russian Government draws so many able administrators, diplomatists, and military leaders, whose capacities might be employed in a better cause, he began a system of persecution against the German population, of so galling a nature that it threatened, in course of time, to alienate that very mainstay of the public administration. The special towns' charters of the Baltic Provinces were infringed. The German tongue, hitherto possessing full privileges, was threatened. A process of Russification was attempted; the superior civilized element being pushed and annoyed by the inferior and barbarous one.

These acts of the earliest years of the reign of Alexander II. have to be kept in mind, in order to understand that humanitarian motives were not the ruling ones in the final adoption of the Serf Emancipation measure. On his death-bed, Nicholas is stated to have said to his son:—"Thou hast two enemies—the nobility and the Poles. Emancipate the serfs; and do not allow the Poles any Constitution!"

It is impossible, with the mystery which envelopes the last days of Nicholas, to know whether these words are authentic. At all events, Alexander did not give back to the Poles the Constitution they possessed until 1830. Nor did he grant a Constitution to the Russians either. He emancipated the serfs—but not before the principles which had actuated the Conspirators of 1817-25 once more began to show themselves among the upper strata of society; and in passing his measure, he mainly sought to deprive a restive nobility of some of its influence, and to take the wind out of the sails of those Liberal agitators who would have made the abolition of bondage the outcome of the establishment of a freely-chosen Legislature. When, finally, the Poles, counting upon a corresponding movement in Russia, resolved upon that heroic, though desperate, rising which by anticipation I alluded to in the last article, such fresh cruelties were practised by Alexander II. against the vanquished victims, that every human heart worthy of the name must shudder at the mere recollection of them.

[Pg 130]

From those days, however, the Conspiratory Movement in Russia began to assume larger proportions. What I have said in the preceding pages, goes far to explain the violence by which that movement has latterly been characterized.

V.

Partly from the aggressiveness which is the natural bent of a despotic military monarchy, partly from the wish to check the home-growth of Liberal sentiments by frequent blood-letting abroad, the government of Alexander II. has tried to meet the danger which has been gathering round the autocratic system by lighting up foreign wars. Central Asia has served him for that purpose. So has Turkey. The flag of ambition was flaunted before public opinion as soon as there was a revival of the Opposition tendency in internal affairs.

An attempt at opening up the whole Eastern Question was made as early as 1870, when France and Germany were locked together in deadly embrace. The confidential despatches and cypher telegrams exchanged in 1870 between Mr. de Novikoff, the Russian Ambassador at Vienna, and Mr. Ionin, the Russian Consul-General at Ragusa, which fortunately came to light some years ago, have fully proved that even then Muscovite policy busied itself with getting up a phantom insurrection in Herzegovina, preparatory to an attack upon Turkey. Nor is it a secret that a Bulgarian Committee of Insurrection, affiliated to Russia, had been in existence at Bucharest for years previous to the late war. All these propagandistic intrigues were in a measure designed to occupy some of the more active minds in Russia, who hesitated, between home reform and Panslavistic ambition.

The Czar has indulged in his warlike enterprizes, but he has deceived himself in his calculations as regards home policy. All his frightful spilling of blood abroad has not been able to prevent the formation and extension of what is called the Nihilist Conspiracy. Side by side with his wars, the Secret League has grown apace, overshadowing all his glory. So extensive have the ramifications of that Conspiracy become that the liveliest interest is now awakened as to its origin and its earliest germs.

[Pg 131]

In the nature of things it is impossible, at present, to speak with full certainty on this subject. The Russian revolutionists, being engaged in a desperate struggle, have neither the leisure necessary for writing such statements; nor is it their interest to go into details. Judicial inquiries have lifted, here and there, some corner of the mysterious winding-sheets in which the secret *Vehme* is enveloped. But more light can only be expected after the Conspiracy has been entirely crushed,—in which case, however, owing to the heroic silence which its adherents generally maintain, a great deal of knowledge will for ever be buried in the grave,—or the fuller clearing up will come when, as I would fain hope, this fierce struggle ends with a triumph, whether complete or partial, of the cause of freedom.

Even under the iron rule of Nicholas, there were, many years after the St. Petersburg insurrection of 1825, still some faint traces of Secret Societies, in which the spirit of Pestel and Murawieff was continued. One of these occult Leagues was that of Petrascheski, detected in 1849, whose members were sentenced to forced labour and to banishment to Siberia. A nearer approach to the plebeian element than was observable in the Conspiracies of 1817-25, characterized this later association. Altogether the more educated classes gradually began to seek closer contact with the people at large.

This task was in so far facilitated by the tyrannical Czar-Pope Nicholas, in that he not only trod under foot that portion of the nobiliary class which aimed at a Constitutional share of the political power, but also persecuted the various dissenting sects in the most barbarous fashion.

Under an outward gloss of official orthodoxy, Russia is eaten up with a chaos of sects. The Raskolniks, or Old Believers, profess to be the real Church; yet the simplest civic rights were always denied to them. Besides those Old Believers, numerous other sects exist. They in their turn are surrounded by a strange fringe of "Runners," "Jumpers," "Flagellants," "Self-Mutilators," and other eccentric or anti-social pests which crop up most thickly in the dank shadow of an obscurantist despotism, whose very roots, however, they gradually destroy and encroach upon. Persecuted men often seek solace in wild hopes and prophetic beliefs, which, if strongly nurtured by agitation, are apt to imperil the persecutor. Under Nicholas, the persecutor of all Dissenters, popular seers occasionally arose, who in their occult meetings predicted from the book of Esdra that, after the reign of Nicholas should be over, the Monarchy would fall down under his son and that "the people then would be happy and free."

Such a state of feeling in the lower and more backward social strata rendered it at all events easier for would-be reformers of the conspirator type to enter into closer contact with the plebeian element. Though educated men could not have any sympathy with the mystic views and tone, they found a practical ally in the sullen dissatisfaction which drove Dissenters to opposition against the Government. So it was under Nicholas. So it still is under Alexander II. It may suit the sacerdotal Ritualists, who would fain establish a connection of High Church Anglicanism with the official orthodoxy of the East, to promote the aggressive policy of the Czar. But English Dissenters, who prize their freedom from clerical trammels, might remember that Autocracy in Russia represents all that is worst in political as well as in religious fields. Besides upholding the Stuart doctrine with the means of a Gengis Khan and a Tamerlane, it pretends, in Church matters, to a Papal authority, crushing the Bible Christian, the eccentric Mystic, and the religious Rationalist, with an equally heavy hand—and, if need be, as in the case of the Greek Uniates under Alexander II., with the Cossack knout.

[Pg 132]

In the educated class of Russia, two very different political currents are observable: the one inclining towards Western Liberalism, whilst the other cultivates the Nationalist sentiment under rather antiquated forms. The "Westerners," "Europeans," or "Liberals," are often regarded by the more stolid adherents of Katkoff as men lacking in patriotism. Between these two parties—if we could speak of parties in a country which has no ordered public life—a third group is observable: the Panslavists, many of whom pursue, under a Liberal mask, aims favourable to the aggrandizement of Czardom. Not a few of the Panslavists are in reality mere Government tools. Others, who, like Aksakoff, began as independent workers in the Panslavist cause, finally yielded to Government temptation; but after a while even they were found to be too much imbued with reforming ideas, and consequently were placed under police surveillance.

The great mass of the Russian people has nothing to do with Panslavism; it does not even know what it is. The idea of a Slav brotherhood is foreign to it. It can be made, by much priestly preaching, to take a sort of bigoted interest in alleged co-religionists who are said to be ill-treated by "unbelieving Turks;" but the interest and the understanding do not go beyond that. Such is the distinct statement made lately by one of the best observers, Ivan Turgenieff, the novelist, in a conversation with a German writer. As to the revolutionary party in Russia, it has more and more become estranged from the Panslavistic tendency—so much so that at present it stands in direct opposition to it.

Alexander Herzen,^[49] who favoured the Panslavistic cause, could still speak, retrospectively, of Russian Czars as being "Robespierres on horseback"—an expression of so doubtful a value that it rather reminds us of the pseudo-revolutionary language of Napoleonism than of the purer Democratic principles. Herzen's idea being that Constantinople should become the capital of a great Russo-Slav Empire, we can easily understand that he should have represented Muscovite history under such a deceptive garb. Bakunin also was a Panslavist for a time, but of a different type, aiming as he did at a loose Democratic Federation of the various Slav tribes. The impossibility of this federation all those will acknowledge who think it equally chimerical to form a Romanic Federation between nations so dissimilar in origin, history, language, and aspirations,

[Pg 133]

as are the Italians, the French, the Spaniards, the Portuguese, the French-speaking section of the Swiss, and the Roumans of Moldo-Wallachia and Hungary. Or would it be less chimerical to try to form a Teutonic Federation among Germans, Dutch, Danes, Swedes, Norwegians, Icelanders, German-Swiss, Englishmen, North Americans, and the various English colonies?

Nihilism, on its part, has nothing in common with those Pan Slavist intrigues which mainly cover an Imperialist ambition. Nihilism, as at present known, is, in fact, the very negation of such dangerous ambitious schemes.

The first Nihilist Society, properly speaking, is said to have been founded by Russian students about the year 1859. German works on philosophy and natural science were then much in demand, as forbidden fruit among the aspiring youths of Russia. The books not being allowed to pass the frontier, stray copies were smuggled in, and lithographed translations passed from hand to hand. The Agricultural College of Petrovski, near Moscow, is considered to have been one of the first places where young men became imbued with such advanced ideas. In this neighbourhood the Netchaieff tragedy was enacted. Among literary men, Tchernitcheffski was one of the first who became a "Nihilist." He suffered for it by being banished to Siberia.

The word "Nihilist" is, however, a somewhat misleading one. It was conferred at first as a nickname. Afterwards it was adopted (like the name of the *Gueux*) in a kind of dare-devil mood; and has covered, ever since, a great many varieties of political and social discontent, as well as of philosophical Radicalism. There are Nihilists who, from the sheer hopelessness engendered by a tyranny lasting a thousand years, have come to cultivate a Philosophy of Despair, of Disgust, and of Destruction, without troubling themselves as to the constitution of the Future. These are men that profess a wish to do away with all State organizations, for the sake of a morbid Individualism. Others there are who, in the semi-revolutionary vein of Comte, incline towards a socialist Collectivism in a rather utopian, not to say hierarchic, form. To them the word "Nihilist" is scarcely applicable.

[Pg 134]

Strictly speaking, the word "Nihilist" covers, at most, a small group of persons of a brooding and impracticable temper, such as is sometimes created under the darkest tyrannies. It may be doubted whether the majority of those who use the dagger and the revolver without compunction against the vile *sbirri* of an intolerable despotism would call themselves Nihilists, or even Socialists. The greater number of the members of the secret leagues are believed to hold views not far removed from those which have found a practical expression in some freely constituted countries. The violent means employed are, with many, only the outcome of a feeling of revenge easily to be understood under the circumstances; or else they are regarded as a dire necessity in insurrectionary warfare. True, there have been Russians abroad who spoke of "abolishing the Family and Property." But nothing warrants the assumption that this is the principle of the Nihilists in Russia itself.

If either mere anarchy, or a system of barrack Communism, be the object of the majority of the men and women whose deeds have of late riveted the attention of all Europe, it is hard to comprehend that these conspirators should have secured so many friends among classes which by education and position cannot possibly have any sympathy with mere destructive or utopian schemes. Of the existence of numerous friends of the Nihilists in the higher classes there is, however, no doubt. Thus only can the hold be explained which the occult propaganda of this *hic et ubique* conspiracy has obtained upon the commonwealth.

VI.

I have mentioned the participation of women in the present desperate struggle. Students, lawyers, officers, Government officials, landed proprietors, merchants, all kinds of men of the more educated or well-to-do classes, have been found to be mixed up with the "Nihilist" Conspiracy. By far the most characteristic feature, however, is the share which women have taken in the late startling events. When women thus actively and enthusiastically step forth in a revolutionary or national movement, even to the extent of sacrificing their lives, it is always a sign of a people's feelings being wrought up to the highest tension. So great a strain upon the more delicate nature of the fairer sex cannot be borne very long. It is only at a time of extreme crisis that the unusual event occurs; and Russia is now at the very acme of such a crisis.

We have seen, in succession, Vjera Sassulitch, a captain's daughter; Sophia Löschern von Herzfeld, a lady of high rank; Nathalie von Armfeldt, the daughter of an Imperial councillor; Mary Kovalevski, who also ranks as a noble; Katharina Sarandovitch, the daughter of a *tchinovnik*, or official; and several more, of equally prominent position, playing in the revolutionary contest a most remarkable part. They have suffered imprisonment; they have risked their lives; some of them have been condemned to hard labour. One of them was sentenced to be shot—but this latter decision even the Czar, though having to wage war against women, dared not carry out. This extraordinary mixing of the female sex in a widely ramified conspiracy is of so phenomenal a character that a sketch of the educational and emancipatory movement which led up to it, may well be here in its place.

[Pg 135]

By way of contrast, let us first look into times which seem to lie ages behind us, but which are yet in the recollection of a great many.

When Gogol wrote his "Dead Souls," not quite forty years ago, the education of young ladies in Russia was conducted on wonderful principles of "finishing." Young ladies—said Gogol, with

cutting satire—receive, as is well known, a very good education. Three things are looked upon, in the establishments to which they are sent, as the pillars of all human virtues: namely, first, a knowledge of the French language; secondly, the piano; thirdly, domestic economy, which consists of the embroidery of purses and other objects of surprise. "Our present time," he added, "has shown itself most inventive as regards the perfection of this educational method; for in one establishment they begin with the piano, and then go on to French, concluding with the domestic economy alluded to; whereas in another school the embroidering of purses forms the introduction, upon which French and the piano follow. It will be seen that there is much difference in the methods."

Gribojedoff also, in a telling comedy, has some striking sarcasms on the superficiality and hollow frivolousness of the education of girls of the upper classes. "We bring up our daughters," he says, "as if they were destined to be the wives of the dancing-masters and the buffoons to whom we entrust their instruction." Now and then a reformer started up, but in a very curious fashion. One of the earliest was Tatjana Passek, the cousin of Alexander Herzen, of whom a writer, who adopts the signature of "Borealis," in the Berlin *Gegenwart*, says that in consequence of the straitened circumstances of her father, she was compelled to open a Young Ladies' Establishment in a provincial town. Intelligent, but without any solid knowledge, she herself relates in her memoirs how she taught ancient history off-hand, chiefly by means of a lively imagination. She even critically expounded the philosophical systems of Greece and Rome without knowing or understanding them. Her handbook for Greek History was "The Travels of Young Anacharsis." There was no system or connection in what she taught, but the sprightliness of her delivery made up for the defect. "When we came to the history of Sparta, we became so enthusiastic for the Lacedæmonian girls that we tried to imitate their hardened style of life, washing ourselves with cold water, promenading with bare feet, doing gymnastics, drinking no tea, and ceasing to cry. When I look back upon these performances, I wonder how my pupils remained in good health." The same lady reports that the friends of her youth, disgusted with the hollowness of drawing-room life, had endeavoured to satisfy their emancipatory inclinations by donning men's dress, indulging in Amazonian tastes, and secretly frequenting taverns where, with their aristocratic small hands, they jubilantly raised the foaming cup.

[Pg 136]

So much for girls' education in the higher strata. As to the immense mass of the Russian population they were left to rot, intellectually, in utter neglect. The school system in some Western countries—including central and southern Italy before 1859-60, France, and even England until a few years ago—was bad enough. In Russia it was simply nonexistent. The private educational establishments and grammar schools in a few towns, which were destined for the more well-to-do middle class, were sorry copies of the few Government institutions. I have before mentioned how, under the present reign, a movement for a more Liberal education arose, which, however, soon led to students' tumults and to severe police measures. In girls' education, too, a progressive movement was initiated. For a short time it was said that the Empress herself, whose German origin inclined her to that view, would assume its protectorate. But soon it was seen that Government mainly busied itself with bureaucratic regulations, whilst the foundation of the girls' schools for which these extensive and often harassing regulations were framed, proceeded with extreme slowness. In fact, the regulations were there; but in most cases the schools were wanting.

Meanwhile, the aspiring girlhood of Russia threw itself with avidity upon the new sources of knowledge, scant as they were, which had at last been opened to it. The Minister of Public Instruction, Golovnin, who was in office between 1861-66, promoted, in his quality of an opponent of the classical method of education, by preference the study of natural science. Hence a realistic tendency—often verging upon the harsh and the crude—became the prevailing tone. Girls, sick of the idleness and the conventional frivolities of social life, eagerly devoted themselves to scientific pursuits, both as students at the new academies, and as subscribers to the courses of lectures which were getting into vogue. The very antagonists of the more extreme "emancipatory" practices acknowledge that the greater number of these lady-students, who soon were driven to seek for an opportunity of acquiring knowledge at a foreign university—that is, at Zurich—distinguished themselves by much diligence and talent, as well as by a spirit of personal sacrifice in regard to worldly comforts.

At the same time it must be averred that some of them, yielding to an exaltation and eccentricity easily aroused in womankind, mentally overbalanced themselves as it were, and began to assume hideous mannish and hermaphrodite ways. The close-cropped hair, the unnecessarily spectacled face, the short tight jacket, the cigar, and the frequenting of public-houses were unpleasant outward signs; but far more deplorable was the cynic tone. These were and are the sad excrescences of an otherwise laudable aspiration; but it may be hoped that in course of time the excrescences will disappear. The sooner the better, else the best friends of the progressive tendency among womankind will turn away from it in sorrow and anger at the unsexing of the sex, whose tenderer nature—in Schiller's words, let us hope not quite antiquated—is destined to "weave wreaths of heavenly roses into the earthly life."

[Pg 137]

However, all the odd eccentricities, all the sad contempt of the natural and recognised forms of beauty, delicacy, or even decency, into which some may have allowed themselves to be betrayed by their eagerness to throw off intolerable intellectual fetters, must not render us unjust to the sounder aspect of the movement. Nor can those vagaries prevent us from giving a due meed of admiring praise to the heroism displayed by those nobly aspiring women, with whom the exaggerated manner is more an outward form, whilst their self-sacrificing deeds in the cause of

the freedom of the nation and the welfare of the neglected masses, show the true humanity and nobility of their heart. "Dead souls" they are not. The fire of enthusiasm is within them.

VII.

After this rapid general survey of the condition of mind of the more advanced women in Russia I come to the tragic story of Vjera Sassulitch. It is a story typical of the base cruelty of autocratic government; typical also of the results such a system must needs produce.

The victim and heroine of that ever-memorable tragedy was not, at first, a member of any secret organization. Far from it. At the age of seventeen, Vjera, then a mere school-girl, had made the acquaintance of another school-girl, whose brother was a student. In the course of this innocent girlish friendship she was induced to take care of a few letters destined for the student, Netchaieff, who afterwards played a part in the revolutionary movement. A "Nihilist" Miss Sassulitch, at that time, certainly was not. Her whole ambition centred in the wish of passing her examination to qualify herself for a governess, which she did "with distinction."

Netchaieff's democratic connections having been denounced by a traitor, whom he thereupon slew, the school-girl of seventeen, who had known his sister, and him through her, was thrown into prison as one "suspected" of conspiracy. There was not a shadow of proof against her. No accusation was even formulated against her. Nevertheless she was kept, *for two long years*, in the Czar's Bastille—an eternity of torture for a captive uncertain of her fate. These were the words which her counsel, Mr. Alexandroff, addressed to the jury, when, later on, she was tried for an attempt upon Trepoff, one of the most hated tools of despotic profligacy:—

"The time between the eighteenth and the twentieth year—these are the years of youth when childhood ceases; when impressions lasting for life are most powerful; when life itself appears yet spotless and pure. For the maiden it is the most beautiful time—the time of budding love—the time when the girl rises to the fuller consciousness of womanhood—the time of fanciful reverie and enthusiasm—the time to which, in later days, as a mother and a matron, her thoughts will yet fondly turn. Gentlemen of the jury! you know in the company of what friends Vjera Sassulitch had to pass her best years. The walls of a casemate were her companions. For two years she saw neither mother, nor relations, nor friends. Sometimes she heard that her mother had come and had given a message of greeting. That was all she was allowed to learn. Locked up without occupation within the walls of a prison!... Everything human concentrated in the single person of the turnkey who brings the food!... The monotonousness only broken, now and then, by the call of the sentinel, who, peering through the window bars, asks, —'Prisoner, have you not done any harm to yourself?' or by the rattling of the locks and door-bolts, the clack of guns shouldered or grounded, or the dreary striking of the hour in the fortress of St. Peter and St. Paul.... Far, far away from everything human!... Nothing there to nourish the feelings of friendship and love; nothing but the sympathy created by the knowledge that, to the right and to the left, there are fellow-sufferers passing their wretched days in the same way.... Thus it was that, in the depth of her solitude, there arose, in Vjera Sassulitch, such warm-hearted sympathy for every State prisoner that every political convict sufferer became for her a spiritual comrade in her recollections, to whom she assigned a place in the experience and the impressions of her past life."

[Pg 138]

During the two years that Vjera was kept in dungeons under a mere suspicion, she was twice only subjected to a secret inquiry—"judicial," if that is a word applicable to these dread Inquisition procedures. At last she feared she was forgotten. Nothing whatever having come out against her, she was finally set free, and went back to her heart-broken mother, only to be suddenly re-arrested ten days afterwards! For a moment, in spite of a two years' bitter experience, she childishly thought there was some mistake. But the horrible truth of her situation soon broke upon her. One morning she was seized in prison, and, without being allowed to take even a change of dress, or a mantle, transported by gendarmes to a distant province by way of banishment. One of these gendarmes threw his own fur over her shivering shoulders, or else she might have perished on the road.

I will not go here through the whole "infernal circle" of her sufferings and involuntary migrations, which I have elsewhere described more fully. I will not relate how she was "moved on" from one place to the other; the only variety in her treatment consisting of an occasional return to prison. Eleven years had thus altogether elapsed when at last, in those vast dominions of the Czar, and amidst more thrilling events which began to crowd upon public attention, she seemed to be really forgotten. In this way she managed clandestinely to go back to the capital, whence again she started for Pensa. It was there that, by chance, she learnt from the *Novoje Vremja* ("New Times,") the infamous treatment of Bogoljuboff, a political prisoner, by the chief of the police at St. Petersburg, the vile and universally despised Trepoff, the personal, intimate, and pampered darling of Alexander II.

The flogging practices of this tyrannic head of the "Third Section" are still in every one's recollection. In referring to the knouting applied to Bogoljuboff, Vjera Sassulitch's counsel gave the following description:—

[Pg 139]

"The sufferer whose human dignity is to be insulted, knows not why he is to be

punished. He thinks indignation will lend him strength to resist those who throw themselves upon him. But he is grasped by the iron grip of jailers' hands; he is dragged down; and in the midst of the regular counting of the strokes by the leader of the execution, a deep groan is heard—a groan not arising from mere physical pain, but from the soul's grief of a down-trodden, outraged man. At last, silence reigned again. The sacred act was accomplished!"

It was the brooding over such disgrace and affront to which a political prisoner had been subjected in the very capital by an official whose department is under the Czar's direct control that pressed the weapon of revenge into the hands of a tender woman—not so much for her own past miseries as for those of a still suffering fellow-man.

Trepoff had been attacked by Vjera Sassulitch in his own Cabinet, in the very midst of his minions. The jury which tried her was composed almost exclusively of Aulic Councillors and such-like titled dignitaries. Prince Gortschakoff sat among the audience; so did the pick and flower of the upper classes of St. Petersburg. Who could doubt, in presence of the open avowal of the accused, that the verdict would be "Guilty?"

Strange to say, even among the officially faultless remarks of the Public Prosecutor there were some curious admissions. "I, for my part," Mr. Kessel said, "fully believe the statements made by Vjera Sassulitch. I believe that facts appeared to her in the light in which they have been placed here; and *I am ready to accept the feelings of Vjera Sassulitch as facts*. The Court, however, is bound to measure these feelings, as soon as they are converted into deeds, by the standard of the law." Through the summing up of the Judge there ran a strong vein of interpretations favourable to the accused. "An accused person," he remarked, "could certainly not be looked upon as an infallible commentator on the event with which he or she was connected. At the same time it had to be noted that criminals were to be divided into two groups: those who are led by selfish impulses, and who therefore, in the majority of cases, try to mask the truth by lying statements; and those who commit an act from no motive of personal profit, and who entertain no wish to hide anything of the deed they have done. You, gentlemen of the jury, are in a position to judge how far the statements of Vjera Sassulitch merit your confidence, and to which type of transgressors she most nearly comes up."

This was a clear hint to any intelligent jury; and the jury of Aulic Councillors were intelligent men. Going over all the details of the case, the Judge made a great many more remarks in the same spirit. The audience, who had frequently cheered the eloquence of counsel to such an extent that the President of the Tribunal had to warn them, were on the tip-toe of expectation. When the Foreman brought in the verdict: "No; she is *not* guilty!" the Hall of Justice—for justice had for once been done—rang with enthusiastic applause. Vjera Sassulitch was borne away in triumph.

[Pg 140]

In the streets, however,—and here we come once more upon all the dark and terrible ways of Autocracy,—there ensued a fearful scene. An attack was made upon the coach in which Vjera Sassulitch was to be carried home—apparently with the object of getting her once more into police clutches. There was a clash of swords and a confused tumult. Gensdarmes and police broke in upon the mass of people, who wished to protect her. Shots were fired. A nobleman and relation of Vjera, Grigori Sidorazki, lay dead in the street. A lady also, Miss Anna Rafailowna, a medical student, writhed on the ground, wounded. The victim of so much prolonged persecution had herself mysteriously disappeared. Afterwards, an order for her re-arrest, marked "No. 16," and dated from the Secret Department of the Town, came to light—evidently through information given by an affiliate of the Revolutionary Committee within the police administration itself. This occult connection of sundry officials with the leaders of the Democratic or Nihilist Conspiracy explains why Government should so often have been hampered in its efforts to suppress that organization.

The verdict of "not guilty," in the case of Vjera Sassulitch, has been followed by several similar ones—a strong proof of the sympathy felt among the town populations, at least, with the aims of the revolutionists. Franz von Holtendorff, a well-known legal authority in Germany, wrote on the case above detailed:—"Far more significant than the verdict of the jury is the fact that that verdict, in spite of its contrast to the existing law, has received the approval, as it appears, of the whole Russian press, of the whole of the upper classes, and even of the circles of Russian legists. I have had personal occasion to convince myself that prominent officials of the Russian Empire gave their applause to that verdict." Again, Dr. Holtendorff said:—

"In Russia, the feelings of right and justice, which are systematically and artificially kept down and repressed, and which have no outlet in public life, concentrate themselves with their full weight in the verdict of a jury. That which the press had no liberty of saying during long years, is given vent to in the debates of a Court of Justice. An accusation is raised on account of a deed which, though punishable as a crime in itself, has been produced and nurtured by a system of administrative arbitrariness and gross ill-treatment that stands morally deep below the deed in question—a system of corruption which cannot be attacked legally, nay, which enjoys all the honours the State can award. And who can help it if an injustice committed day after day, in the name of the State, without any expiation, weighs more heavily upon the public conscience than the act of a single person who, boldly risking his or her own life, rises with a feeling of the deepest indignation against so rotten a system of Government? It is but too natural, this

wrathful utterance of the popular voice, when it declares that a high official, who, trusting in the practical approval of the Imperial favour, ordains corporal punishment according to his arbitrary caprice against defenceless prisoners, is guilty of a greater offence than he who feels driven, by a passionate notion of justice, to constitute himself, of his own free will, an avenger of the public conscience.... If, in a State afflicted with political sickness, the institution of the jury had fallen so deep as to work with the mechanical certainty of a military court, and to heed nothing but the points of view of jurisprudence, without being touched by the current of moral aspirations, thus merely registering, with Byzantine obedience, the paragraphs of a code of law: such a phenomenon—keeping, as it would, the Government in a dangerous error as regards public life—would be far more reprehensible than that verdict of 'not guilty' by which a whole system of Government was practically condemned."

[Pg 141]

The Russian Government system Herr von Holtzendorff, who personally belongs to a very moderate political party, brands as "a system of arbitrary police ordinances, and of the virtual sovereignty of the Adjutants-General of the Czar—a system of administrative deportations, of despotic arrestations, of press-gagging—a swashbuckler's government." Another German writer of some distinction, Dr. Henry Jaques, observes—

"Where an absolutist monarch rules in arbitrary manner, without any limits to his power, the jury becomes the only representative organ of a people utterly bereft of all political rights. In such a case, a jury is indeed entitled to speak, before all, the language of the people, the language of its aspirations towards freedom, which must be heard before everything else, if the nation is to acquire its true rights. Even as, in the Iliad, the orphaned Andromache says to the parting Hector: 'Thou art now father, brother, and dear mother to me!' so the Russian people may say to its jury: 'You are now legislators, judges, and the source of mercy at one and the same time to me! In you there reposes the One and All of my political hopes, of my political rights!'"

Noble words, but vain hope! First of all, it is not correct to say that Vjera Sassulitch had been judged by a jury under a political charge. For political crimes, or accusations, no jury has ever existed under Alexander II. Vjera Sassulitch was charged with what Government chose to consider a *common* crime; hence only she was brought before a jury. For political offenders, or what Government chooses to regard as political offenders, packed tribunals have always been assigned. Happily, Government overreached itself in the case of Vjera Sassulitch, feeling too secure in the loyalty of its own Aulic Councillors.

Secondly, no sooner had the trial resulted in a verdict of "not guilty," than Count Pahlen, the Minister of Justice, who thought the jury were, of course, quite a safe one, was dismissed. Thirdly, an ukase went forth, withdrawing from the cognizance of juries even cases of "common crime," when such crime was directed against one of the Czar's officials. Fourthly, fresh regulations were framed for a change of the jury system, as well as for the discipline of lawyers acting for the defence. Fifthly, in the teeth of the verdict given in favour of Vjera Sassulitch, a fresh trial was ordered, to be held in a country town, at Novgorod, as soon as she could be recaptured. Finally, Alexander the Liberal, seeing that all ordinary procedures were of no avail, instituted a state of siege and drum-head law for political offenders over a large portion of his Empire.

These are the desperate doings of a despotism maddened by an ever-active host of enemies. It is usually the beginning of the end.

[Pg 142]

VIII.

If any more proofs were wanted of the "benevolent" character of the Government of Alexander II., they might be found in the increase, year by year, of the deportations to Siberia. They are reckoned to be now four or five times more numerous than under the galling system of Nicholas. Political banishments have enormously augmented under his successor. So has the number of the prescribed loose and vagabond class of ordinary criminals, or suspects, who are frequently whisked off to Siberia—for the sake of clearing "Society," as it is called—when the criminals often become mixed up with the political exiles in an indistinguishable mass. This is the very refinement of torture, applied by the agents of a brutal despotism against men generously striving for a reform of the State and of society.

The arbitrary deportations are decreed by the "Third Section," or Secret Police, which is under the Emperor's personal direction. Formerly, this dreaded office had the power of administering corporal punishment, in secret, to persons of the upper classes, male or female. At the Sassulitch trial, the counsel for the defence made a dark allusion to this practice, which created a deep impression in Court. It was a reference to a whipping-machine once in use, and of which some of those present—ladies, as well as gentlemen—may have had personal experience. A correspondent has given the following description:—The suspected person, who could not be brought to trial, but whom it was intended to castigate, would be invited to call at the Office of the Secret Police. After a few moments' conversation with the dread functionary, the floor would suddenly sink beneath the visitor's feet, and he would find himself suspended by the waist, all that part of the body below it being under the floor, and concealed from view. Then invisible hands and equally invisible rods would rapidly perform their duty—the trap-door would rise again—and the visitor

would be bowed out with great courtesy, and go home, carrying with him substantial marks to remind him of his interview.

Though this more than Oriental custom has been abolished, enough remains of barbarity to explain why successive chiefs of the hated police Hermandad—Trepoff, Mesentzoff, and Drentelen—should have been the mark of the bullet of popular revenge. A Russian writer says:—

"A history of the secret doings, of all the horrors and crimes perpetrated by this disgraceful institution, would fill up many volumes, before the contents of which the most sensational novels would appear tame and shallow. There is scarcely any sphere of public or private life which is exempted from the irresponsible control of this Inquisition of the nineteenth century. The verdict of a Court has no value whatever for the Third Section. Not only acquitted political offenders are as a rule transported, administratively, to some distant town of the Empire, but even the judges themselves, when they are considered to have passed too lenient a verdict, are liable to be forced into resigning their office, and to be then *exiled in company with the very prisoners who had stood before them!*"

Lest this description should appear to be overdrawn, I may quote from the letter of the St. Petersburg correspondent of an English journal, which is certainly not unfavourable to the Government of Alexander II. The letter was written after the recent proclamation of a state of siege. And the writer says:—

[Pg 143]

"As proofs and instances, not so much of martial law as of the repressive measures adopted (in many cases by ordinary administrative agency, without the machinery of martial law), I may mention that at the present time, as I am well informed, *more than 600 persons of the privileged classes are under arrest, to be deported to Siberia without trial.* In one of the temporary governor-generalships in the south of the Empire (Odessa), sixty privileged persons have been already sent to Siberia without trial, and 200 persons of this class are under arrest to be judged. So great is the number of persons of this category to be escorted that a practical difficulty is said to have arisen in connection with their deportation. A noble, or privileged person, who has not been judicially sentenced, when sent to Siberia by 'administrative process' (as it is called, *i.e.*, by the orders of the Third Section, or Secret Police), must be escorted by two gendarmes, it being against the laws to manacle a privileged person who is uncondemned. It appears that there are not gendarmes enough thus to escort the number of persons to be deported, and the Ministry of Secret Police has, I understand, proposed to get rid of this difficulty by sending the privileged persons fettered like ordinary criminals.... The Third Section, or Secret Police, which is in its proceedings essentially *extra leges*, claims to act independently of any other department of the Empire. This institution, which lays hold of suspected persons, whether justly or unjustly suspected, and consigns them to Siberia at its pleasure, savours more of Asiatic lawlessness than of enlightened European rule, such as it must be the desire of all in authority to see established throughout the Empire.... I have myself met with respectable, honourable men, who have been arrested and imprisoned, in some cases for a few weeks, in other cases during months, *followed by years of exile in Siberia, without any charge being brought against them;* and it is the possibility of this recurring to them, or to others, that constitutes a Reign of Terror."

The above description is from the correspondent of the *Daily News*. Clearly it is a very pleasant position to be a "privileged person" in Russia. It marks its occupant, by preference, as a possible candidate for exile to Siberia; the more cultivated classes being essentially those which constitute the active element of political dissatisfaction.

Of the treatment of political exiles in Siberia, as it has been carried on for a long time past, I have before me a thrilling description from the pen of Mr. Robert Lemke, a German writer, who has visited the various penal establishments of Russia, with an official legitimation. He had been to Tobolsk; after which he had to make a long, dreary journey in a wretched car, until a high mountain arose before him. In its torn and craggy flank the mountain showed a colossal opening similar to the mouth of a burnt-out crater. Fetid vapours, which almost took away his breath, ascended from it.

Pressing the handkerchief upon his lips, Mr. Lemke entered the opening of the rock, when he found a large watch-house, with a picket of Cossacks. Having shown his papers of legitimation, he was conducted by a guide through a long, very dark, and narrow corridor, which, judging from its sloping descent, led down into some unknown depth. In spite of his good fur, the visitor felt extremely cold. After a walk of some ten minutes through the dense obscurity, the ground becoming more and more soft, a vague shimmer of light became observable. "We are in the mine!" said the guide, pointing with a significant gesture to the high iron cross-bars which closed the cavern before them.

[Pg 144]

The massive bars were covered with a thick rust. A watchman appeared, who unlocked the heavy iron gate. Entering a room of considerable extent, but which was scarcely a man's height, and which was dimly lit by an oil-lamp, the visitor asked, "Where are we?" "In the sleeping-room of the condemned! Formerly it was a productive gallery of the mine; now it serves as a shelter."

The visitor shuddered. This subterranean sepulchre, lit by neither sun, nor moon, was called a

sleeping-room. Alcove-like cells were hewn into the rock; here, on a couch of damp, half-rotten straw, covered with a sackcloth, the unfortunate sufferers were to repose from the day's work. Over each cell a cramp-iron was fixed, wherewith to lock-up the prisoners like ferocious dogs. No door, no window anywhere.

Conducted through another passage, where a few lanterns were placed, and whose end was also barred by an iron gate, Mr. Lemke came to a large vault, partly lit. This was the mine. A deafening noise of pickaxes and hammers. There he saw some hundreds of wretched figures, with shaggy beards, sickly faces, reddened eyelids; clad in tatters, some of them barefoot, others in sandals, fettered with heavy foot-chains. No song, no whistling. Now and then they shyly looked at the visitor and his companion. The water dripped from the stones; the tatters of the convicts were thoroughly wet. One of them, a tall man, of suffering mien, laboured hard with gasping breath, but the strokes of his pickaxe were not heavy and firm enough to loosen the rock.

"Why are you here?" Mr. Lemke asked.

The convict looked confused, with an air almost of consternation, and silently continued his work.

"It is forbidden to the prisoners," said the inspector, "to speak of the cause of their banishment!"

Entombed alive; forbidden to say why!

"But who is the convict?" Mr. Lemke asked the guide, with low voice.

"It is Number 114!" the guide replied, laconically.

"This I see," answered the visitor; "but what are the man's antecedents? To what family does he belong?"

"He is a count," replied the guide; "a well-known conspirator. More, I regret to say, I cannot tell you about Number 114!"

The visitor felt as if he were stifled in the grave-like atmosphere—as if his chest were pressed in by a demoniacal nightmare. He hastily asked his guide to return with him to the upper world. Meeting there the commander of the military establishment, he was obligingly asked by that officer—

[Pg 145]

"Well, what impression did our penal establishment make upon you?"

Mr. Lemke stiffly bowing in silence, the officer seemed to take this as a kind of satisfied assent, and went on—

"Very industrious people, the men below; are they not?"

"But with what feelings," Mr. Lemke answered, "must these unfortunates look forward to the day of rest after the week's toil!"

"Rest!" said the officer; "convicts must always labour. There is no rest for them. They are condemned to perpetual forced labour; and he who once enters the mine never leaves it!"

"But this is barbarous!"

The officer shrugged his shoulders, and said, "The exiled work daily for twelve hours; on Sundays too. They must never pause. But, no; I am mistaken. Twice a year, though, rest is permitted to them—at Easter-time, and on the birthday of His Majesty the Emperor."

IX.

Can we wonder, when we see the ultra-Bulgarian atrocities practised in Russia, that "Terror for Terror!" should at last have become the parole of the men of the Revolutionary Committee?

I will not go over the harrowing details of the events of the last seven or eight months; they are still fresh in every one's remembrance. The only measures that could stay this destructive contest are systematically withheld by the Czar, who will not permit the slightest display of popular sentiments within the lawful domain of Representative Government. Many years ago a distinguished French writer described the Russian system as "a tyranny tempered by the dagger." Alexander, too, himself is fully aware of this tragic concatenation of events. He is even known to have often, in the very beginning of his reign, expressed a feeling of fear lest his own end should be a violent one, like that of so many of his predecessors. The attempts of Karakasoff and Berezowski have lately been repeated by Solovieff. Whilst strongly condemning the deed of the latter, even the Conservative *Standard* felt called upon, by the dangers of the situation at large, to make the following comments, which possess a lasting interest:—

"It would be well if this painful incident could be disposed of by a homily upon individual wickedness and individual perverseness. Unhappily, it is but too certain that not only the deed itself, but the peculiar circumstances attending it, are closely related with the existing condition of a considerable section of Russian society. We are obliged to add that this condition is closely connected, in turn, with the form of government and the methods of administration that prevail in that country.... In spite of the emancipation of the serfs from the condition of territorial slavery, the Russian people have made little visible progress in the acquisition of

[Pg 146]

political freedom. The Czar is still an absolute Sovereign; his Ministers still remain responsible to no will but his, and their agents have to answer only to their superiors for the manner in which they exercise authority.... The sanguine youth of the nation, eager for a career, and burning for activity, finds itself debarred from any course of distinction save that of arms, or that official existence which too often places men in Russia in antagonism to their own countrymen.... The old method of government—of police supervision, of private espionage, of imprisonment, of exile, of political silence—has been tried, and the result is discontent and extensive conspiracy. We fear that even the confession of sensualistic atheism by Solovieff will not prevent his memory from being cherished by thousands of his countrymen. They will forget everything, save his desire to endow them with more freedom. Whatever his faults, they will consider that he perished in their cause, and *what they will be most disposed to blame will be the unsteadiness of his hand and the uncertainty of his aim.*"

The *Times* also, whilst pleading for Solovieff's execution, acknowledged the fact of the sway of Czardom being rotten to the core, in the following words:—"It cannot be disputed that whole classes in Russia are penetrated almost to desperation with a sense of social oppression and wrong.... A social condition like this is the natural soil in which the brooding temperament which seeks a remedy in assassination is nourished."

When all the safety-valves are closed, Nature takes its revenge, and ever and anon occasions the inevitable outburst. Russia is at present under a state of siege from St. Petersburg to Moscow and Warsaw, from Kieff to Kharkoff and Odessa. An Army of Porters, about 15,000 strong, must watch the streets of the capital, day and night; and policemen are set to watch the watchers. Under General Gurko, the crosser of the Balkans, who is now Vice-Emperor, the last lines of legality have also been crossed—if the word "legality" applies at all to Russian institutions. He is invested with unlimited powers, in the place of the disheartened tyrant. The very Grand Dukes are under his orders. Arrests among officers of the army have been the immediate consequence of General Gurko's satrap rule. In several cases, compromising letters and prints were discovered, and executions both of officers, like Lieutenant Dubrovin, and of privates, have followed. The gallows are in permanent activity. But perhaps the most significant feature—and a promising one too—is the order issued, under court-martial law, that in all the barracks a list of the soldiers' arms is to be drawn up, and to be handed over to the police! This is the strongest sign of a suspicion against the army itself; and on the army the whole power of Czardom reposes.

When we hear of the arrest of a Senator, of a Director of the Imperial Bank, of Professors, of the son of the Chancellor of the dreaded "Third Section," of the wife of the procurator of a Military Court, of the nephew of the Chief of the Secret Police, and many other such cases, we are driven to the conclusion that, in spite of its furious acts of repression, the autocratic system has become untenable—that it must sooner or later fall. Like the Roman Emperor, Alexander II. might be glad if revolt had but a single neck. But is it possible for him to imagine that there exists but one party of malcontents? Do not the very arrests just mentioned belie such an assertion?

[Pg 147]

Conspirators are laid hold of by the Czar's *sbirri* together with men who would not think of armed resistance. Despotism is frightened, in fact, by the very shadows on the wall. Even the Slavophil and Panslavist parties—still the ready instruments of aggressive policy—have both become imbued with Constitutional ideas that look like sacrilege in the eyes of the Pope-Czar. The revolutionists of *Land and Liberty* ("Zemlja i Wolja"); the Socialist Jacobins who follow the doctrines of the *Tocsin* ("Nabat"); the Nihilists, properly speaking; and the moderate Constitutionalists, are all alike the enemies of the present form of Government. In some districts the peasantry have risen; and, remarkable to say, the first troop of Cossacks that was led against the insurgents, refused to fight them. These are portents whose gravity cannot be mistaken.

Ten years ago, when the Napoleonic Empire still stood erect, I said, in an article on "The Condition of France," in the *Fortnightly Review*:—

"A mighty change is undoubtedly hovering in the air. There may be short and sharp shocks and counter-shocks for a little while; but, unless all signs deceive, the great issue cannot be long delayed. The calmest observer is unable to deny the significance of the electrical flashes occasionally shooting now across the atmosphere. It is as if words of doom were traced in lurid streaks, breaking here and there through the darkened sky. We are strongly reminded of the similar incidents which marked the summer of 1868 in Spain. Those incidents were then scarcely understood abroad; yet they meant the subsequent great event of September. Even so there are now signs and portents in France—only fraught with a meaning for Europe at large."

This was published in December, 1869. In the following year, September, 1870, Bonapartist rule was a thing of the past.

Czardom, on its part, may play out its last card by embarking upon a fresh war. It will only thereby hasten its doom. Though in Russia concentrated action, for the sake of overthrowing a system of Government, is surrounded with greater difficulties than in France, I fully expect that the day is not far distant when Autocracy must either bend by making a concession to the more intelligent popular will, or be utterly broken and uprooted. "Terror for Terror!" is a war-cry of despair: but on such a principle a nation's life cannot continue. The moment may come when the Tyrant will be driven to bay in his own palace. And loud and hearty will be the shout of freemen

when that event occurs—of the men striving for liberty in the great prison-house of the Muscovite Empire itself, as well as of all those abroad who have still some pity left in their hearts for the woes of a host of down-trodden nations.

KARL BLIND.

[Pg 148]

THE FIRST SIN,

AS RECORDED IN THE BIBLE AND IN ANCIENT ORIENTAL TRADITION.

The idea of the Paradisiacal happiness of the earliest human beings constitutes one of the most universal of traditions. According to the Egyptians, the terrestrial reign of the God Ra, by which the existence of the world and of humanity was inaugurated, was an age of gold, to which Egyptians ever recurred regretfully; so that in order to convey the idea of any given thing transcending imagination, they were in the habit of affirming that "nothing had ever been seen like unto it since the days of the God Ra."

This belief in an age of innocence and bliss, by which the career of humanity began, is also to be met with amongst all peoples of Aryan or Japhetic race, and was theirs anterior to their separation, the learned having long agreed that this is one of the points on which Aryan traditions are most plainly derivable from one common source with those of the Semitic race, of which last Genesis affords us the expression. But with Aryan nations this belief was closely linked with a conception specially their own—that, namely, of four successive ages of the world; and we find this conception attain to fullest development in India. Created things, and among them humanity, are destined to endure for 12,000 divine years, each of which contains 360 years as reckoned by men. This enormous period of time is divided into four ages or epochs: the age of perfection, or *Kritayuga*; the age of the threefold sacrifice—that is, the perfect accomplishment of all religious duties, or *Trêtayuga*; the age of doubt or of the obscuration of religious notions, *Dvaparayuga*; finally, the age of perdition, or *Kaliyuga*, which is the present age, only to be brought to a close by the destruction of the world.^[50] The Works and Days of Hesiod show us that precisely the same succession of ages was held by the Greeks, but without their duration being calculated by years, and with the supposition of a new humanity being produced at the beginning of each; the gradual degeneracy, however, which marks this succession of ages is expressed by the metals after which they are named—gold, silver, brass, and iron. Our present humanity belongs to the age of iron, and is the worst of all, although it began with the heroes. Zoroastrian Mazdeism also admits this theory of the four ages, and we find it expressed in the *Bundehesh*,^[51] but under a form less nearly akin to the Indian conception than was Hesiod's, and without the same spirit of crushing fatalism. Here the duration of the universe is fixed at 12,000 years, divided into four periods of 3000. In the first all is pure; the good God *Ahuramazda* reigns over his creation, in which as yet evil has not appeared; in the second, the evil spirit *Angromainyus* issues from the darkness in which he had up to this time remained inert, and declares war against *Ahuramazda*, and then begins their conflict of 9000 years, which occupies three of the world's ages. During the first 3000 years *Angromainyus* has but little power; during the second, the success of the two principles remains pretty evenly balanced; finally, during the last age, which is that of historic times, evil prevails, but this age is to terminate with the final defeat of *Angromainyus*, to be followed by the resurrection of the dead and the beatitude of the risen just. The advent of the prophet of Iran, of *Zarakhustra* (Zoroaster) is placed at the close of the third age, or exactly in the middle of that period of 6000 years which is assigned to the duration of the human race under their actual conditions.

[Pg 149]

Certain learned authorities—as, for instance, Ewald and M. Maury—have striven to discover in the general order of Biblical history traces of this system of the four ages. But impartial criticism must admit that they have not made out their case; the foundations on which they have tried to establish their demonstration are so entirely artificial, so opposed to the spirit of the Scripture narrative, that they break down of themselves.^[52] And, indeed, M. Maury is the first to allow that there is a fundamental opposition between the Biblical tradition and the legend of Brahminical India or of Hesiod. In this last, as he himself remarks, we see "no trace of a predisposition to sin transmitted by inheritance from the first man to his descendants, no vestige of original sin."

[Pg 150]

No doubt, as Pascal has so eloquently said, "it is in this abyss that the problem of our condition gathers its complications and intricacies, so that man is more inconceivable without this mystery than this mystery is inconceivable to man;" but the truth of the fall and of original sin is one of those against which human pride has most constantly rebelled, is, indeed, the one from which it spontaneously seeks to escape. Hence of all portions of primeval tradition as to the beginnings of humanity it has been the earliest obliterated. As soon as men felt the sense of exultation to which the progress of their civilization and their conquests in the material world gave birth, they repudiated the idea. Religious philosophers springing up outside the revelation which was held in trust by the chosen people took no account of the Fall; and, indeed, how could that doctrine have been made to harmonize with the dreams of Pantheism and emanation? By rejecting the notion of original sin, and substituting the doctrine of emanation for that of creation, most of the peoples of pagan antiquity were led to the melancholy theory of the four ages, such as we find it in the Sacred Books of India and the poetry of Hesiod. It was by the law of decadence and continual

deterioration that the ancient world believed itself so heavily laden. In proportion as time passed and things departed further and further from their point of emanation, they corrupt themselves and grow ever worse. This is the effect of an inexorable fate and of the very force of their development. In this fatal evolution towards decline, there is no room left for human freedom; the whole revolves in a circle from which there is no means of escaping. With Hesiod, each age marks a decadence from the one that preceded it; and, as the poet explicitly declares regarding the iron age inaugurated by heroes, each of these ages taken separately follows the same descending scale as does their totality. In India the conception of the four ages or *Yuga*, by developing itself and producing its natural consequences, engenders that of the *Manvantara*. According to this new theory the world, after having accomplished its four ages of constant degeneration, undergoes dissolution (*pralaya*), things having reached such a pitch of corruption as to be no longer capable of subsisting. Then there springs up a new universe, with a new humanity—doomed to the same cycle of necessary and fatal evolution, which the four *Yugas* in turn go through, till a new dissolution takes place; and so on to infinity. Here we have, indeed, fatalism under the most cruelly inexorable form, and also the most destructive of all true morality. For there can be no responsibility where there is no freedom, nor is there in reality any good or evil where corruption is the effect of an irresistible law of evolution.

[Pg 151]

How far more consolatory is the Biblical statement, hard though it first appear to human pride, and how incomparable the prospects it opens out to the mind! It admits that man, almost as soon as created, fell from his state of original purity and Edenic bliss. In virtue of the law of heredity everywhere imprinted on Nature, it was the fault committed by the first ancestors of humanity in the exercise of their moral freedom which condemned their descendants to punishment, and by bequeathing to them an original taint predisposed them to sin. But this predisposition to sin does not condemn man fatally to its committal; he may escape from it by the exercise of his free will; and in the same way he may by personal effort raise himself gradually out of the state of material decline and misery to which the fault of his ancestors has brought him down. The pagan conception of the four ages unrolls before us a picture of constant degeneration, whereas the whole order of Biblical history from its starting-point in the earliest chapters of Genesis affords the spectacle of the progressive rise of humanity from the period of its original fall. On one hand, its course is conceived of as a continual descent; on the other, as a continual ascent. The Old Testament, which we must here embrace in one general view, occupies itself but little indeed with this ever-ascending course as regards the development of material civilization, of which, however, it cursorily points out the principal stages with a good deal of exactness. It rather traces for us the picture of moral progress, and of the more and more definite development of religious truth, the apprehension of which goes on ever gaining in spirituality, purity, and breadth amongst the chosen people, by a series of steps marked by the calling of Abraham, the promulgation of the Mosaic Law, and, lastly, by the mission of the prophets, who in their turn announce the last and supreme progress. This is to result from the coming of the Messiah, and the consequences of this last providential fact will go on continually developing themselves, and tending towards a perfection, the term of which lies in the Infinite. This notion of a rise after the fall, the fruit of man's free effort assisted by divine grace and working within the limit of his powers towards the accomplishment of the providential plan, is shown to us by the Old Testament as existing only in one people, the people of Israel; but the Christian spirit has extended the view to the universal history of mankind, and thus has arisen that conception of a law of continual progress unknown to antiquity, to which our modern society is so invincibly attached, but which is, we should never forget, an idea due to Christianity.

Zoroastrianism was unlike other pagan religions in this, that it could not fail to admit and preserve the ancient tradition of a first sin. Rather would it have been forced to construct for itself an analogical myth, had it not found such in the primitive memories that it bent to its own doctrines. The tradition squared, indeed, but too well with its system of a dualism having a spiritual basis, although as yet but imperfectly freed from confusion between the physical and moral worlds. It explained quite naturally how man, a creature of the good God, and consequently originally perfect, should have fallen under the power of the evil spirit, thus contracting a taint which in the moral order subjected him to sin, in the material to death, and to all the miseries that poison earthly existence. Thus the notion of the sin of the first authors of humanity, the heritage of which weighs constantly on their descendants, is a fundamental one in Mazdean books. The modification of legends relative to the first man even resulted in the mythic conceptions of the later periods of Zoroastrianism, in attaching a rather singular repetition of this first transgression to several successive generations in the initial ages of humanity.

[Pg 152]

Originally—and this is at present one of the points most solidly established by science—originally in those legends common to Oriental Aryans before their separation into two branches, the first man was the personage that the Iranians call Yima, and the Indians Yama. A son of Heaven and not of man, Yima united the characteristics that Genesis divides between Adam and Noah, fathers both, the one of antediluvian, the other of postdiluvian humanity. Later, he appears as merely the first king of the Iranians, but a king whose existence, as well as that of his subjects, is passed in the midst of Edenic beatitude in the paradise of Airyana-Vædja,^[53] the dwelling-place of the earliest men. But after a time when life was pure and spotless, Yima committed the sin which weighs on his descendants, and in consequence of that sin, lost his power, was cast out of Paradise, and given up to the dominion of the serpent, the evil spirit Angromainyus,^[54] who finally brought about Yima's death by horrible torments.^[55] It is an echo of the tradition about the loss of Paradise ensuing upon a transgression prompted by the Evil Spirit that we find in what is incontestably one of the oldest portions of the Sacred Scriptures of Zoroastrianism.^[56] "I

created the first and the best of dwelling-places. I who am Ahuramazda: the Airyana-Vædja is of excellent nature. But against it Angromainyus, the murderer, created a thing inimical, the serpent out of the river and the winter, the work of the Dœvas."^[57] And it is this scourge, caused by the power of the serpent, which occasions the departure for ever from the paradisiacal region.

Later, Yima appears as no longer the first man, or even the first king. The period of a thousand years assigned to his existence in Eden^[58] is now divided between several successive generations, occupying the same space of time, from the moment when Gayomaritan, the type of humanity, began to find himself struggling against the hostility of the Evil Spirit up to the death of Yima. This is the system adopted by the Bundehesh. The history of the sin which made Yima lose his primal happiness, and subjected him to the power of the adversary, still remains connected with the name of that hero. But this transgression is no longer the original sin; and in order to be able to attribute it to the ancestors whence all humanity springs, its story is again told here (subserving a double purpose) in connection with the first pair whose existence was completely terrestrial and similar to that of other human beings—Masha and Mashyâna. "Man was; the father of the world was. Heaven was destined to be his on condition of his being humble in heart, and doing with humility the work of the law, of his being pure in thought, pure in word, pure in deed, and of his never invoking the Dœvas. Under these conditions man and woman were reciprocally to make each other's happiness. They drew near and became man and wife. At first they spoke these words: 'It is Ahuramazda who has given the water, the earth, the trees, the beasts, and the stars, the moon and the sun, and all the blessings which spring from a pure root and pure fruit.' Later, falsehood ran through their thoughts, perverted their disposition, and said to them: 'It is Angromainyus who has given the water, earth, trees, beasts, and all above-named things.' Thus, it was that in the beginning Angromainyus deceived them concerning the Dœvas, and to the end this cruel one has only sought to seduce them. By believing this lie, both became like unto demons, and their souls will be in Hell until the renewal of bodies."

[Pg 153]

"They ate during thirty days; they clothed themselves in black raiment. After these thirty days they went hunting; a white goat presented itself; with their mouths they drew milk from her udder, and nourished themselves with that milk which delighted them....

"The Dœva who told the lie, grew more bold, and presented himself a second time, *and brought them fruits which they ate, and by so doing of the hundred advantages they enjoyed there remained to them only one.*

"After thirty days and thirty nights a fat white sheep appeared; they cut off his left ear. Instructed by the celestial Yazata^[59] they brought fire from the tree Konar, by rubbing it with a piece of wood. Both set fire to the tree; they blew up the fire with their mouths; they first burnt the branches of the tree Konar, next of the date-tree, and the myrtle.... They roasted the sheep, dividing it into three parts.^[60] ... Having eaten of the flesh of the dog they covered themselves with the skin of that animal. Then they gave themselves up to the chase and made themselves garments of the hair of wild beasts."^[61]

We may here observe that in Genesis also, vegetable food is the only one made use of by the first man in his state of bliss and purity; the only one promised him by God. Animal food does not become lawful till after the Flood. It is also after the Fall that Adam and Havah first clothe themselves with coats of skin made for them by Yahveh himself.

[Pg 154]

The late lamented George Smith believed that amongst the fragments of the Chaldean Genesis, discovered by him, one might be interpreted as relating to the fall of the first man, and that it contained the curse pronounced upon him by the God Ea, after his transgression.^[62] But this was an illusion, which a more profound study of the cuneiform document has dispelled. Smith's translation, which was too hasty, immature, and, moreover, hardly intelligible, turns out erroneous from beginning to end. Since then Mr. Oppert has given us an entirely different version of the same text,^[63] the first possessing a really scientific character, in which the general meaning becomes tolerably clear, though there are still many obscure and uncertain details. One thing at least is now quite established: the fragment has no kind of reference to original sin and the curse of man. We must therefore leave it entirely outside the sphere of our present researches; endeavouring, however, to convey a warning to such as may be tempted, in dependence on the celebrated Assyriologist, to make use of it in a Commentary on the Bible.

Thus, then, we have no formal and direct proof that the tradition of the original transgression, as told in our Holy Scriptures, formed part of the cycle of the records of Babylon and Chaldea, respecting the origin of the world and of man. Neither do we find any allusion to the subject in the fragments of Berossus. But, despite this silence, a similarity between Chaldean and Hebrew traditions on this point, as upon others, has so great a probability in its favour as almost to amount to a certainty. Further on we shall return to certain very valid proofs of the existence of myths relating to a terrestrial paradise in the sacred traditions of the lower basin of the Euphrates and Tigris. But it behoves us to dwell for a few moments on the representations of the sacred and mysterious plant, guarded by celestial genii, that Assyrian bas-reliefs so often display. Up to the present time no text has been found to elucidate the meaning of the symbol, and we have to deplore a want, that no doubt will one of these days be met by the discovery of new documents. But the study of these figured monuments alone renders it impossible to doubt the high importance of this representation of the sacred plant. Whether it appear alone, or, as sometimes happens, worshipped by royal figures, or, as I have just said, guarded by genii in an attitude of adoration, it is incontrovertibly one of the loftiest of religious emblems; and what

places this character beyond doubt is, that we often see above the plant the symbolic image of the Supreme God, the winged disc—surmounted or not by a human bust. The cylinders of Babylonian or Assyrian workmanship present this emblem no less frequently than the bas-reliefs of Assyrian palaces, and always under the same conditions, and evidently attributing to it an equal importance.

[Pg 155]

It is very difficult to avoid comparing this mysterious plant, in which everything points out a religious symbol of the first order, with that famous tree of life and knowledge which plays so prominent a part in the narrative of the earliest transgression. All paradisiacal traditions make mention of it; the tradition in Genesis, which sometimes seems to admit of two trees, one of life and one of knowledge, sometimes of one tree only combining both attributes, and standing in the midst of the garden; the Indian tradition, which supposes four plants on the four counterforts of Mount Méru; and, lastly, that of the Iranians, which sometimes treats of a single tree springing from the very middle of the holy spring of water, Ardvî-çûra, in Airyana-Vædja, and sometimes of two, corresponding exactly to those of the Biblical Eden. This similarity is so much the more natural, that we find the Sabians or Mendaites, an almost pagan sect, dwelling in the environs of Bussorah, who retain a great number of Babylonian religious traditions, to be also conversant with the tree of life, which they designate in their Scriptures as *Setarvan*, "that which shades." The most ancient name of Babylon in the idiom of the Ante-Semitic population, *Tin-tir-kî*, signifies "the place of the tree of life." Finally, the representation of the sacred plant which we assimilate with that of the Edenic traditions, appears as a symbol of life eternal on those curious sarcophagi, in enamelled clay, belonging to the latest period of Chaldean civilization, after Alexander the Great, which have been discovered at Warkah, the ancient Uruk.

The manner of representing this sacred plant varies in Assyrian bas-reliefs and exhibits different degrees of complexity.^[64] It is, however, invariably a plant of moderate size, of pyramidal form, having a straight stem from which spring numerous branches, and a cluster of large leaves at its base. In one example only^[65] is the plant represented with sufficient accuracy to enable us to classify it as the *Asclepias acida* or *Sarcostemma vinimalis*, the plant known as the Soma to the Aryans of India, the Haoma to the Iranians, the crushed branches of which afford the intoxicating liquor offered as a libation to the gods, and identified with the celestial beverage of life and immortality. More generally, however, the plant has a conventional and decorative aspect, not answering exactly to any natural type, and it is this purely conventional form which the Persians have borrowed from Assyro-Babylonian art, and which represents the Haoma on gems, cylinders or cones of Persian workmanship in the era of the Achemenides.^[66] Such an adoption of the most usual shape of the sacred plant of the Chaldeans and Assyrians by the Persians, in order to represent their own Haoma—although the conventional bore no similarity to the real plant—proves that they recognized a certain analogy in the conception of the two emblems. In point of fact the Persians have shown great discernment in their borrowing and adapting; and where they took Chaldeo-Assyrian art for model and for teaching, they only adopted such of those religious symbols common in the basin of the Euphrates and Tigris, as might be rendered applicable to their own peculiar doctrines, and even to a very pure Mazdeism.

[Pg 156]

The adoption of the image of the divine plant of the Chaldeo-Assyrians in order to represent the Haoma is, therefore, a conclusive sign that an assimilation of the symbols had taken place, and we find in it a new proof in support of the close connection between the plant guarded by genii on Assyrian or Babylonian monuments and the tree of life of paradisiacal tradition. Indeed, if Indians vary in opinion as to the nature of the mysterious trees of their earthly paradise of Mènu, even generally admitting of four different species, and if the Bundelesh-pehlevi, in bestowing on the tree of Airyana-Vædja the name of *Khembe*, appears to have had in view one of the plants placed by Indians on the counterforts of Mèru—*i.e.*, the *Panelea orientalis*, which in Sanscrit is called *Kadamba*; it is the "white Haoma," the Haoma type that is almost always found in the sacred books of Mazdeans springing from the middle of the fountain Ardvî-çûra, and distilling the beverage of immortality. The Aryans of India connected a similar idea with their Soma, for the fermented liquor that they produced by pounding its branches in a mortar, and offered as a libation to their gods, is named by them *Amritam*, "ambrosia draught that renders immortal." The Haoma and its sacred juice is also called "that which keeps off death," in the ninth chapter of the *Yaçna* of the Zoroastrians. It is for this reason that, both with the Indians and the Iranians, the personification of the sacred plant and its juice, the god Soma, or Haoma, prototype of the Greek Dionysius, becomes a lunar divinity, inasmuch as he is the guardian of the ambrosia stored by the gods in the moon. And here we have another similarity forced upon us when we stand before Assyrian bas-reliefs, where the sacred plant is guarded by winged genii, having heads of eagles or peripterous vultures. These symbolic beings present, indeed, a singular analogy with the Garuda, or rather the Garsudas of Indian Aryans, genii, half men, half eagles. Now, in the Indian myths, more particularly in the beautiful story of the *Astika-parva* of the Mahâbhârata, it is Garuda who reconquers the ambrosia *Amritam*—that is, the sacred juice of the Soma, used for libations, that had been stolen by demons, and who restores it to the celestial god, himself remaining its guardian. The part played by him and by the eagle-headed genii of Assyrian monuments, with regard to the tree of life, is consequently the same as that which we find in Genesis assigned to *Kerubin*, armed with flaming swords, who were placed by God at the gate of Eden, after the expulsion of the first human pair, to prevent the entrance into Paradise, and to guard its tree of life.

[Pg 157]

In one part at least of Chaldea properly so called, to the south of Babylon, it appears as though it were no longer the type we have just been considering that was employed to represent the tree of life. It was the palm, the tree that furnished the majority of the inhabitants of the district with food, and with fruit from which they distilled a fermented and intoxicating liquor, a kind of wine;

the tree to which they were wont to attribute in a popular song as many benefits as there are days in the year—this palm it was that was there considered the sacred, the paradisiacal tree. We have the proof of this in cylinders that show us the palm surmounted by the emblem of the Supreme God, and guarded by two eagle-headed genii. Moreover, the essential character of the tree of life lies in its fruits affording an intoxicating juice, the beverage of immortality; and accordingly the books of the Sabians or Mendaites associate it with the tree Setarvan, "the perfumed vine," Sam Gufro, above which hovers "the Supreme Life" in the same way as does the emblematic image of divinity in its highest and most abstract form above the plant of life in the monumental representations of Babylon and Assyria.

And, further, the fact that in the cosmogonic traditions of the Chaldeans and Babylonians respecting the tree of life and paradisiacal fruit, there was contained a dramatic myth, closely resembling in form the Biblical narrative of the Temptation, appears to be as positively established as may be in the absence of written texts, by a cylinder of hard stone preserved in the British Museum.^[67] There we actually see a man and woman, the former wearing on his head the kind of turban peculiar to Babylonians,^[68] seated opposite each other on either side of a tree, from whose spreading branches two big fruits hang—one in front of each of the figures who are stretching out their hands to gather it. A serpent is rearing himself behind the woman. This representative might serve as a direct illustration of the narrative in Genesis, nor as M. Friedrich Delitzsch has observed, can it lend itself to any other interpretation.

M. Renan has no hesitation in agreeing with ancient commentators in finding a vestige of the same traditions among the Phenicians in the fragments of the Book of Sanchoniathon, translated into Greek by Philo of Byblos. In point of fact it is there told, in connection with the first human pair, that Aion—which seems a rendering of Havah—"invented feeding on the fruits of the tree." The learned academician even thinks he discovers in this passage an echo of some type of Phenician figured representation, retracing a scene such as that recorded in Genesis, and visible on the Babylonian cylinder. Certain it is that, at the epoch of the great influx of Oriental traditions into the classic world, we see a representation of the kind figure on several Roman sarcophagi, where it indicates positively the introduction of a legend analogous to the narrative of Genesis, and associated with the myth of the formation of man by Prometheus. One famous sarcophagus in the Capitol Museum displays in the neighbourhood of the Titan, son of Japetos, who is performing his work as modeller—a pair—man and woman—in the nudity of primeval days, standing at the foot of a tree, the man's gesture showing that he means to gather its fruit.^[69] We meet with the same group in a bas-relief built into the wall of the small garden of the Villa Albani in Rome, only here it is in still closer conformity with the Hebrew tradition, as a huge serpent is coiled round the trunk of the tree beneath which the two mortals are standing. It is this plastic type that was imitated and reproduced by the earliest Christian artists, when they attempted the representation of the fall of our first parents, which formed so favourite a subject with them, both in sculpture and painting.

[Pg 158]

On the sarcophagus of the Capitol the presence in proximity of Prometheus of one of the Parcæ drawing the horoscope of the man whom the Titan is forming, leads us to suspect in these sculptured subjects the influence of the doctrine of those Chaldean astrologists who had spread themselves, during the later centuries before the Christian era, throughout the Greco-Roman world, and had acquired an especial amount of credit in Rome. Nevertheless, the date of these last monuments renders it possible to look upon the representation of the first pair beside the tree of Paradise, of which they are about to eat, as directly borrowed from the Old Testament itself, as well as from the cosmogony of Chaldea or Phenicia. But the existence of this tradition in the cycle of the indigenous legends of the Canaanites seems to me placed beyond doubt by a curious painted vase of Phenician workmanship of the seventh or sixth century B.C., discovered by General di Cesnola, in one of the most ancient sepulchres of Idalia, in the Isle of Cyprus.^[70]

There we actually see a leafy tree, from the branches of which hang two large clusters of fruit, while a great serpent is advancing with undulating movements towards the tree, and rearing itself to seize hold of the fruit.^[71]

[Pg 159]

Now, we are justified in doubting that in Chaldea, and still more in Phenicia, a tradition parallel to the Biblical account of the Fall ever assumed a significance as exclusively spiritual as it does in Genesis, or that it contained the moral lesson also to be found in the story as given in the Zoroastrian scriptures. The spirit of grossly materialistic Pantheism in the religion of those lands rendered this impossible. Nevertheless, we may remark that among the Chaldeans, and their disciples the Assyrians, at all events from a given epoch, the notion of the nature of sin and the necessity of repentance was to be found more precisely formed than amongst the majority of ancient peoples, and consequently it is difficult to believe that the Chaldean priesthood did not, in their profound speculations on religious philosophy, seek for some solution of the problem of the origin of evil and sin.

With the foregoing reservation, it is, indeed, probable that the Chaldean and Phenician legend of the fruit of the tree of Paradise was nearly akin in spirit to the cycles of ancient myths common to all the branches of the Aryan race. To the study of these M. Adalbert Kuhn has contributed a book of the highest interest.^[72] He deals with such as refer to the invention of fire, and to the beverage of life. These are to be found in their most ancient form in the Vedas, and they then passed over, more or less modified by the course of time, to the Greeks, Romans, Slavs, as well as the Iranians and Indians. The fundamental conception of these myths, which are only to be found complete in their oldest forms, is of the universe as an immense tree, whose roots embrace the

earth, and whose branches form the vault of heaven.^[73] The fruit of this tree is fire—indispensable to human existence, and the material symbol of intelligence; and the leaves distil the Elixir of Life. The gods had reserved to themselves the possession of fire, which sometimes, indeed, descends on earth in the form of lightning, but which men were not themselves to produce. He who—like the Prometheus of the Greeks—discovers the method of artificially kindling a flame, and communicates this discovery to other men, is impious, has stolen the forbidden fruit from the sacred tree, is accursed, and the wrath of the gods pursues him and his race.

[Pg 160]

The analogy between these myths and the Bible narrative is striking indeed. They are, really, one and the same tradition, only bearing a quite different sense, symbolizing an invention of a material order, instead of dwelling on the fundamental fact of the moral order, and disfigured further by the monstrous conception, too frequent in Paganism, of the Divinity as a formidable and adverse power, jealous of the happiness and progress of man. The spirit of error among the Gentiles had distorted the mysterious symbolic memory of the events by which the fate of humanity was decided. The inspired author of Genesis took it up under the form that it had evidently retained among the Hebrews, as among the other nations where it had acquired a material meaning, but he restored to it its true significance, and made it the occasion of a solemn lesson.

Some remarks are still needed regarding the animal form assumed by the tempter in Bible story, that serpent who, as figured monuments have shown us, played the same part in the legends of Chaldea and Phenicia.

The serpent, or, more correctly speaking, different kinds of serpents, held a very considerable place in the religious symbolism of the peoples of antiquity. These creatures figure therein with most opposite meanings, and it would be contrary to the laws of criticism to group together confusedly, as some learned scholars were once wont to do, the contradictory notions linked in old myths with different serpents, so as to form out of them one vast Ophiological system,^[74] referred to a single source, and brought into relation with the narrative in Genesis. But by the side of divine serpents, essentially benign in character, protective, prophetic, linked with gods of health, life, and healing, we do find in all mythologies a gigantic serpent, who personifies a hostile and nocturnal power, a wicked principle, material darkness, and moral evil.

Among the Egyptians we meet with the serpent, Assap, who fights against the sun and moon, and whom Horus pierces with his weapon. Among the Chaldeo-Assyrians we find mention made of a great serpent called the "enemy of the gods," *aiub-ilani*. We need not introduce here the myth of the great cosmogonic struggle between Tiamat, the personification of Chaos, and the god Masuduk, related in a portion of the epic fragments, in cuneiform character, discovered by George Smith. Tiamat assumes the form of a monster often repeated on monuments, but this form is not that of the serpent. We are distinctly told that it was from Phenician mythology that Pherecides of Syros borrowed his account of the Titan Ophion, the man-serpent precipitated into Tartarus, together with his companions, by the god Kronos (El), who triumphed over him at the beginning of things, a story strikingly similar to that of the defeat of the "old serpent, who is the accuser and Satan," repulsed and imprisoned in the abyss, which story does not, indeed, occur in the Old Testament, but existed among the oral traditions of the Hebrews, and makes its appearance in Chapters xii. and xx. of the Apocalypse of St. John.

[Pg 161]

Mazdeism is the only religion in whose symbolism the serpent never plays any but an evil part, for even in that of the Bible it sometimes wears a benign aspect, as, for instance, in the story of the brazen serpent. The reason is, that in the dualistic conception of Zoroastrianism the animal itself belonged to the impure and fatal creation of the evil principle. Thus, it was under the form of a great serpent that Angromainyus, after having tried to corrupt Heaven, leaped upon the earth; it was under this form that Mithra, god of the pure sky, fought with him; and, finally, it is under this form that he is eventually to be conquered and chained for 3000 years, and at the end of the world burned up with molten metals.^[75]

In these Zoroastrian records, Angromainyus, under the form of a serpent, is the emblem of evil and personification of the wicked spirit as definitively as is the serpent of Genesis, and this in an almost equally spiritual sense. In the Vedas, on the contrary, the same myth of the conflict with the serpent has a purely naturalistic character, evidently describing an atmospheric phenomenon. The idea most frequently repeated in the ancient hymns of the Aryans of India at their primitive epoch, is that of the struggle between Indra, the god of the bright sky and the azure, and Ahi, the serpent, or Vritra, the personification of the storm-cloud that lengthens out crawling in the air. Indra overthrows Ahi, strikes him with his lightnings, and by tearing him asunder sets free the fertilizing streams that he contained. Never in the Vedas does the myth rise above this purely physical reality, never does it pass from the representation of the warring atmospheric elements to that of the moral conflict between good and evil, as it does in Mazdeism.

According to a certain school of modern mythologists, of which M. Adalbert Khun is the most prominent representative in Germany, this storm-myth is the pivot on which hinges a universal explanation of all ancient religions whatever. And in particular the fundamental source, origin, and true significance of the traditions we have been reviewing, including the Biblical accounts of the Fall, are all, according to him, to be looked for in this naturalistic fable of the *Vedas*. No doubt the allegory which served as starting-point to this myth was not unknown to the Hebrews. We find it distinctly expressed in a verse of the Book of Job (chap. xxvi. 13), where it is said of

[Pg 162]

God, "By his Spirit he hath garnished the heavens; his hand hath formed the crooked serpent." Here, indeed, by the parallelism of the two clauses of the verse, the former determines the meaning of the latter. But the Vedic myth is only one of the applications of a symbolic statement, of which the source does not lie among the Aryans; but must be sought much further back in the primitive thought of humanity, anterior to the ethnical separation of the ancestors of Egyptians, Semites, and Aryans, of the three great races represented by the three sons of Noah; for it is common to all. The pastoral tribes, whence sprung the Vedic hymns, only connected it with an idea exclusively naturalistic, almost childish, and specially drawn from the phenomena that most interested their simple existence, to which all advanced civilization, whether material or intellectual, was still foreign. But among the Egyptians the same metaphor appear with a far more general and elevated significance. The serpent Assap is no longer the storm-cloud but the personification of darkness, which the sun, under the form of Ra or Horus, encounters during his nocturnal passage through the lower hemisphere, and has to triumph over before he appears in the east. Thus, the conflict between Horus and Assap is daily renewed at the seventh hour of the night, a little before the rising of the sun, and the "Book of the Dead" shows that this strife between light and darkness was taken by the Egyptians as the emblem of the moral strife between good and evil. Neither is the serpent the mere storm-cloud in those paradisiac legends of Chaldea and Phœnicia in which we have been able to discern a relation in form to the record in Genesis. The aspect of the cloud lengthening out in the sky may, indeed (I could not positively deny it without more positive certainty) have furnished the first germ of the idea of constituting the serpent the visible image of the adverse power, combining the intimately associated ideas of darkness and of evil—a notion from which, by a confusion of the physical and moral orders, no ancient religion, not even Mazdeism, was entirely able to free itself, unless it were that of the Hebrews. But with all the highly civilized peoples whose traditions we have scrutinized, the great serpent symbolizes that dark and evil power in its widest significance.

But be this as it may, my faith as a Christian finds no difficulty in admitting that, in order to relate the fall of the first pair, the inspired compiler of Genesis made use of a narrative which had assumed an entirely mythical character among neighbouring peoples, and that the form of a serpent assigned to the tempter may have had for starting-point an essentially naturalistic symbol. Nothing obliges us to understand the third chapter of Genesis literally. Without any departure from orthodoxy we are justified in looking upon it as a figure intended to convey a fact of a purely moral order. It is not, therefore, the form of the narrative that signifies here, but rather the dogma that it expresses, and this dogma of the fall of the human race through the bad use that its earliest progenitors made of their free will, remains an eternal truth which is nowhere else brought out with the same precision. It affords the only solution of the formidable problem which constantly returns to rear itself before the human mind, and which no religious philosophy outside of revelation has ever been able to solve.

[Pg 163]

FRANÇOIS LENORMANT.

[Pg 164]

POLITICAL AND INTELLECTUAL LIFE IN GREECE.

ATHENS, August, 1879.

If during this latter period of our national existence, which from every point of view presents one of the most serious crises in our history, all Europe finds itself agitated by constant commotions, Greece, which more than any other European nation is interested in the various events of the Eastern crisis, is truly under the power of a national paroxysm. The serious modifications which have been accomplished in the state of affairs in the East were of a nature to exert a great influence on Greece, threatening each day to swallow up that country in the tempest. Doubtless, it was impossible for Greece to remain indifferent at a time when nations, but till lately unknown, were created by caprice or interest, without themselves having any sentiment of their national existence, and which now threaten her national and political future in the East. The armed protests of Crete, of Epirus, of Thessaly, and of Macedonia, were but the commencement of a general participation of Hellenism in the struggle between the Slavs and the Turks, and doubtless of a more serious complication of the Eastern Question, to the great dismay of European diplomacy, which can not or will not re-establish the equilibrium between the different national elements which struggle fiercely with each other in the Balkan Peninsula. It was only the demand made on Greece by united European diplomacy, at the commencement of the war in the East, that she should remain neutral, and the promises made to her that she should not be forgotten in a Congress of the Powers relative to the improvement of the state of things in the Ottoman Empire, which induced her to restrain her national aspirations, and to await that justice from a European Congress, which she was on the point of claiming by arms. However, the delay which has occurred up to the present time in the solution of the question of the delimitation of the Hellenic frontiers—which is still pending between the Greek Government and the Sublime Porte—is a sad sign of the blindness of the Turkish Government, and equally hurtful to both peoples, paralyzing their progress in civilization. For if this question were once settled, they would be able to turn their attention to another quarter—that, namely, where the common interests and dangers of the two peoples meet. For not only the Sublime Porte, but Europe also, should well understand that a predominance of the Hellenic element in the East has in nowise for its object to satisfy the ambitious tendencies of a race. Modern civilization is in danger of being overrun by the furious waves which threaten to carry away everything in the Russian Empire. Those

[Pg 165]

fundamental principles of Russian Society, those ideas (extravagant and anti-social in all points of view) of a Panslavist Cæsarism, and the principles of Nihilism, and of other social and religious sects, so absurd and so contrary to human nature, between which there is just now raging a combat so keen and so barbarous, are symptoms fatal to civilization and to the peace of Europe, and the forerunners of a catastrophe near at hand. Slavism, which is as ancient as the Latin and German nationalities, has not, up to the present time, personified any civilizing element in European history. Its proper character is despotism, and in recent times it is anarchy in its most inauspicious and frightful aspect. Consequently, Europe must open her eyes to the danger which threatens her. A nationality which, from the very beginning of its historical activity, represents principles of society and of civilization in a state of decadence—at a period when it should be full of youth and of ideality—ought to be seriously studied by those who direct the destinies of the West. Not only is the preponderance of Panslavism in the East a menace and a danger for the future and for the regeneration of Hellenism, but dangers and complications more grave threaten all Europe, in consequence of such preponderance. The Cossack in the East, at Constantinople or near it, signifies nothing else but an entire and immediate overturning of the European equilibrium and of modern civilization. A man who well knew Russia and the Russians, the famous author of the "Soirées de Saint Petersburg," has written these words:—"We must know how to set bounds to Russian desire, for by its nature it is without limits." Deeply significant words of Joseph de Maistre! The history of Russian policy is a development of this idea. The public conscience of Europe ought to meditate upon and consider that peril which the Marquis of Salisbury exposed with so much lucidity and precision in that famous and memorable circular addressed to the Powers of Continental Europe—that circular which had made us hope, but in vain, for the advent of a new era in the history of English diplomacy and in the progress of international morality. But now we must, alas! repeat the famous saying of M. de Beust: "There is no longer any Europe!"

We hoped, in common with the whole of the free and enlightened opinion of Western Europe, that this circular of the noble Marquis, containing the exalted traditions of George Canning with respect to the Hellenic cause, was about to inaugurate a new era in European diplomacy. What, then, was the motive for the sudden change in British diplomatic policy during the Berlin Congress? Lord Beaconsfield, on his return from Berlin, attempted to throw a doubtful light on this mysterious change in the policy of the Cabinet of St. James's, when he finished his speech with this vague remark, which has since become so celebrated among us: "Greece has a future; and if I might be permitted to offer her my advice, I would say to her, as to every individual who has a future, Learn to wait."

[Pg 166]

We refrain from examining here the motives for this change, because we believe it is very difficult to lift the veil which covers the mysteries of the political inconstancy of the Cabinet of St. James's; and leaving the solution of this enigma to time, that great Œdipus of history, we will here make only this remark, that English diplomacy has allowed a favourable opportunity to escape for taking the initiative in all the great questions which concern the general interests of civilization, and this notwithstanding the hopes which Lord Salisbury's circular for an instant caused us to entertain. However, the propitious moment has not yet passed away. France, which appears at this moment to be holding aloft the standard of the policy first enunciated by the Marquis of Salisbury, serves not only the interests of Greece and of Europe, but also those of England.

Beware of the North! In the triumph of the Panslavist idea there is not only the absorption of Hellenism, there is something of still more general interest, which for some time past should have furnished European diplomacy with matter for reflection, before the icy blast of the North, changing our fears into realities, obliges diplomacy to submit to accomplished facts.

Europe to-day, in proceeding with the execution of a decision of the Congress, is not only doing a work of importance, but also a work of justice in repairing the wrong which she formerly committed in narrowing the limits of the Greek kingdom, and hindering the physical development of its people. The political prophets of the time when this new European State was created—Palmerston, Leopold of Belgium, Metternich—were unanimous in pointing out how doubtful was the future of this nation, which had not the elements necessary to a regular life, and which, consequently, was incapable of fulfilling the exalted mission which Europe had confided to it in creating it. What was the cause of this niggardliness of the Powers towards a nation full of youth and activity, at the very moment of its creation? Mr. Gladstone has already told us in this REVIEW.

[76]

Greece, which, more than all the other Eastern races, had always the *pre-eminence* intellectually and morally, might, in concert with the West, and making herself, so to speak, the organ of its views in the East, become a powerful barrier against that torrent of Slavism which for some time past has threatened to overwhelm the Balkan peninsula.

[Pg 167]

In that ethnological pandemonium, which is called the Peninsula of the Balkans, of which so many nationalities dispute the possession, to the exclusion of the only possessors whose rights are consecrated by history, Greece seems to be the only nationality which, better than all the other races,—most of which lack historic traditions and a true national consciousness,—is capable of realizing the views of Europe for the fulfilment of which, on the initiative of England, the European Congress was convoked at Berlin. It was, doubtless, these principles which inspired the Congress when, in Article 13 of the Treaty, it ordered the annexation to Greece of the bordering provinces of Epirus and Thessaly; this was a reparation of the political fault committed at the time of the creation of the new kingdom. However, a dishonest policy on the part of Turkey

delays up to this moment the accomplishment of the Treaty fulfilled by her in its other Articles. She has reaped its advantages, but she seems not to wish to submit to its sacrifices. We cannot conceive what benefit the Sublime Porte derives from this vain delay. It ought to understand that it will not gain anything from this continual paroxysm with which it finds itself struggling since the last Eastern crisis. And we see with satisfaction that public opinion in Turkey has already acknowledged that an enlargement of Greece, even at the expense of Turkey, is not contrary to the interests of the two races, whose common peril from the Slavs is indisputable. Turkey must seek the centre of her activity and power in Asia, where she may play an important part, and not in Europe, where she has always remained a stranger, and has never succeeded in creating an indigenous and national civilization. It will one day depart from Europe, this Mussulman race, which for five centuries has only encamped in Europe, without leaving any memorial of civilization or morality, except a few pages of military history. It can carry European civilization to the nations of Asia, initiating them into its mysteries, by means of a wiser government and a more enlightened activity. This is the true and just policy of Turkey in the future. By the cession of the provinces where the Turkish element is *nil* she will gain much more strength than by their retention, which cannot be of any profit to her.

We hope that Turkish statesmen, whose enlightenment and intelligence are well known, will recognize the urgent necessity for a sincere understanding between the two neighbouring States on the basis of the cession of the two provinces in accordance with the Berlin Treaty; then perhaps, later on, a union may be formed in order to oppose the common enemy. The obsolete policy of *non possumus*, behind which Turkey persists in sheltering herself has been, on more than one occasion, hurtful and fatal to her.

The province of Epirus, without the town and department of Jannina, is like a body without a head. The town of Jannina, which fills so glorious a page in the modern history of Hellenism, has been ever since its foundation the capital of Epirus in every point of view. It is only the bad faith of the Turkish Government which could take advantage of the inconceivable patriotism of the Albanians to create all of a sudden an Albanian nationality. It is true that there does exist an Albanian race, an insignificant branch of that powerful tree of the Hellenic family; but this race has never played an important, independent, free part in history. Once only, in the time of Scanderbeg, does Albania appear to have fulfilled a separate mission, in fighting against the Turks for the liberty and independence of her rugged mountains; but the brilliant star of this memorable and almost unique epoch in the poor history of Albania, the famous hero of Croia, according to recent researches into this part of the history of the Middle Ages, was not of Albanian origin. In those long combats for Hellenic liberty and independence, when the Albanian race fought with the *ilephtes* and *armatoles* of the national regeneration, it was not an Albanian idea which inspired those brave champions of our independence: it was the Greek standard, it was the *sabanum* of Constantine, under the shadow of which the tyrant was combated by the Greek patriots, and by those who, in this time of sophism and paradoxes, plume themselves upon Albanian nationality, in claiming with incomparable *naïveté*, in documents and manifestoes in which historical traditions are disfigured, the independence and liberty of a nation which never existed in history. These mountaineers, these intrepid combatants in a holy cause, remained, during all that revolutionary epoch of Greece, in the rear of the Hellenic idea, which was doubtless their national idea. This idea impresses its peculiar stamp on the life of the nation, in its material, moral, and intellectual existence; but such has never existed in the Albanian race. Unity of history, of language, of religion, all that constitutes the essence of nationality, is altogether wanting in the Albanians. This is not the time to discuss all the obsolete and paradoxical things which have lately been said about the Albanians by anthropologists, ethnologists, &c. &c. We do not wish, either, to pronounce against them the death-sentence of the celebrated geographer Kiepert, who wrote some time ago in the *National Zeitung* of Berlin, "We think the total dissolution of this part of an important and very ancient nation, which always retrogrades" to be very probable, and useful for European interests. Doubtless, the Albanians have a right of historical existence; but that history in which is always represented more or less the famous scientific conception of the great naturalist of modern times, the *struggle for existence*, is favourable only for those who know how to work and struggle successfully in the arena of civilization. Up to this moment, this race has been entirely unknown in history. A learned German naturalist, Haeckel, has found in this region of Eastern Europe the rudiments of a savage life exactly resembling as to manners the state of pre-historic times, especially in Upper Albania, where this race has a numerical and national preponderance. The Albanian nationality, then, about which its *soi-disant* representatives have made so much noise, has no real existence, and is at this day but a national Utopia, a *terra incognita*, existing only in the ardent imagination of certain high functionaries of the Sublime Porte, and certain religious fanatics of Mussulman Albania. As for the non-Mussulmans, they still remain supporters and friends of the Hellenic idea and of the Greeks, with whom they have always made common cause, and have played a glorious part in our history by their courage and patriotism. Let the Albanians show by their European culture that there are among them the elements of a compact race which has the full consciousness of its individuality; and, what is more important, let them abstain from declaring to-day against Hellenism, by becoming the instruments of treacherous movements whose sole aim is their absorption. The object of the Hellenic idea is not the absorption of the races with which it is called to live; it is neither fusion nor conquest, as has been more than once proved in history. It is only in the Greeks that the Albanians will find their natural friends and allies; it is only with them that they will not lose their national individuality, because they are their brothers, retarded in the history of humanity and of civilization.

But if the idea of an independent and peculiar Albanian race and nationality is shown to be false

[Pg 168]

[Pg 169]

by ethnological research and by historical documents, it is a still greater error and a ridiculous pretension to say that the town of Jannina is the centre and the capital of the Albanian idea and nationality. This argument, which for some time past has been going the round of Europe, and which has found supporters in Italy,—in the Italian Government unfortunately,—is truly pitiable, and unworthy of being seriously debated, in the view of those who are at all acquainted with the history of modern Greece. But since, in these times of vain questions and useless and sophistical debates about the peoples of the East, much has been written and argued on this question in the European press, we think it may not be out of place to give some information on the political and intellectual state of Jannina, its population, and the historical and moral traditions of the town, which was formerly, prior to the creation of the new kingdom, the intellectual capital of Hellenism.

Jannina is, of all the districts of Epirus, that in which the Greek population is the most numerous and the most compact. Out of 100,000 inhabitants of this district, there are only 5000 Mussulmans; and these also are of Greek origin, because they all speak Greek. And in Turkey in Europe, Jannina is the most Hellenic village, in which there is not one inhabitant who does not speak the language of the country. It is, perhaps, an historic curiosity, but still it is a fact which has already been proved, that the Sublime Porte has no right of conquest over this town, because Jannina has not been conquered by the Turks, but has only recognized the Turkish rule by a treaty which guaranteed to it all the rights of self-government—rights which were afterwards trampled under foot in consequence of a rising in the unfortunate town. In the seventeenth century, at the very dawn of the Hellenic revival, Jannina was already a centre of light which illumined the dark sky of Hellenism; for a long time this part of Epirus was the mother-country of the greatest patriots, and the most earnest propagators of national education. Athens was but a village, known only through history, when this town was already the central point of the national consciousness; the capital of the learning of the dispersed nation, which was without a political official centre. In the famous school of this town, afterwards called Ζωσιμαία Σχολή (The School of Zosimas), illustrious professors taught Greek literature; and, according to the testimony of many travellers, Jannina was the town whose inhabitants spoke the most correct Greek. Our national historian, M. Pappariopoulos, speaks thus of it in his French work, already well known and esteemed in Europe^[77].—"Jannina especially became a true nursery of teachers, who in their turn were placed successively at the head of other schools in Peloponnesus, in continental Greece, in Thessaly, in Macedonia, at Chios, at Smyrna, at Cydones, at Constantinople, at Jassy, at Bucharest." The intellectual superiority of this town lasted until the death of Ali Pasha and the creation of the new kingdom, when the centre of the moral and political activity and work of the nation was transferred to Athens, the town which, from its grand traditions, was worthy to become once more the capital of the great Hellenic idea. But the school of Jannina still remains one of the most renowned and the most useful centres for the propagation of the learning and literature of Ottoman Greece. At this day, for the foreigner who visits the capital of the kingdom of the Hellenes, the first spectacle which will attract his attention will be that majestic view of national monuments, worthy to be compared with the most renowned monuments of the European cities: these are the University, the Academy, the Polytechnic School, the Arsakion, the Seminary of Rizari, &c., all eloquent witnesses of the patriotism and self-sacrifice of the nation. Who are the founders of these monuments? By what means have these brilliant ornaments of the Hellenic revival been constructed? The greater part of their generous founders are Epirotes, natives of Jannina itself, that town of which one of the most illustrious *savants* of regenerated Greece spoke with so much appropriateness when he compared its school to a great river which has given rise to several streams, which in their turn have watered and fertilized all the other towns of Greece, but which to-day, contrary to all reason and to historic truth, is represented as the Albanian capital, and finds for this strange idea supporters who willingly sacrifice the rights of populations to political interests and necessities; a sad but eloquent sign of the moral confusion of our times, and of the bad faith which dominates over the political and international conceptions of some Governments.

[Pg 170]

[Pg 171]

The political life of Greece has, doubtless, been very stormy of late years. The state of confusion and uneasiness which followed the expulsion of King Otho, and, later, the unfortunate issue of the Cretan rising, acted to some extent as a drag on the peaceful progress of the new kingdom. Besides this, the adoption of a political Constitution dissimilar and entirely strange to our customs and political and social habits, the introduction of what is called in political language the Constitutional *régime*, transplanted from the cloudy region of England to the sunny climate of Greece, has not proved the political panacea which had been hoped for by the enthusiasm of the political ideologists of our times. Already, and especially during the last fifteen years, the intellectual life of a young nation full of health and vigour has been wasted foolishly in a barren struggle about political formalities, while other questions, more serious and more vital to the national development, have been neglected. No doubt we may console ourselves with the thought that we are neither the first nor the last for whom the fruit of the political wisdom of old Albion has proved so bitter and so indigestible, and that other nations of the Continent, more advanced than ourselves in civilization, have committed the same fault of not taking into account that the Government of a nation is not a mere question of forms, but that it ought to be the expression of its moral and social life, that it ought to represent its historical traditions and political aspirations. Like most of the Continental nations, we also have the external forms of the English Constitution, without having its internal essence, which constitutes the real value of its political institutions,—viz., Self-government. It is true that the political wisdom of nations does not improvise itself, nor reveal itself all at once in its fulness, as Minerva of old sprang from the head of Jupiter, clad in complete armour, but that it develops itself during their historic progress

amidst vicissitude, and by turning to profit the lessons of trial and experience. It is this that gives us the hope that in future our nation, enlightened by the painful events of which we are now reaping the sad fruits, will become more clear-sighted, especially after the annexation of the new Hellenic provinces, when the need will be the more felt for a revision of our political system, and the reconstruction of our new political edifice on a basis more real, more solid, more durable, and more in conformity with our national character, with our needs, and with contemporary aspirations. Our political life, especially during its latter years, instead of adding a page to our contemporary history, has, on the contrary, consumed and wasted foolishly many of our intellectual faculties which might have been more usefully employed. At the moment when vague questions, which were useless to our national and political development, were being gravely debated in the Parliament of Athens, Greece might, with a more perfect political Constitution and military organization, have shown herself fully in a position to face the storm which still agitates the Balkan peninsula; might have shown herself to be a respectable Power, capable of measuring her strength with her enemies. The East was in flames, the populations of the Balkans in full revolt, only the Government of Athens had no definite policy. Whilst the Greeks of Turkey were waiting impatiently, and turning their eyes to the Cabinet of Athens, this latter, under the presidency of M. Coumoundouros, remained inactive and irresolute. When the danger became more serious, and all parties, under the impulse of an obsolete illusion, had united themselves in order to form that common Government which our press has called the Œcumenical Government, then was seen in all its obviousness the political incapacity of those parties who for fifteen years past had governed Greece, without doing anything, and without thinking of the important and serious position which Greece might have occupied in the East. This coalition ministry, without principles and without political aim, was driven from office, after a period of internal languor, in order to give place to M. Coumoundouros, the skilful perplexer of our policy, worthy to be compared in more than one respect with Walpole, whose memory, doubtless, does not occupy an illustrious and honourable page in English political history. It is this same uncertainty and confusion which reigns to this day in the thoughts and in all the actions of the Government, which under a wiser and more politic direction might and ought to say the last word in those negotiations, which already have been going on for a year between the Cabinets of Europe, on the subject of the new frontiers of Greece.

[Pg 172]

But if our political life cannot call forth the admiration and enthusiasm, nor win the applause of an impartial judge, the individual and social progress of the nation, on the contrary, in many points of view, compensates us to some extent for our political inexperience and incapacity in these latter times. If the Hellenic State, wearing a dress which is burdensome and strange to its customs and its free individuality, cannot advance as it should do, on the other hand society has in other respects made immense progress. The impulse which has been given to the active mind of the nation of late years is in every way remarkable. In its social development Greece does not encounter any obstacle which hinders the march of its civilization. The ancient class-divisions of Europe, which are now exciting terrible passions that threaten the overthrow of the social edifice, have no cause of existence under the calm and happy sky of regenerate Greece. The social work of the progress and development of the national forces goes on here without obstacles, in a perfect accord of all classes of society. We have not here classes having opposite aspirations, suspected one by the other, and ready to engage in a deadly struggle. We only want political wisdom, and then Greece, which has not to-day to expiate past faults, because she has already expiated many of them, will be capable of becoming a political society worthy of the nineteenth century.

[Pg 173]

We recommend to the readers of this REVIEW two works recently published in French, in which they will be able to study the progress of Greece since its regeneration. These are—"La Grèce telle qu'elle est," by M. Moraitinis; and "La Grèce à l'Exposition universelle de Paris en 1878," by M. Mansolas, director of the Office of Statistics, in which may be found a record of the social and intellectual work which in the space of fifty years has transformed Greece, by changing the uncultivated desert of former times into a prosperous and vigorous society. The apology of much-misunderstood and much-decried Hellenism is made by the eloquence of the figures in this history, which is symbolical of its spirit. The regenerate country, by comparison with the other provinces which have remained under the yoke of Turkey, witnesses to the work which has been accomplished, and which has transformed the aspect of Greece, thanks to its national and political enfranchisement.

Fifty years ago Greece emerged from a catastrophe: she had been deprived of everything and devastated by a long and desperate war; she was without resources, without agriculture, without commerce, without manufactures, without the least social or political organization; everything had perished during her long struggle for independence, except her genius and her faith in the future. This faith has already wrought marvels. Agriculture, which is *par excellence* the basis of the prosperity of nations, has made considerable progress; its development goes on day by day in geometrical progression. Thus, in the space of the last fifteen years there have been taken into cultivation nearly 5,000,000 acres. The number of inhabitants engaged in the cultivation of the soil, including the shepherds, is, according to the census of 1870, 562,559 out of the 901,387 inhabitants (among the 1,457,894 inhabitants of the kingdom) whose employment could be stated. Of this number 218,027 are agriculturists, properly so called. This is the chief industry of the country. Like agriculture, manufactures have also made considerable progress of late. We extract from M. Mansolas' book the interesting description which he gives of the state and

progress of manufacturing industry in Greece:—

"Any one returning to Athens after an absence of fifteen years would certainly be surprised to see, on landing at the Piræus, tall chimneys by the side of the railway station, and the vast district of industrial establishments which has been formed, where a few years ago one did not see a single cottage, a tree, or a blade of grass.

"When we consider that all these manufacturing establishments which one sees in Greece are the work of a few years, we shall learn with interest what progress has been made in so short a space of time, and so much the more so since all this is due to individual enterprise, to the association of capital, and to competition, that universal condition of the progress of nations as of individuals. The various manufactories in which steam-power is employed, distributed among the different towns in the kingdom, have been founded since 1863; their saleable value is over £1,000,000 sterling. They spend £1,600,000 in raw material, about £100,000 in fuel, and turn out products of the value of nearly £2,000,000. Seven thousand three hundred and forty-two operatives, male and female, are employed in these establishments, which, under the impulse of the national industry, are multiplying and developing themselves daily with considerable rapidity. Again, it is a Greek, an Epirote, Evangeli Lappa, at whose cost have been instituted, under the name of [Ὀλύμπια, exhibitions of agriculture, and manufactures every four years, in which, conformably with the fundamental statutes, all the products of Hellenic industry are to be represented, and particularly its manufactures, its agriculture, and cattle-breeding. A magnificent palace, erected expressly for it at the cost of the generous founders, is destined to receive, when finished, the fourth exhibition of the Ὀλύμπια."

[Pg 174]

In common with agriculture and manufactures, trade is likewise making considerable progress. It is to the commercial spirit of the Greeks, of which traces are everywhere seen, that we owe the considerable extension which commerce has undergone in Greece since her national regeneration. Her general trade shows the following figures:—

Year.	Imports.	Exports.
1865	£3,196,403	£1,775,775
1874	4,261,870	2,663,662

The spirit of association, under every aspect, is the secret of human progress and development in modern times. In Greece this idea, essentially human, of association has not yet realized the grand results in the way of progress which we admire in the rest of Europe. The poverty of the country, recently delivered from general destruction, is, doubtless, one of the chief causes of this. However, since the year 1868, a great impetus has been given to our national life in respect of association. The first company was formed in 1836. From that time to the present 144 joint-stock companies have been created at different dates. Of all these companies there remain at this day fifty, witnesses to the vitality of the country, and to the constant progress of Greece. This fact is still more clearly affirmed by the operations of the National Bank of Greece.

This bank, established in 1842 with a capital of £165,000 divided into 5000 shares, possesses to-day a capital of £600,000. While in the year following its establishment (1843) the highest amount of its note circulation only reached £12,500 that of its discounts £85,000 and that of its advances £6500; in 1877 the note circulation reached £1,500,000, its discounts £3,800,000, and its commercial advances £1,100,000. The annual dividend has increased from about £3 per share in 1846 to £8 6s. 6d. in 1875.

[Pg 175]

It is in the budget more especially that we may ascertain this great national progress which is manifesting itself under every aspect of Hellenic life. The revenue of the kingdom, according to the budget for the year 1879, amounted to over £1,600,000, while at the date of the establishment of the first monarchy the total of the ordinary public revenue was £260,000.

This extension of the vital forces of the nation is, doubtless, a visible progress. We have not yet arrived at the completion of the national work necessary to place us on the level of European civilization. Much has yet to be done; but this does not depend only on the good-will and the capacity of the inhabitants. The too narrow limits of the kingdom, the political uncertainty which has weighed upon the life and upon the future of the country, particularly during recent years, divert the attention of the Government and of the nation to more general and more urgent matters. The peaceful labour of the country has not, however, been entirely suspended during the late period of agitation and crisis, when the cannon was thundering in close proximity to us. The material and social progress which has taken place during the last three years shows the confidence which the nation has in herself, in her mission, and her future.

Already, since the creation of the new kingdom, the West, regretting in some sort what it had just done, had shown itself very severe towards Greece. After the phil-Hellenic enthusiasm a singular change supervened in the sentiments of Europe. A calculating and scornful spirit had succeeded that fever of generosity which produced the day of Navarino. It was thought that a Liliputian could play the part of a giant. Impossibilities were asked of a new State, without means, without resources, scarcely risen from the tomb of oblivion and ruin. If clear-sighted men of this period had been listened to—Leopold of Belgium, Palmerston, Metternich even—Greece would have had limits more natural in order that she might breathe and act more freely. This youngest child of the European States would to-day be a strong Power, capable of struggling against the Panslavist spectre in the East, and of realizing the projects of the West in this country of the Balkans which appears to be menaced by Muscovite conquest. However, if in a military point of view Greece

cannot to-day be the chief actor, she yet remains the most important factor of civilization in the East in intellectual, political, and ethnological respects. It is the indomitable genius of this nation which in the darkest moments of its historical life has been able to throw some brilliant flashes over the history of the human race. It is Greek industry which to-day plays *par excellence* the most active part in the propagation of culture in the East. Intermediate between the West and the East, the Greeks assimilate with an astonishing rapidity the results of progress; and the ancient East, that unfortunate mummy of history, begins to be born again, to revive, to breathe, to speak, like the legendary statue of Memnon, under the breath and at the approach of the new spirit casting its vivifying rays on the motionless and silent body of the *alma mater* of human civilization.

[Pg 176]

Here is a country which formerly existed and which lived only in its past, and which to-day presents itself with promises, aspirations, claims on the future. It was only an historic tradition, a sad souvenir, a geographical expression, a land of the dead, where everything was lacking except the sun, which still shone as a lamp which cast a mournful light on the tomb of a departed glory. This land has to-day become quite young again. There are towns now, where formerly the shepherd led his flock silently among the ruins of a past which he did not know. Athens, formerly an insignificant village, is to-day the finest town in the East, and may be compared with the first cities of the West. She numbers, according to the recent census, more than 70,000 inhabitants; the Piræus, which contains more than 20,000 of this number, has latterly become the centre of the industrial activity of the new State. All the large towns of Greece are now centres of commerce, of manufactures, of culture. The population which existed at the time of the creation of the new kingdom has been doubled, in consequence of the material development of the country, whose prosperity is every day attracting foreign capital. The credit of Greece is assured in the money-markets of Europe in consequence of the much desired agreement which has been come to between the Government and the creditors of the unfortunate loan of 1824. Already the *Times* is raising its voice in favour of the Greek exterior loan recently contracted at Paris. Greece has, indeed, yet other unworked resources; she lacks only sufficient means by the aid of which she might continue her civilizing march in history.

The disquietude and uncertainty in the condition of Eastern affairs which have followed upon the war and changed the political condition of the Balkan peninsula have not been able to completely arrest the intellectual movement which is a peculiar trait of the Hellenic race. On the contrary, there has in recent years been observed in the life of the nation a more active and serious tendency to a radical improvement and a more complete reorganization of the education of the country, and particularly of popular instruction. This famous word, which for some time past has been going the round of Europe, and according to which it was the German schoolmaster who gained the victory over France, is in Greece also, as everywhere in Europe, the watchword of the day, which occupies individuals as well as the Government. The impetus which was at first given by the *Syllogoi* on this fundamental question of a more complete instruction of the nation has been followed by the Government, which does not ordinarily distinguish itself by taking the initiative in general questions which do not particularly affect its political interests. Primary normal schools, on the model of those of Germany, without, however, losing sight of the character and the individuality of the Hellenic mind, have been founded in different parts of the kingdom, and in the Turkish provinces; and we hope that this lively and generous impulse will produce the most glorious and most useful fruits in the future of the nation. A thorough and living popular education is always the fundamental basis of the morality and liberty of nations. It is always the surest guarantee of their intellectual and national independence. In modern society, in which, according to the famous saying of Royer Collard, democracy moves like a ship in full sail, in which the people, by universal suffrage, take a direct part in the affairs of the State, popular instruction ought to be always very extensive and scattered abundantly among the people. We would even say, quoting from M. Jules Simon, that no citizen who does not know how to read and write ought to take any part in the concerns of the State. Our Governments unfortunately do not take the initiative in order to revive the noble tendencies of the nation. However, there are here individuals, associations, and societies (*Syllogoi*), who, in a way different from that which is taking place in other countries, have the preponderance and make up for the deficiencies of the Government.

[Pg 177]

It is to the "Society for the Propagation of Greek Literature" that we owe this new impetus which has been given to public instruction. Popular instruction, methodical, practical, according to principles and experience of modern science, at present occupies all the enlightened minds in our nation, both in independent Greece and in the Greek provinces of Turkey. The principal aim of this society is the instruction of the two sexes, especially in the Greek communities of Turkey, and the publication of works useful for the young and for the people generally. It has, according to the latest returns, founded at Thessalonica a model school similar to those of Germany, in which are four classes, five masters, and 118 pupils. It has, moreover, established in the same town a normal school to educate masters for primary instruction. This same Society has also opened, in several communes and communities of enslaved Greece, schools for boys and girls. It has subsidized several schools in the communes of Greece and in the Greek communities of Turkey concurrently with other Societies, which have the same end in view, of instructing the people and of maintaining the patriotic idea in the Greek provinces of Turkey, which the rising wave of Pan Slavism to-day threatens to engulf. In order to attain this object, the Society has, up to the present time, published several works of instruction, and has expended considerable sums in the purchase and distribution of books for the use of the people. It has founded at its own cost, or aided by the liberality of generous fellow-countrymen, several prize competitions, the most important of which have for their subjects the Greek language, education in Greece, the

mercantile marine of the country, labour, the improvement and encouragement of agriculture, manufactured and artistic products, commerce, and the means of communication and circulation in general. At the present moment one of our fellow-countrymen, who knows how to put his fortune to the most noble use, M. Zaphiropoulo, a rich merchant of Marseilles, has placed at the disposal of the Society the necessary funds for publishing some geographical maps, in order to give a better knowledge of the historical geography of Greece. These maps are those of "Ancient Hellenism," of "Macedonian Hellenism," and of "Hellenism during the Middle Ages." These maps, taken in conjunction with that which was recently published at the cost of the same donor, will serve to give the most exact and complete idea of the historic and national unity of Hellenism.

[Pg 178]

The "Parnassus," a Society of young men connected with literature and the sciences, has for its object the progress of the nation and general usefulness. This Society is developing day by day, and will soon become one of the most active and serviceable agents of the literary education and the scientific movement of the country. The Parnassus pursues this aim by the reading during its sessions of articles and memoirs, by the collecting of documents and materials relating to the language, songs, and popular legends, as well as by the publication of these works in a Review which appears under the title of *Νεοελληνικά Ανάλεκτα*. In this collection are published popular songs of modern Greece, riddles, proverbs, distichs, tales, &c. Under the auspices of this same Society is published another Review, bearing the name of the *Sylogos*, which has already won, by its articles so interesting and full of learning, the first place in the periodical press of Greece. But what specially indicates the exalted and philanthropic point of view in which this Society has placed itself is the foundation of a school, almost unique of its kind, and which does not exist even in Europe—that which is called the "School for Poor Children." In this school the classes are held in the evening. They comprise reading, writing, arithmetic, grammar, physical geography, Greek history, and elements of natural philosophy and chemistry. It is an interesting sight to see attending these lessons each evening a number of orphan children, who, by means of a suitable education, will one day be good citizens and useful members of society, whose enemies they would probably have become had they remained without education and without a moral influence on their character.

It is perhaps needless for me to enlarge upon other learned societies and associations having an analogous object in view—such as the Archæological Society, the Association of Friends of the People, the League of Instruction, the Musical and Dramatic Society, and other similar ones, which demonstrate that activity of the Greek mind—always vigorous, always aspiring after moral victories—which is the characteristic feature of all its history.

This movement was manifested in a brilliant manner some time ago, when the general congress of all the societies and associations assembled under the initiative of the Parnassus Society. This was a most evident proof of the intellectual and national unity of Greece. Representatives from all points wherever Hellenism is scattered—of free Greece, of enslaved Greece, and of the Greek colonies established in all parts of Europe—assembled at Athens, that Jerusalem of the dispersed people. The congress, which lasted a fortnight, discussed several questions touching the future of Greece and her mission in the East. We are unable at this moment to say what were the results. What we hope is that from this moment may commence a new era of work and of activity, greater, more important, than that which has already preceded our modern history. Alone, more or less proscribed, finding in the policy of the Western Powers only a cold indifference, our future depends entirely upon continual and persevering labour. Greece, though, doubtless, she has not yet produced men worthy to be compared to the ancients,—those masters in every branch of science, art, and literature,—is nevertheless the most active agent in the propagation of Western civilization in the East. We have seen this phenomenon produced in the Congress of the *Sylogoi*, where might be seen the representatives of Athens and of Constantinople, of Macedonia and of Asia Minor, of Alexandria and of the Greek colonies established in Europe—of all places, in short, where the beautiful and sonorous Greek tongue makes itself heard—discussing all the questions which constitute the vital force of Hellenism. The words of an ancient writer who called Athens "the Greece of Greece" were brought to my memory when the president, in a parting address to the members of the congress, called this latter "the organized manifestation of the public consciousness, and the incarnation of the intellectual unity of the nation."

[Pg 179]

This unity is concentrated in the University of Athens. This is the most brilliant star, which directs the nation in the ways of civilization and progress. It exercises a great and salutary influence as well in the free country as in the neighbouring provinces. Pupils of the University of Athens become zealous apostles, who propagates in all corners of the East devotion to the national sentiment, and reawaken the ancient traditions and hopes of the future. At the doors of the University young men from all the Hellenic countries, who will form the generations of the future, meet and mingle, more and more. This fusion of the nation, fortunately already begun by those great struggles for independence during which all have passed through the same dangers and kept up the same combats under the same standard, the University is gradually completing, by prosecuting unremittingly the double aim which it proposes to itself,—that is to say, the education and the unity of the Hellenic race. More than two hundred doctors of every branch of science go forth from the University annually, and spread themselves throughout the East, among the Greeks or other nations, carrying with them the salutary influence of civilization and of the spirit of modern times. The University, which includes four chief faculties, possesses at the present time an endowment of nearly £166,000, made up of the donations of various liberal fellow-countrymen, one of whom, recently deceased, bequeathed to it £33,000. According to the return of the last rector of the University, from the foundation to the end of the academical year 1877-78, 8426 students have attended the lectures, of whom 3130 have obtained diplomas. We

[Pg 180]

think that in these figures, more than in the whole of our argument, may be seen that vital force of Hellenism which it exercises on the destinies and the future of the East.

The character of the intellectual movement in Greece is didactic rather than scientific, in the widest acceptation of the term. We have not yet here those strifes and debates which at the present time agitate and enliven the modern mind in Europe. We teach, and teach. This is our mission for the present. Debate, which, if I may so express myself, is the luxury of science,—strife, which betokens a vigorous body trained by labour for the combat, have not yet disturbed the peace of our intellectual arena. We do not concern ourselves with philosophical, theological, or social discussions, and latterly we have abandoned even political discussions, which a few years ago were the exclusive occupation of the newspapers and of the professional politicians at Athens and in the provinces, because the whole attention of the nation has been turned towards the Eastern Question, the solution of which concerns alike its present and its future.

We are in the epoch of translations, but not yet in that of production. Our printing-offices are every day reproducing the results of Western science by means of translations, which spread abroad useful information for the instruction of the nation.

There have not been many original productions within the last few months. M. Koumanondis, the distinguished archæologist, the well-known author of a learned work, Ἀττικῆς ἐπιγραφῶν ἐπιτύμβιοι (Sepulchral Inscriptions of Attica), frequently publishes in a Periodical Review of the University, the Ἀθήναιον, very interesting papers on the archæological discoveries which are daily being made in Hellenic soil. M. Anagnostakis, one of the most eminent professors of our Faculty of Medicine, has recently published two pamphlets full of interest relating to the archæology of that science—Μελίται περί τῆν ὀπτικῆν (Studies on the Optics of the Ancients); and another small work in French, "Encore deux mots sur l'extraction de la Cataracte chez les Anciens."

But a work by the eloquent Professor of History at the University is that which is most deserving of particular mention—viz., the Ἐπίλογος τῆς ιστορίας τοῦ ἑλληνικοῦ ἔθνους, which has been published in French under the title of "Histoire de la Civilisation hellénique." It is a summary of his large work in five volumes on the history of the Hellenic nation from the most distant period down to our own time. The writer has had for his object to establish the idea of Hellenic civilization and history, so often called in question in the West. We may boldly affirm that the author has attained the object of his labour. At a moment when Greece is condemned in Europe unheard, this book has appeared very opportunely as a defence of Hellenism. It is thus that the European press characterizes this product of an enlightened patriotism, in analyzing it in terms as flattering to the author as to the nation for whose apology this book serves.

[Pg 181]

We have here made a rapid sketch of the intellectual work of the last few months. We do not wish to speak now of other publications and labours of young men who promise still more than they realize for science. What we have to say to-day is that Greece, which has taken some eminent steps in progress and in modern culture, ought to repeat to Europe with assurance these words of her Archimedes: Δός μοι που στήναι καὶ τὴν γῆν κινήσω (Give me a fulcrum, and I will shake the earth). The narrow horizon within which this small kingdom was enclosed when it was created does not allow of that intellectual spring and flight which is necessary for the accomplishment of the views and wishes of those who see in Greece the most active and enlightened propagator of civilization among the peoples of the East. Lord Beaconsfield has said of us recently, that we ought to hope, because *the future belongs to us*. I know not whether these words are a biting irony of the author of "Coningsby," or whether they express his sincere opinion on the future of Greece in the East. Doubtless the future belongs to those who hope and work; but no nation can produce anything great by struggling on a soil so small, so barren, and so narrow, just as no individual can work efficiently if deprived of every resource, and kept without air and light.

Such is the position of Greece to-day. She can neither work sufficiently for her physical and moral development, nor become powerful and capable of contending against the Panslavist invasion in the East. Europe will, no doubt, understand this at last; but it will then be too late.

N. KASASIS.

[Pg 182]

CONTEMPORARY BOOKS.

I.—BIBLICAL LITERATURE.

(Under the Direction of the Hon. and Rev. W. H. FREMANTLE.)

The Bishop of Natal has published his seventh and final volume on the Pentateuch (*The Pentateuch and Book of Joshua critically Examined*, by the Right Rev. J. W. Colenso, D.D., Bishop of Natal. Part VII. Longmans: 1879). In the preface he notices the various works, including the Speaker's Commentary, the work of Alford on the Pentateuch, and those of Kalisch, Graf, and Kuenen, which have appeared of late years, together with the New Table of Lessons, and explains the method of the present volume. The body of the work consists of an examination of the Scriptural books from Judges to the Canticles, undertaken with the view of showing what testimony they yield to the views maintained by the author in the earlier part of the work.

Incidentally, however, the books themselves come under review, and the opinion of the author on their age, authorship, and purpose is given. The general results of this laborious criticism may be given as follows:—

It is believed that five persons or sets of persons, at five different periods, composed or rehandled the Pentateuch and the other historical books. These are (1) the first Elohist (E), who was Samuel or one of his scholars; (2) the second Elohist (*E*), who wrote about the end of Saul's reign or early in that of David; (3) the Jehovist or Jahvist (J), who wrote towards the end of David's or the beginning of Solomon's reign, who may be identified with Nathan, and may possibly be the same with *E*; (4) the Deuteronomist (D), who probably was Jeremiah; and (5) the Levitical Legislators (LL), who wrote about 250 B.C., or even later.

The share which each of these is supposed to have had in the six first books of the Bible is given in the final appendix, a "Synoptical Table of the Hexateuch." In another appendix, the author explains the changes in his views of numerous passages, which have led to the more precise conclusions now put forward, and the task is attempted of giving (1) the story of E alone in Exodus and Numbers, and (2) the story of *E* and J by themselves in Numbers, Deuteronomy, and Joshua. Thus the author gives the reader the fullest means of judging of his theory.

It may be best to give the author's conclusions as to the authorship of the various books in order:—

Genesis, chiefly written by E and J, with some additions by *E* and D.

Exodus, mostly by J and D, with a shorter narrative by the earlier authors.

Leviticus, a very late work, wholly by LL.

Numbers, mainly by J and D, but with considerable additions by LL.

Deuteronomy, almost wholly by D, but with a few verses by J and LL.

Joshua, shared between all the writers, but in the proportions indicated by the numbers 1, 1, 4, 4, 7.

Judges, mostly by E.

1 Sam. to 1 Kings xi., by J.

The rest of the books of Kings, by D.

The books of Chronicles, Ezra, and half Nehemiah, by LL; a late, hierarchical, and quite untrustworthy work.

Esther, a mere romance of a late date.

Job, written after the Captivity, about 450 B.C.

Psalms, at various times; great stress is laid on Ps. lxxviii., which is assigned to the age of David, "the golden age of Hebrew literature," which produced also the Songs of Moses and Deborah.

[Pg 183]

Proverbs, written at various times from Solomon till after the Exile.

Ecclesiastes, in the age of Antiochus.

Canticles, in the time of Rehoboam II., about 800, and in the Northern kingdom.

The Bishop believes that the name Jahveh was originally used by some of the tribes of Canaan, that it was then merely a name like that of Chemosh or Milum, but that it was adopted by *E*, the great writer of the early days of David, as the name of the national deity of Israel, and inserted by him in his narrative of the Exodus, and under the influence of the Prophets came gradually to be associated with the noble ideas of purity and righteousness.

The criticisms upon the authors of the latest books are severe and vehement. In the books of Chronicles "the real facts of Jewish history, as given in Samuel and Kings, have been systematically distorted and falsified, in order to support the fictions of the LL, and glorify the priestly and Levitical body, to which the Chronicler himself belonged." In the books of Ezra and Nehemiah, not only the whole narrative (except part of Nehemiah) but also the decrees of the kings of Persia, the letters of the governor, and the prayers of Ezra and the Levites are "pure fictions of the Chronicler;" and the book of Esther is an unhistorical romance, suggested by a wish to account for the existence of the Feast of Purim, which was probably no more than the commemoration of the choosing by lot of the new inhabitants of Jerusalem in the days of Nehemiah.

It was said by Dr. Arnold that the Old Testament required a Niebuhr; and Bishop Colenso is not a Niebuhr. Indeed, it is but fair to him to say that he is modest enough to disclaim functions such

as those of the great German, and to regard himself as preparing the way for their future exercise. Many of his criticisms are telling and convincing. But in his construction he is weak. Even if men can be persuaded that the employment of fiction in the Old Testament histories is as extensive as the Bishop supposes, and that at every turn they are to be on the watch, not only for a Levitical colouring of the narrative but for the most barefaced invention, yet they will hardly be persuaded that the name of Moses should be "regarded as merely that of the imaginary leader of the people out of Egypt, a personage quite as shadowy and unhistorical as Æneas in the history of Rome or our own King Arthur." Indeed, when even Kuenen attempts a reconstruction of the earlier history, his narrative is merely a bald and meagre statement of the events as usually believed. The impartial reader will close this book with the conviction that the goal has not been reached, and will await the time when mere criticism must give way to positive history.

The work of the Bishop of Natal has extended over eighteen years. It closes in a different tone and amid different feelings on the subject from those in which it was begun. It arose in a panic about the doctrine of inspiration; and it created a panic. In the first volume sound criticism could hardly see clearly or escape the series of absurdities on account of the clouds of controversy. In the last volume all this is changed. The author writes calmly and in the consciousness that many of the views it propounds are no longer unacceptable. The present state of theological thought in the English Church (how far brought about by the work itself each man must judge for himself) is such that any serious criticism will be weighed quietly and without prejudice.

The plan of the New Testament Commentary for English Readers (*A New Testament Commentary for English Readers.*) By Various Authors. Edited by C. J. Ellicott, D.D., Lord Bishop of Gloucester and Bristol. Vol. II. Cassell, Petter and Galpin: 1879 has been given in our notice of the first volume (CONTEMPORARY REVIEW for August, 1878). The second volume is in every respect worthy of the first. The Acts of the Apostles and the Second Epistle to Corinthians are taken by Professor Plumptre; the Epistles to the Romans and Galatians by Mr. Sanday; the First Epistle to the Corinthians by Mr. Teignmouth Shore.

The Acts of the Apostles afford Professor Plumptre a congenial field for his powers. He considers that the main purpose of the book is "to inform a Gentile convert of Rome how the Gospel had been brought to him, and how it gained the width and freedom with which it was actually presented." He admits, but justifies, the mediating or reconciling character of the work. This is done successfully, for the most part; but perhaps his vindication of the omission of the dispute between St. Peter and St. Paul at Antioch will be felt to be somewhat constrained, both when he remarks that "there is absolutely no evidence that he (St. Luke) was acquainted with that fact," and when he says: "Would a writer of English Church History during the last fifty years think it an indispensable duty to record such a difference as that which showed itself between Bishop Thirlwall and Bishop Selwyn at the Pan-Anglican Conference of 1807?" The introduction, besides the usual dissertations on the authorship, &c., contains some important and suggestive sections on the relation of the work to the controversies of the time, to the Epistles of St. Paul, and to external history, and on the sources from which St. Luke probably derived his information. It contains also lists of the coincidences between the Acts and St. Paul's and St. Peter's Epistles, of their points of contact with the contemporary history of the outer world, and of the incidents which show the naturalness and veracity of the narrative. The introduction closes with an excellent chronological table from A.D. 28 to 100.

[Pg 184]

The Book of the Acts is treated throughout as sound history, and this enables the commentator to find himself at home in all the circumstances of the contemporary world, both within and without the Church. In the scene on the Day of Pentecost full scope is allowed to the physical phenomena, the storm and darkness, the earthquake and the lightning. Ananias' death is understood as in the familiar phrase "by the visitation of God." The state of Peter in his deliverance from prison (xii. 9) is understood by reference to the phenomena of somnambulism. The "revelation" by which St. Paul went up to the Council at Jerusalem is explained in harmony with the assertion of the Acts that he was sent by the Church at Antioch, as "a thought coming into his mind, as by an inspiration, that this was the right solution of the problem." The healing of the sick by handkerchiefs and aprons that had touched the body of St. Paul (xix. 12) is likened to that attributed to the relics of saints. The accounts of Theudas, Judas, Gamaliel (v. 57), of Claudius (xi. 28), of Herod (xii.), of the early life of St. Paul (vii. 58), of the numbers composing the first congregation at Jerusalem (iv. 37), are interesting and suggestive. Under the vivid realizations expressed in these notes we seem to see the Apostles sitting in permanent conclave (iv. 35), the daughters of Philip as members of an incipient, "order of Virgins" (xxi. 9), or the rapacious Felix catching at the words "alms and offerings" when uttered by St. Paul (xxiv. 26). The extreme fertility of conjecture which we noticed in the Commentary on the Gospels is somewhat chastened, and is exercised in a more legitimate field. The possibility, for instance, of Stephen's having had some connection with Samaria, as accounting for various statements in his speech (note on vii. 16), the possibility that the words of St. Paul's description of God's goodness at Lystra (xiv. 17) may have formed part of an ancient sacrificial hymn, the conjecture that Apollos may have been the author of the apocryphal Book of the Wisdom of Solomon, are all interesting and worthy of consideration.

Turning to Mr. Sanday's portion of the work, on the Epistles to the Romans and Galatians, we have in the introduction to the former Epistle a vigorous and original conception of the object of both Epistles. We give this in the words of the author:—

"The key to the theology of the Apostolic age is its relation to the Messianic expectation among the Jews. The central point in the teaching of the Apostles is the fact that with the coming of Christ was inaugurated the Messianic reign. It was the universal teaching of the Jewish doctors—a teaching fully adopted and endorsed by the Apostles—that this reign was to be characterized by righteousness.... The means by which this state of righteousness is brought about is naturally that by which the believer obtains admission into the Messianic kingdom,—in other words, Faith. Righteousness is the Messianic *condition*, Faith is the Messianic *conviction*. But by Faith is meant, not merely an acceptance of the Messiahship of Jesus, but that intense and living adhesion which such acceptance inspired, and which the life and death of Jesus were eminently qualified to call out."

In accordance with this view, Mr. Sanday, in his analysis of the Epistle, terms it "A treatise on the Christian scheme as a divinely-appointed means for producing righteousness in man, and so realizing the Messianic reign."

The simple view thus indicated, which is also borne out by the "Excursus on Faith, Righteousness and Imputation," is somewhat impaired by another Excursus (D), in which Sacrifice is regarded as the infliction of a penalty. In the notes also this view exercises a weakening influence, and, combined with some other similar features, produces a sense of indistinctness. Otherwise, the notes are written with great care, impartiality, and freedom. There is a devout sense of the greatness of the subject, and much modesty in the treatment of it, while at the same time the commentator does not hesitate to treat all the latter part of Gal. ii. as St. Paul's afterthoughts or comments upon his own words (a suggestion which has a wide application to other passages both in the Gospels and in the Epistles); or to speak of words such as those of Gal. v. 10: "I would that they were even cut off that trouble you," as "momentary ebullitions" which "are among the very few flaws in a truly noble and generous character." As regards the curious question suggested by the MS. discrepancies in the last three chapters of the Epistle to the Romans—namely, whether the Epistle was sent to the Romans alone—Mr. Sanday follows Dr. Lightfoot in believing that its original form was such as we now have it, with the exception of the last three verses, and that these formed an appendix, added on at the end of chapter xiv., when, during his captivity at Rome, St. Paul converted the earlier part into a circular epistle. The interesting view of M. Renan, who believes it to have been originally a circular epistle, and takes the four endings (xv. 33, and xvi. 20, 24 and 27) as the endings of the copies addressed respectively to the Churches of Rome, Asia, Macedonia, and some other unknown, is rather too curtly discussed with the remark that it fails when applied in detail. There is one more serious omission in this part of the commentary. Though honourable mention is made of the commentaries of Dr. Vaughan and Dr. Lightfoot, of Meyer and Wieseler, Alford and Wordsworth, not a single allusion is made to that of Professor Jowett. We can hardly believe that the old theological prejudice against the author has blinded the present commentator to the great exegetical and philosophical value of Professor Jowett's labours. But we cannot account for this strange omission of a work to which all English students of St. Paul's Epistles are so much indebted.

[Pg 185]

The two Epistles to the Corinthians are commented on respectively by Mr. Teignmouth Shore and Professor Plumptre. It is hardly possible that anything new or striking should be written on these Epistles, which in our day have not only passed through the hands of writers like Alford and Wordsworth, but have been a specially congenial field for the genius of F. W. Robertson and of Stanley. But Mr. Shore and Dr. Plumptre have well represented to English readers the sense and spirit of these Epistles and the Church-life which they reveal to us. Mr. Shore's judgment is, perhaps, at fault in a few special instances; he still believes not only in a non-extant Epistle to the Corinthians, but in an unrecorded visit of St. Paul to them; in which Professor Plumptre differs from him (conf. p. 285 with note on 2 Cor. xii. 14 and xiv. 1); he attributes the words, "It is good for a man not to touch a woman" (1 Cor. vii. 1) to St. Paul, not to those who wrote to him; and he thinks the history of the Last Supper was revealed to the Apostle directly in a trance—as to which he might be corrected by Professor Plumptre's explanation of St. Paul's "going up to Jerusalem by revelation" in the note on Acts xv. 2. But these are comparatively small blots, if they be blots, in an exposition which is well worthy to take its place in this most useful of modern Commentaries on the New Testament.

We are glad to hear that Professor Plumptre's "Commentary on the Acts" has been reprinted for the use of schools, and we hope that the other parts of the Commentary may be similarly treated.

The translation of Professor Cremer's "Biblico-Theological Lexicon," from the German, by Mr. Urwick (*Biblico-Theological Lexicon of New Testament Greek*, by Hermann Cremer, D.D., Professor of Theology in the University of Griefswald. Translated by W. Urwick, M.A. Edinburgh: T. and T. Clark), supplies a great want in our helps to the study of the New Testament. Parkhurst is out of date and limited in his range of reference. Winer is a Grammar, not a Lexicon. Archbishop Trench's Synonyms, with all their value, do not cover the whole ground. The student turns, therefore, with eagerness to such a book as that of Professor Cremer. And he will not be disappointed. The book is what it professes to be. The author speaks modestly and truly of his work: "The work which, after a labour of nine years, I have now brought to completion is certainly an attempt only, and effort to do, not a result accomplished; it simply prepares the way for a cleverer hand than mine." He writes as an earnest believer, a pupil of Tholuck's, whose

commentaries he singles out as alone fully investigating the great conceptions embodied in particular words of the New Testament Greek. He seems to have been fired by an expression of Schleiermacher's, which might be taken as the motto for his work: "A collection of all the various elements in which the language-moulding power of Christianity manifests itself would be an adumbration of New Testament doctrine and ethics." Like so many of Tholuck's pupils, he has tested his theology by the practical work of the ministry, not, however, neglecting the student's part, which after many years' toil has issued in the important work which has won him his professorship. The work has reached a second edition, and it is from this second edition (which contains an addition of 120 words) that the present translation is made.

Some words will, we may hope, be added in future editions. Such a word, for instance, as θρησκεία (James i.), which is used for religion itself; or, again, such a word as πηρω, with its compounds, which St. Paul makes the vehicle of so much teaching in Rom. xi.; or ἀρέσκω, a word which may be said to have been converted by the language-forming power of Christianity, and others of equal or greater importance, have as yet no part in this Lexicon. The classical use of the words is fully noticed; it is, he says, in many cases "a vessel prepared to receive the Christian thought." The use of Greek words in the Septuagint is also worked out, though the author laments that the helps for this are so few. Of the Rabbinical or Post-Biblical writings use is also made, and of some of the earlier Fathers of the Church. But we miss the wide range of varied illustration from mediæval and modern literature which charms us in the work of Archbishop Trench. One source of illustration is deliberately put aside. "The works of Philo and Josephus," he says, "afford little help, because of their endeavour to import Greek ideas and Greek philosophy into Judaistic thought." Most students will be surprised to find that, even in reference to the conception of the Λόγος, Professor Cremer considers that Philo's use of the word has no bearing on its use by St. John, which he considers to be simply an adaptation of the "Word of the Lord," as commonly used in the Old Testament and the Rabbinical writers. The object of the work is to discover the conceptions or ideas of the New Testament (or, as the writer expresses it with Rothe, "the language of the Holy Ghost"), by bringing together the passages in which the words are used. Whether he has always succeeded in this, or whether, as in the case of αἰών (where he says that Ὁ αἰών μέλλων is even in Matt. xiii. and xxiv. the new age of the world inaugurated by the resurrection of the dead and the second coming of Christ), or as in the case of σῶμα (where he does not even refer to the apparent use of the word by St. Paul in 1 Cor. xv. and otherwise elsewhere as implying hardly more than personality), he has not at times been dominated by conventional views, each reader must judge. But every student will find in the careful enumeration of passages, and the discriminating and decided but not dogmatic judgment pronounced upon them, materials which will assist him in working out (as each man must do) his own theological conceptions.

[Pg 186]

An edition of the Septuagint, with a literal translation into English (*The Septuagint Version of the Old Testament*; with an English Translation, and with various Readings and Critical Notes: Samuel Bagster and Sons), is a work attempted by no one, we believe, before Mr. Bagster, and will be welcomed by the increasing number of thoughtful students of the Bible. There is a short introduction, stating all that is known of the origin of the Septuagint; the Greek text and English translations are given in parallel columns, in neat and small type, which enables the whole work to be comprised in a moderate quarto volume; and short notes are added which notice variations of readings, alternative translations, and the additions made by the Hebrew original, and direct attention to the passages quoted from the Septuagint in the New Testament. There is also an Appendix noticing a very few words as to which some difficulty arises, and a few passages which are supplied from the Alexandrine text. No mention is made of the Apocrypha.

The translation is for the most part exact and literal, yet made to read fluently, where this was possible—perhaps more fluently than the Greek text. The following passage from Isaiah ix. 1-5, is a good specimen of the translation, and, being well known as the Lesson for Christmas Day, will enable the reader to appreciate the singular discrepancies often existing between the Septuagint and the original text as it stands in our Bible. The passage begins in the English version with the words, "Nevertheless the dimness shall not be such as was in her vexation." In the translation of the Septuagint it stands thus—

"Drink this first. Act quickly, O land of Zabulon, land of Niphtalim, and the rest *inhabiting* the seacoast and *the land* beyond Jordan, Galilee of the Gentiles.

"O people walking in darkness, behold a great light: ye that dwell in the region *and* shadow of death, a light shall shine upon you. The multitude of the people which thou hast brought down in thy joy, they shall even rejoice before thee as they that rejoice in harvest, and as they that divide the spoil. Because the yoke that was laid upon them has been taken away, and the rod that was on their neck; for he has broken the rod of the exacters as in the day of Midian. For they shall compensate for every garment that has been acquired by deceit, and *all* raiment with restitution; and they shall be willing, even if they were burnt with fire.

"For a child is born to us, and a son is given to us, whose government is upon his shoulder; and his name is called the Messenger of great counsel; for I will bring peace upon the princes, and health to him."

(Under the Direction of MATTHEW BROWNE.)

There is something very winning about Mr. Peter Bayne, who, by-the-by, has just received a Doctor's degree from his University, and read whatever you will of his, you quit the page with respect and liking for the author. You will, indeed, go far to find books or articles which more plainly bear the stamp of manliness, kindness, intelligence, and wide reading. These are some of the most necessary qualities of a critic, whether of life or literature, and most of them are of especial value in historical criticism. *That* has lately taken up with principles and methods not very favourable to the just appreciation of such a book as Mr. Bayne's last, "The Chief Actors in the Puritan Revolution;" and it struck some of us that the best points in that work were missed by too many of its reviewers. A venture of a very different kind is *Lessons from my Masters: Carlyle, Tennyson, and Ruskin* (James Clarke & Co.). This large volume has grown out of articles which were originally published in the *Literary World*, but these have now been much elaborated by Dr. Bayne, and have received considerable additions. The essay on Carlyle is beyond dispute the most valuable of the three studies, but they all belong to a class of writing which is sure of a welcome. We feel quite certain, however, that Dr. Bayne imposed upon himself a little, or more than a little, when he undertook his task. He tells the reader plainly he found, as he went on with it, that he could not maintain the attitude of mere pupil, as he had fancied he might. Of course not; and he need not have apologized even indirectly for the freedom of his criticisms, which might well have been much bolder. The real attraction of the work he undertook was, that it *would* give him scope for widely-ranging comment; and it is the inevitable, by no means inartistic or unhealthy discursiveness of the treatment which makes it difficult to do justice to it. But we will venture upon a point or two nearly at random.

In discussing "Model Prisons," or rather the assumptions of that Latter-day Pamphlet, Mr. Bayne takes a view of our duty to criminals with which we agree, and he quotes the fact that the majority of those who belong to the criminal class are found to have abnormal brains and often diseased bodies. He also treats just in the way we might expect the *dictum* that stupidity means badness. The last meaning of that, we almost fear, Mr. Bayne has not quite caught; as John Bunyan meant it, and as Carlyle means it, it is surely true. Again, it seems doubtful if Mr. Bayne, in taking up Kant's complaint that, while there is so much kindness in the world, there is so little justice, has put the complaint in the right place. It is awful true, and not to be hidden from any honest and acute observer, that the love of justice and truth is very weak in most human beings; while the instinct of kindness is comparatively strong. Again, Dr. Bayne nearly surprises us by adopting the commonplace that great talents bring with them an increase of moral responsibility. Well, we all know the insuperable difficulties of the subject, how they all run up at last into one final problem of which the most plausible-looking solutions turn out to be only paradoxes. But, after all, can it be maintained that there is really any final difference in the degree of moral responsibility to be assigned to a man with a constitution like Byron's or Edgar Poe's, and that which is to be assigned to one of those criminals with abnormal brains? Shelley's grandfather was crazed; the father, Sir Timothy, was *half-crazed*; what Shelley was we know. And can we consistently say that his faults (we do not speak of any particular act) were one shade less the natural result of the constitution of his brain than are those of any of Mr. Carlyle's "dog-faced" criminals? Is there any sense in suggesting that the splendid powers of such a man ought to be expected to act as breakwaters against the force of his special temptations? Of course we know how the enlightened British juryman would answer such a question, and equally of course there are rocks ahead answer it as you may; but we must pause a little longer on it than Dr. Bayne does (page 89) over the question "What is justice?"

Passing over other things, we now come to smoother water—the Essay on Tennyson. Here there is, of course, much to say "on both sides." Many of us would have liked a little less poet-worship, and a little more scrutiny. "The Princess" is dismissed with a line or two of apology—but it is far more, for Dr. Bayne's purpose, than "a serio-comic poem,"—it contains, indirectly, a great deal of self-disclosure. There is something very wrong about M. Taine's way of looking at Mr. Tennyson's domestic sweetness, but he has a glimpse of a truth about the poet and his work. Whatever the worshippers of Mr. Tennyson may say, his poetry contains more feeling after human passion if haply he may find it, than of passion itself; and he *is* conventional. He has never been right out and away into the wilderness. His poetry wants largeness, boldness, and breadth of atmosphere. We find no fault—being profoundly grateful for what this exquisite singer has given us; and knowing better than to expect contradictory qualities from the same harp; and certainly M. Taine has made a great blunder in setting up Alfred de Musset on the other side of his antithesis—but it is a fact that Mr. Tennyson has shown in his writings a tendency (or sub-tendency, if the phrase may pass) to please Mrs. Grundy, as well as the higher Pallas—a tendency which does a little to excuse those who insult the poor old soul without occasion; and who, indeed, are sometimes thought to be grimacing at the Divine Wisdom, when they are only teasing the old lady.

[Pg 188]

The subject of "Emendations" interests Mr. Bayne more than it does us, and we decidedly disagree with him in his general apology for the digging up of early writings which the writers may be presumed to wish kept dark. The alteration in the words of Iphigenia in the "Dream of Fair Women" is not as good as it might be, and Mr. Bayne most justly condemns "the bright death," but it is quite clear that the lines as they originally stood—

"One drew a sharp knife through my tender throat
Slowly—and nothing more—"

did not, grammatically considered, express the poet's meaning; and are certainly open to ridicule on other grounds. The words, "And *I knew* no more," *do* express the meaning.

The alterations and additions in "Maud" appear to us to be about as bad as they could be. Explanatory additions were wanted, but not those flat prosaic lines, though Mr. Bayne appears to like them. On the other hand, the verse—

"I kissed her slender hand,
She took the kiss sedately,
Maud is not seventeen,
But she is tall and stately,"

which our intelligent critic does not like, appears to us perfect—in its place. Sweeter love-poetry than the finest parts of "Maud" is not to be found in the language; the remark being confined to the more superficial kinds of love. For the "tender passion" of the poem is, after all, superficial and thin: the strongest parts being the cynical. It has always been a grief to us that so much exquisite poetry (Cantos XII., XVIII., XXII., in Part I; and IV. in Part II.) should have been framed in what is really nothing but a very poor "sensation" novel, with a moral or lesson which is poorer still. Poetry is not bound to be unintermittingly poetic; there must be flat passages,—but such second-hand phrasing as "a war in defence of the right"—"that an iron tyranny now should bend or cease"—"a cause that I felt to be pure and true"—"a giant liar"—is intolerable in a poem of which the climax is so high-pitched. Better the merest conversational familiarity, than this rhetorical magniloquence.

Before passing from Tennyson's poems, we cannot help noting a curious example of Dr. Bayne's tendency to excessive praise and admiration. In that very poor poem, "Sea-Dreams," the city clerk's wife induces her husband to forgive the just-dead man who has robbed them of their savings. Upon which Dr. Bayne remarks; "There is not a nobler heroine in literature than this wife of a city clerk, and I see no reason to believe that there are not many such to be found in London." Nor do we—six women out of ten exhibit every week of their lives "heroism" just as "noble." It is perfectly commonplace; and it is the critic's warm-heartedness which betrays him into these extravagancies of language.

The Essay on Ruskin has been nearly all rewritten, and it is a fine specimen of studious candour, and something more. All we will add is, that we hope Mr. Bayne holds, along with Mr. Ruskin—though it hardly looks as if he did—that "the destruction of beauty is a sacrilege and a sin." This is undoubtedly a fair account of what Mr. Ruskin means in certain portions of his writings, and he is not the only one who has suffered "anguish," little short of despair, at certain "works of profanation." Mr. Bayne quotes Mr. Ruskin's passionate words about the befouling and desecration of the "pools and streams" around Carshalton. Now, it would not be easy, perhaps, to prove that God made those "pools and streams," still lovely in their degradation, in a sense in which he did *not* make the human beings who have "insolently defiled" them; but we may at least say that the human will was concerned not only in the "defiling" but in the production of the defilers, while it was *not* concerned in the production of those "pools and streams." And we may conjecture that if Mr. Ruskin had been asked to decide whether the "pools and streams" should retain their original clearness and beauty, and the human beings remain unproduced, or whether the latter should come into existence and the "pools and streams" be defiled—he would have stood for the first alternative. But if he afterwards followed out his decision to its consequence, it would make an end of what Mr. Bayne rightly calls the "communistic" element in his writings. It is painfully certain that if Mr. and Mrs. Wordsworth had been disgusted by "people from Birthwaite" before the "Excursion" was written, that poem would have been very different here and there.

[Pg 189]

Mr. John Addington Symonds writes much, and he writes with absorbing pains. When he called his new book *Sketches and Studies in Italy* (Smith, Elder, & Co.), had he forgotten a previous title of his, *Sketches in Italy and Greece*? In any case there is a wide difference between the two volumes; in the former we had more of the traveller, in the latter we have more of the scholar, though the traveller is still present; for instance, in the Essay, "Amalfi, Pæstum, Capri," and in the "Lombard Vignettes." In the Essay on the "Orfeo" of Poliziano, and that on the "Popular Italian Poetry of the Renaissance," we are again glad to recognize the author's masterly power in certain kinds of translation; and those the kinds in which the labourers are few, though the harvest is so large. In about seventy pages, close pages it is true, Mr. Symonds presents us with a sketch of Florentine history, the like of which, for compactness and minuteness of information, one knows not where to seek. Mr. Symonds is a striking example of the modern school of "culture"—using that word in its more special sense. Unwearied in the pursuit of detail, it occasionally tires the reader. There is a want of emphasis—not to say a shamefaced avoidance of it; there is the want of grasp which comes of the absence of hearty controlling emotion, or of any purpose beyond what may belong to the monograph before you. There is too much colour, and too little motion—the reader would even be glad of a jolt now and then; almost anything rather than this eternally grave gliding manner, in which the end is like the beginning, the beginning like the middle, and the *quorsum hæc?* seldom answered with anything like energy. If we take an Essay like that on "Lucretius," we become conscious, indeed, of an effort, but it seems rather an effort to lift a weight, than the effort of a living mind in free movement over a large subject. Inevitably we have much that is true, very much of refinement and accomplishment, and of

course a good aperçu now and then; but such interest as there is appears a little forced, as if the author only half-believed in his own points, and too often endeavoured to give an air of breadth to literary stippling by mere largeness of phrase. These hints apply (in our opinion) with peculiar force to the paper on "Lucretius;" but they are not wholly inapplicable to that entitled "Antinous," which does not fall far short of being tedious. But no apology was necessary for reprinting the essays on blank verse, &c., which are contained in the Appendix, though in those also there seems an excessive tendency to make small "points," and force large meanings on trifles. The volume has a finely-executed steel engraving of the Ildefonso group (Antinous) in the museum at Madrid.

There is nothing rude, we trust, in wondering aloud how many readers will know quite off-hand, without glancing lower down, who wrote this exquisite little poem, though scarcely any one will read it without a sob, and none will ever forget it:—

"My little son, who looked from thoughtful eyes,
And moved and spoke in quiet grown-up wise,
Having my law the seventh time disobey'd,
I struck him and dismiss'd
With hard words and unkiss'd,
His mother, who was patient, being dead.
Then, fearing lest his grief should hinder sleep,
I visited his bed,
But found him slumbering deep,
With darkened eyelids, and their lashes yet
From his late sobbing wet.
And I, with moan,
Kissing away his tears, left others of my own;
For, on a table drawn beside his head,
He had put, within his reach,
A box of counters and a red-veined stone,
A piece of glass abraded by the beach,
And six or seven shells,
A bottle with bluebells,
And two French copper coins ranged there with careful art,
To comfort his sad heart.
So, when that night I pray'd
To God, I wept and said:
Ah, when at last we lie with trancèd breath,
Not vexing Thee in death,
And Thou rememberest of what toys
We made our joys,
How weakly understood
Thy great commanded good,
Then, fatherly not less
Than I whom Thou hast moulded from the clay,
Thou'lt leave Thy wrath and say,
'I will be sorry for their childishness.'"

[Pg 190]

Only we hope the number of those who can readily assign the poem to its author is after all, considerable: for it would be an ill omen if "The Angel in the House," "Faithful for Ever," the "Unknown Eros," and their companion poems did not find a fairly large, as well as a choice public. "The Unknown Eros, and other Odes," was published in 1877. Though it contained the little poem we have just quoted, and a few others of the most pellucid simplicity and the most homely sweetness, these were found in the company of "odes" in which the theme was as high-strung as the title, and a few in which the author's peculiarities were stretched to the utmost. On the whole that volume could hardly be supposed to appeal to any but a few. Several years ago, there was a very cheap edition of "Tamerton Church Tower," and most of the other poems (including the "Angel in the House"), and we should conjecture that it sold well—but it is now out of print, we are told. We have now, published by Messrs. George Bell & Sons, a selection from Mr. Patmore's poems, made by Mr. Richard Garnett (himself a poet) and entitled *Florilegium Amantis*. It makes 230 pages in a very handy little volume, and contains some of the most exquisite things Mr. Patmore has printed; along with a few that are new to us. We are not sure that we miss many of the very best (or best-loved) pieces; but judging, as we are at the moment compelled to do, from the earlier editions of the poems, we fancy there has been some "cooking,"—the sort of thing which an affectionate reader who gets his poet by heart always resents a little. The "Wedding Sermon," as we have it here, looks like an extension of Dean Churchill's letter to Frederick in "Faithful for Ever"—though we note some changes in the old familiar lines. Some very charming touches are omitted in "The Rosy Bosom'd Hours;" but we are not surprised, for we had them struck out once by an editor! The first four lines, about the curtained and locked "coupé" in the train, were, we presume, looked upon as sure to set the hogs snorting over any such touch as "the isthmus of your waist." Some portions of "The Victories of Love" seem to have been worked into "Amelia." The piece entitled "Alexander and Lycon" does not strike us as being good enough for its company. But certainly we know of no such "lover's

garland" as this, and do not well see how there can be such another. This must not be taken to imply that Mr. Patmore will seem to every thoughtful reader consistent in his presentation of the ethics of his topic. For example, Dean Churchill's Sermon will not hang together with Mrs. Graham's beautiful letter to Frederick upon the difficulties of married life.

If there is any real defect in this nosegay, it is, perhaps, that we do not see a little more of Lady Clitheroe, with her ever-delightful humour. But perhaps Mr. Garnett—or Mr. Patmore, looking over his shoulder—remembered Mr. Shandy's advice to my Uncle Toby, to eschew mirth while paying his addresses to Widow Wadman. We, however, are under no restraint in this respect, and recommend everybody who takes up Mr. Patmore to make the most of Lady Clitheroe, and not to pass thoughtlessly over her most playful sayings; for they are usually quite as wise and good as the serious passage which we now extract from her letter to a newly-married couple:—

"Age has romance almost as sweet,
And much more generous than this
Of your's and John's. With all the bliss
Of the evenings when you coo'd with him,
And upset home for your sole whim,
You might have envied, were you wise,
The tears within your mother's eyes
Which, I dare say you did not see.
But let that pass! Yours yet will be
I hope, as happy, kind, and true
As lives which now seem void to you.
Have you not seen shop-painters paste
Their gold in sheets, then rub to waste
Full half, and, lo, you read the name?
Well, Time, my dear, does much the same
With this unmeaning glare of love."

[Pg 191]

These are the last words of the book, and, having read them, the worst enemy of lovers' garlands will not accuse Mr. Patmore of "putting stuff and nonsense into people's heads" about love and marriage.

Two more slight but perhaps not uninteresting remarks. It may be from our ignorance, but we have never been able perfectly to enjoy the lines—

"It was as if a harp *with wires*,
Was traversed by the breath I drew."

The force of the "harp" suggestion is plain, and it is good, but why "a harp *with wires*?" The other small matter is amusing. The piece in praise of England (p. 76), reproduced from "Faithful for Ever," is dated 1856, and this is the only date given in the volume. What does it mean? We conjecture that Mr. Patmore has an almost savage wish to make it clear that since what he has elsewhere called "the year of the great crime, when the false English nobles, with their Jew, slew their trust," he thinks this beautiful description has become inapplicable to his country:—

"Remnant of Honour, brooding in the dark,
Over your bitter cark,
Staring, as Rizpah stared, astonished seven days,
Upon the corpses of so many sons
Who loved her once,
Dead in the dim and lion-haunted ways,
Who could have dreamt
That times should come like these?"

Those are a few of the bitter lines about England which abound in "The Unknown Eros, and other Odes."

Among books to possess—books to be bought, begged, or stolen, pleasant to look at, pleasant to dip into, and useful to refer to, we give a place in the front rank to *Poems of Rural Life in the Dorset Dialect*, by William Barnes (C. Kegan Paul & Co.), and nobody will dispute this award. Many of these poems are familiar upon the tongue, or laid up silent-sweet in the memory of hundreds of world-weary Cockneys, who never set eyes on a Dorset vale, and probably never will. Mr. Barnes writes a modest and characteristic preface explaining that two of these three Collections of rural poems had long been out of print (we are glad to hear it), and also calling attention to the glossary at the end of the volume, "with some hints on Dorset word-shapes." Mr. Barnes is past reviewing, and we will only add that this complete collection (467 pages) forms a handsome and well-printed volume, and is altogether a thing to be delightedly thankful for.

Titles often prove misleading things, and it is not often that the outside of any book gives the faintest hint of its quality, unless it tells you, or nearly tells you, the publisher's name, for of course there are publishers who very rarely issue bad, or even weak books. *Memories: a Life's*

Epilogue. New Edition. With a Lament for Princess Alice. This is so very unpromising a title-page that if it had not been for the names, Longmans, Green & Co. at the foot of it, we might well have begun to turn over the leaves with some prejudice against the anonymous author. But a very casual glance informs the reader, in this case, that he has to deal with a highly intelligent man of the old school, with plenty of caustic humour in him. The author appears to be a gentleman advanced in years, and the "Memoirs" consist of recollections of incidents in his father's life and his own, going back at least as far as the days of Cribb and Molyneux, and taking in some pleasant scenes of Continental travel. There is something exceedingly quaint, almost ludicrous, in the author's way of employing the Spenserian stanza, and as it is not always clear that he is conscious of the humour there is in it, the reader's attention is kept on the alert in the very last way that would commend itself to a critic:—

"The matron of the house obligingly
Led him to two large rooms on the first floor,
Where he would have more light and liberty,
With a good walk along the corridor;
Besides which, they expected one or more
Nice gentlemen to-morrow afternoon.
The gentleman who left the day before—
Poor man! he had a cough would kill him soon—
Ten months he had been with them on the twelfth of June."

[Pg 192]

This is certainly odd, and the puzzle is that though the author, as we have said, has true and biting humour in him, he never drives his stanza with the conscious *lilt* that you find in, for example, Byron's use of a substantially kindred measure in "Beppo," or "Morgante Maggiore." Take the first lines that occur to one's mind in the latter:—

"There being a want of water in the place,
Orlando, like a trusty brother, said,
Morgante, I could wish you in this case
To go for water. You shall be obeyed," &c.

Here Byron is making the flat prose of the metre (so to speak), a source of humour in itself: but we cannot find that the author of these "Memoirs" intends anything of the kind. We agree with some of our brethren in finding the occasional lyrics good, and the opening lines of the seventh canto contain hints of genuine poetic quality. Altogether the book is a noticeable budget of gossip in verse, with not a few strong, pointed passages to relieve the effect of the flat or weak pages; which latter are, to speak the truth, too numerous. We should guess the author to be a very "clubbable man."

This is a very pleasant title, at all events, *A Nook in the Appennines, or a Summer Beneath the Chestnuts*, by Leader Scott, author of "The Painter's Ordeal," &c., &c. With twenty-seven Illustrations, chiefly from Original Sketches (C. Kegan Paul & Co.), and the book is pleasant too. Finding the heat at Florence, on the 11th of June—not *last* June—too much for them, it being 96° in the shade, an English family flee to a nook in the mountains, where an old villa has been got ready for them; and there they sit, "at the receipt of coolness," like Lamb's "gentle giantess," till September. The villa on the Apennines is 2220 feet above the level of the sea, and the thermometer stands only at 70° in the open air. Now 70° is ordinary agreeable summer heat for England; though it is many degrees higher than anything we have seen (up to the middle of July) in England this dreadful year. The illustrations are helpful, and, without being obtrusively antiquarian, have most of them a retrospective or historical interest, as well as the more obvious one which is common to illustrations. The forty short chapters of which the book consists are filled with sketches of the life our English friends lived in the mountain nook, and of the manners and daily lives of the peasantry by whom they were surrounded—and these will be more instructive to a reader who knows a little about the Etruscans than to one who knows nothing of them. The interest of the narrative is never strong, but it is strong enough to carry the attention equably forward to the end, and there is no affectation; but it is a great mistake, and an unkindness to the reader, to omit, in a case of this sort, giving a sufficiently full, complete, and picturesque account of the travelling party themselves. We ought to be told how many there were, their ages, relationships, &c., and something of their previous travelling experience, if any.

Of course it is a good thing when a first-rate French, German, or Scandinavian novel is translated into English, and this is pretty sure to happen, when it does happen, through the agency of high-class publishers. But it is a very different thing when translations of foreign novels are thrown at our heads by the score, by writers or publishers whose chief object is to pander to certain questionable tastes. We fear that this evil is upon us, or not far off. But a word of pleasant, if qualified, welcome is due to *A Distinguished Man: a Humorous Romance*, by A. Von Winterfeld, translated by W. Laird-Clowes, (C. Kegan Paul & Co. 3 vols.). The chief thing to *qualify* the welcome is the fact that the author is too fond of hinting at the skeleton in the cupboard of what people call "modern thought." But apart from this, the book is amusing, and often more than amusing. It belongs to a type which is very rare in English literature—a sort of child-like farce,

that is exceedingly difficult to describe; but it must be a very saturnine reader that can help a good laugh at some of the wild adventures of the German schoolmaster and German doctor upon English ground. These two men are rivals in love, and have both sought the hand of a German butcher's daughter. In the fulfilment of a certain ordeal, or test, which he imposes, they have to travel by way of Ostend to London, and thence to Edinburgh; the one who is first at certain marked points in a given route, to be the winner of the fair prize. Make up your mind that you are going to read some nonsense, and you will enjoy the book. The accuracy of the German in guide-book matters, in spelling, and in just those matters in which a French author always fails, is very striking. But we fear he is a little off the line once or twice. Is there in London any teacher of mathematics who keeps a man-servant, and covers his floor with carpets of velvet pile?

FOOTNOTES:

- [1] Captain C. A. G. Bridge, R.N.: "The Revival of the Warlike Power of China," *Fraser's Magazine*, June, 1879.
- [2] See *Blackwood's Magazine*, July, 1879, pp. 120, 121.
- [3] Apropos of these remarks it is worth while quoting here a memorial by the ex-Ambassador Kwo Sung-t'ao, published in the *London and China Telegraph* of 7th July, 1879, as the first presented to the Throne on his return to China, and in which the best that he can say of England, notwithstanding his cordial reception and marvellous experiences, seems to be that he was "excessively cast down in a strange country," where, "had he been put into a ditch, there would have been nobody to cover him with earth." The very name of the place to which he was accredited appears to have been beneath mention to his august master. The *Peking Gazette* of the 3rd moon, 3rd day, contains the following memorial from Kwo Sung-t'ao, late Ambassador at the Court of St. James's, to the Emperor:—"Your servant," he writes, "has suffered from many bodily infirmities. Relying upon the heavenly (*i.e.*, your Majesty's) grace, I was appointed to go abroad on service of heavy responsibility. I am now feeble with age, having served at so great a distance; I also deplore my stupidity, and am extremely apprehensive of my inability in performing the functions devolving upon me. Since the sixth or seventh moon of the year before last I have suffered from insomnia. A year ago my spirits became daily more *abattu*. In the second month of last year I suddenly experienced phlegm rising in my mouth, and vomited fresh red blood, without being able to stop it, so that in a trice a basin would get quite full. I consider that my life has been marked by increasing afflictions; my respiration is impeded; I am agitated and nervous; already I have contracted an asthma, and this I certainly had not formerly. Excessively cast down, in a strange country several tens of thousands of li away, I thought that if I were put in a ditch there would be nobody to cover me with earth. Fortunately, by virtue of the heavenly (*i.e.*, Imperial) compassion, having been graciously permitted to give up my office, all that remains of me, protractedly wearing out my failing breath, is due to the overflowing grace of the Holy Lord (the Emperor). During the two years I have been abroad I have passed under the hands of foreign doctors not a few, who felt my pulse and administered medicine in a manner very different from native practitioners. In relieving my indigestion and removing the torpor [of my liver] they occasionally produced some little effect; but my constitution became weaker every day, and there was no restoring it. After casting about this way and that, there seemed but one resource left to me—to take advantage of a steamer bound for Fu (*i.e.*, Shanghai), and then to return by way of the Yangtze River to my native place and put myself under medical advice. Prostrate I implore the Heavenly Compassion to grant me three months' leave of absence, in order to establish a complete cure, so that perhaps I may not contract disease that will prove incurable. After your servant has got home it will be his duty to report early the day of his arrival, and he earnestly desires that he may be restored to health. Then I will return to the capital to resume my functions, and implore that some trifling post may be given me that I may testify my gratitude by strenuous exertions, like a dog or a horse. Wherefore I, your humble servant, now beg for leave of absence on account of my ill-health, and respectfully present the petition in which my request is lucidly set forth, entreating with reverence that the sacred glance may rest upon it."
- [4] CONTEMPORARY REVIEW, May, 1879, p. 261.
- [5] *L. c.* p. 262.
- [6] "A classification of any large portion of the field of Nature, in conformity to the foregoing principles, has hitherto been found practicable only in one great instance, that of animals."—*Logic*, third edition, 1851, vol. i., chap. viii. § 5, page 279.
- [7] CONTEMPORARY REVIEW, July, 1879, pp. 716 and 717.
- [8] *L. c.* p. 717.
- [9] CONTEMPORARY REVIEW, July, 1879: "What are Living Beings?"
- [10] Very small deer, commonly called in error musk-deer.
- [11] The European beavers have abandoned the dam-building habit. They retained it, however, as late as the thirteenth century.
- [12] By the Author in a Paper read before the Zoological Society in Nov. 1864. See also his "Man and Apes," Hardwicke, 1873; and the article "Ape" in the "Encyclopædia Britannica," vol. ii. p. 148.
- [13] "Histoire Naturelle," tome xiv. p. 61, 1766.

- [14] For an explanation of the zoological system of nomenclature which has been adopted since the time of Linnæus, see CONTEMPORARY REVIEW for May, page 262.
- [15] See ante, p. 14.
- [16] See CONTEMPORARY REVIEW for July, p. 710.
- [17] See CONTEMPORARY REVIEW, July, p. 710.
- [18] For a summary of our knowledge respecting this group, see the "Linnean Society's Journal," Vol. xiv. (Zoology), p. 136.
- [19] A "spore" is a minute reproductive particle.
- [20] See CONTEMPORARY REVIEW for July, 1879, p. 714.
- [21] Some botanists think that yeast is no true and definite kind of plant, but that it is only a conglomeration of fungoid spores of divers sorts.
- [22] This motion is that referred to at the bottom of page 696, in the CONTEMPORARY REVIEW for July, 1879, as *Cyclosis*.
- [23] Some readers may be startled at the mode here adopted of primarily dividing the Phanerogams, and may object to it as opposed to usage; but reasons will be given later for the mode of division here adopted.
- [24] The above-named plants may for our purpose be thus conveniently grouped together, according to the older fashion of botanists. Strictly speaking, however, they should be divided amongst several orders—*e.g.*, hazel and hornbeam (*Corylaceæ*), the oak, beech, and chestnut (*Capuliferæ*), the birches (*Betulaceæ*), the willows (*Salicaceæ*), &c.
- [25] Containing upwards of 2500 species.
- [26] "Comte and Positivism," p. 140.
- [27] "The Unity of Comte's Life and Doctrine," p. 28.
- [28] Pol. Pos. iii. p. 419. I quote from the translation.
- [29] Pol. Pos. iii. p. 71.
- [30] Pol. Pos. iii. p. 218.
- [31] Ibid. iii. p. 365.
- [32] Pol. Pos. iii. p. 348.
- [33] Ibid. iii. p. 383.
- [34] Ibid. iii. p. 376.
- [35] Ibid. iii. p. 283.
- [36] Pol. Pos. iii. p. 78.
- [37] Ibid. iii. p. 346.
- [38] Pol. Pos. iii. p. 346.
- [39] Ibid. i. p. 562.
- [40] Pol. Pos. i. p. 106. In my first article (CONTEMPORARY REVIEW for May, p. 211) I inadvertently spoke of the hierarchical arrangement of society as extending to the proletariat. This is inaccurate, for Comte rather dwells on their "homogeneity," and seeks to obliterate all distinctions of rank among them, only allowing to the engineers a kind of "fraternal ascendancy." Pol. Pos. iv. p. 307.
- [41] Pol. Pos. iv. p. 294.
- [42] Pol. Pos. iv. p. 292.
- [43] It seems to me not improbable that the level was determined by simply flooding (though to a very small depth only, of course) the entire area to be levelled—not only the pavement level, but higher levels as the pyramid was raised layer by layer. By completing the outside of each layer first, an enclosed space capable of receiving the water would be formed (the flooding being required once only for each layer), and when the level had been taken the water could be allowed to run off by the interior passages to the well which Piazzi Smyth considers to be symbolical of the bottomless pit.
- [44] The irregular descending passage long known as the well, which communicates between the ascending passage and the underground chamber, enables us to ascertain how high the rock rises into the pyramid at this particular part of the base. We thus learn that the rock rises in this place, at any rate, thirty or forty feet above the basal plane.
- [45] There is a statement perfectly startling in its inaccuracy, in a chapter of Blake's "Astronomical Myths," derived from Mr. Haliburton's researches, asserting that in the year 2170 B.C. the Pleiades were "*exactly at that height that they could be seen in the direction of the Southward-pointing passage of the pyramid.*" The italics are not mine. As this passage pointed 33-2/3°, or thereabouts, below (that is south of) the equator, and the Pleiades were then some 3-2/3° north of the equator, the passage certainly did not then point to the Pleiades. Nor has there been any time since the world began when the Pleiades were anywhere near the direction of the southward pointing passage. In fact they have never been more than 20° south of the equator. The statement follows immediately after another to the surprising effect that in the year 2170 B.C. "the Pleiades *really* commenced the spring by their midnight culmination." The only comment

an astronomer can make on this startling assertion is to repeat with emphasis the word italicized by Mr. Haliburton (or Mr. Blake?). The Pleiades being then in conjunction with what is now called the first point of Aries, culminated at noon, not at midnight, at the time of the vernal equinox.

- [46] This date is sometimes given earlier, but when account is taken of the proper motion of these stars we get about the date above mentioned. I cannot understand how Dr. Ball, Astronomer Royal for Ireland, has obtained the date 2248 B.C., unless he has taken the proper motion of Alcyone the wrong way. The proper motion of this star during the last 4000 years has been such as to increase the star's distance from the equinoctial colure; and therefore, of course, the actual interval of time since the star was on the colure is less than it would be calculated to be if the proper motion were neglected.
- [47] Russland unter Alexander II. Leipzig: 1870.
- [48] "The day and night of the battle passed, and the sufferers received no food or water, and their festering wounds were undressed. The following morning the Russians entered and took possession, and made the day one of rejoicing WITH THE VISIT OF THE CZAR AND THE IMPERIAL STAFF; but this celebration of the event, however short it may have seemed to the victors, was a long season of horrible suffering for the wretched, helpless captives who stretched their skeleton hands in vain towards heaven, praying for a bit of bread or a drop of water. Neither friend nor foe was there to alleviate their sufferings, or to give the trifle needed to save them from a painful death, and they died by hundreds; and before the morning of the third day the dead crowded the living in every one of those dirty, dimly-lighted rooms which confined the wounded in a foul and fetid atmosphere of disease and death. It was only on the morning of the third day that these wretched, tortured creatures had been left to their fate, that the Russians began the separation of the living from the dead."—*Daily News* Letter from Plevna.
- [49] There is a notion in this country that Herzen, at one time, was banished to Siberia, and lived as an exile there. The idea is founded on a book of his, published in German and English, under the title of "My Exile in Siberia." Herzen, however, was never banished to Siberia, but only interned for a time at Perm, which is several hundred miles from the Siberian frontier, and later at Novgorod. There, as a Government official, he had to sign the passport documents of those who were transported to Siberia. He left Russia, and lived abroad in voluntary exile when he wrote his works of Pan Slavistic propagandism under Socialist colours.
- [50] The system is thus expounded in the "Laws of Manu," i. 68-86. For its ulterior developments see Wilson, Vishnu-Purāna, pp. 23-26, and 259-271.
- [51] Theopompus, cited by the author of the treatise "On Isis and Osiris," attributed to Plutarch (c. 47), already pointed out this doctrine as existing among the Persians.
- [52] Ewald calculates the four ages of the world which he believes he has discerned in the Bible as follows:—1. From the Creation to the Deluge; 2. from the Deluge to Abraham; 3. from Abraham to Moses; 4. from the Promulgation of the Mosaic Law. Such epochs have scarcely any resemblance to the Ages of Hesiod or of the Laws of Manu. And, moreover, it is well to note that wherever we meet simultaneously, as we do with Indians, Iranians, and Greeks, with the existence of the four ages and the tradition of the Deluge, these are completely independent of each other, have no connection whatever, which indicates a difference of origin, from sources having nothing in common. Nowhere does the Deluge coincide with the transition between two of these ages.
- Nevertheless, there is a point where a certain approximation may be established between the theories of India and those of the Bible. The Laws of Manu say that in the four successive ages of the world the duration of human life goes on decreasing in the proportion of 4, 3, 2, 1; in the Bible we have the antediluvian patriarchs, with the exception of Enoch, who was translated to Heaven, living about 900 years. Subsequently Shem lives 600, and his three first descendants between 430 and 460; to the four succeeding generations there is assigned a life of between 200 and 240 years; finally, from the time of Abraham the existence of the patriarchs comes nearer to normal data, and no longer reaches a maximum of 200 years.
- [53] "Vendidād," ii. It is also related how Yima preserved the germs of men, animals, and plants from the Deluge. See, too, "Yesht," i. 25-27, ix. 3-12, xv. 15-17. "Bundehesh," xvii.
- [54] "Yesht," xix. 31-38. "Bundehesh," xxiii. and xxxii. "Sad-der," 94.
- [55] "Yesht," xix. 46.
- [56] "Vendidād," i. 5-8.
- [57] Demons.
- [58] It is rather remarkable that the life of Adam, which, according to Genesis, was one of 930 years, should so nearly approach this duration.
- [59] Genii.
- [60] In the "Yacna" (xxxii. 8) it is Yima who teaches men to cut meat in pieces and to eat it. Windeschman has rightly compared this with Genesis ix. 3.
- [61] "Bundehesh," xv.
- [62] "Chaldean Account of Genesis," p. 83. The original text is given in Friedrich Delitzsch's "Assyrische Losestücke," 2nd edition, p. 91.
- [63] See E. Ledrain: "Histoire d'Israel," vol. i. p. 416.
- [64] See Rawlinson: "The Five Great Monarchies of the Ancient World," 2nd edition, vol. ii. p.

- [65] Botta: "Monuments of Nineveh," vol. ii. p. 150.
- [66] This image was also employed for the same purpose in the time of the Sassanides, and we can trace the history of the curious vicissitudes which led to its being imitated as a mode of ornamentation, having no particular significance, first among the Arabs, and next in some western edifices of the Roman Period.
- [67] Layard: "Cultus of Mithra," xvi. No. 4. G. Smith: "Chaldean Account of Genesis." The cylinder is of Babylonish workmanship and great antiquity.
- [68] This head-dress, frequently represented on monuments, is spoken of as characteristic of the Chaldeans in Ezekiel xxiii. 15.
- [69] Panofka inclines to give to this couple the names of Deucalion and Pyrrha, the son of Prometheus and daughter of Pandora, progenitors of a postdiluvian human race. We see no objection to this, provided, however, that it be admitted that the monument shows the introduction of a legend similar to that of Adam and Havah, attached to those personages. As the probable theatre of such an introduction, one might be led to think of Iconia in Asia Minor, when the formation of men by Prometheus was, by local tradition, assigned to a period immediately succeeding the deluge of Deucalion, and told with details singularly akin to those given in the Bible.
- [70] Cesnola: "Cyprus: its Ancient Cities, Tombs, and Temples," p. 101.
- [71] We must limit ourselves, must not be carried away into exaggerated developments. We will not, therefore, carry these analogies further. But they might be pursued in a direction that shall be briefly pointed at. It is difficult to avoid seeing a similarity between the Tree of Paradise of Asiatic Cosmogonies, and the tree of golden fruit in the garden of the Hesperides, guarded by the serpents which figured monuments invariably represent coiled about its trunk. In that myth of incontestably Phœnician origin, according to which Hercules slays the guardian serpent and secures the golden apples, we have the revenge of the luminous or solar god reconquering the tree of life from a dark, jealous, and inimical power, personified by the serpent, which had taken possession of it in the world's early days. In the same way we have in the Indian myth the gods regaining the ambrosia from the Asouras or demons that had stolen it. We may also observe that Hercules, the conqueror of the dragon of the Hesperides, is also the liberator of Prometheus, him who first, despite the divine prohibition, gathered fire, the fruit of the celestial and cosmic tree.
- [72] "Die Herabkunft des Feuers und die Göttertranks." Berlin, 1859.
- [73] On the existence among the Babylonians of the idea of the cosmic tree, see C. W. Mansell, *Gazette Archéologique*, 1878, p. 138.
- Among the myths borrowed by the philosopher Pherecides, of Syros, from the Phœnician mysteries, was that of the winged-oak (ὀπιπτερος ὄρυς), over which Zeus had spread a magnificent veil representing the constellations, the earth and ocean. Here we manifestly have the cosmic tree again.
- [74] Mr. Fergusson's work, "Tree and Serpent Worship" (London, 1868), is not quite free from this defect, the learned author having displayed more erudition and ingenuity than critical faculty.
- [75] "Bundêhesh," xxxi. The serpent's form is also that given to different secondary personifications of the evil principle, different mythological beings created by Angromainyus to ravage the earth, and war with the good, and with the true faith—such as Azhi-Dahâka (the serpent that bites), conquered by Thraetaina, and the dragon Cruvara, slain by the hero Kereçaça.
- [76] See CONTEMPORARY REVIEW, December, 1876.
- [77] "Histoire de la Civilisation hellénique," 399, 400.

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