Title: A Hundred Years Hence: The Expectations of an Optimist

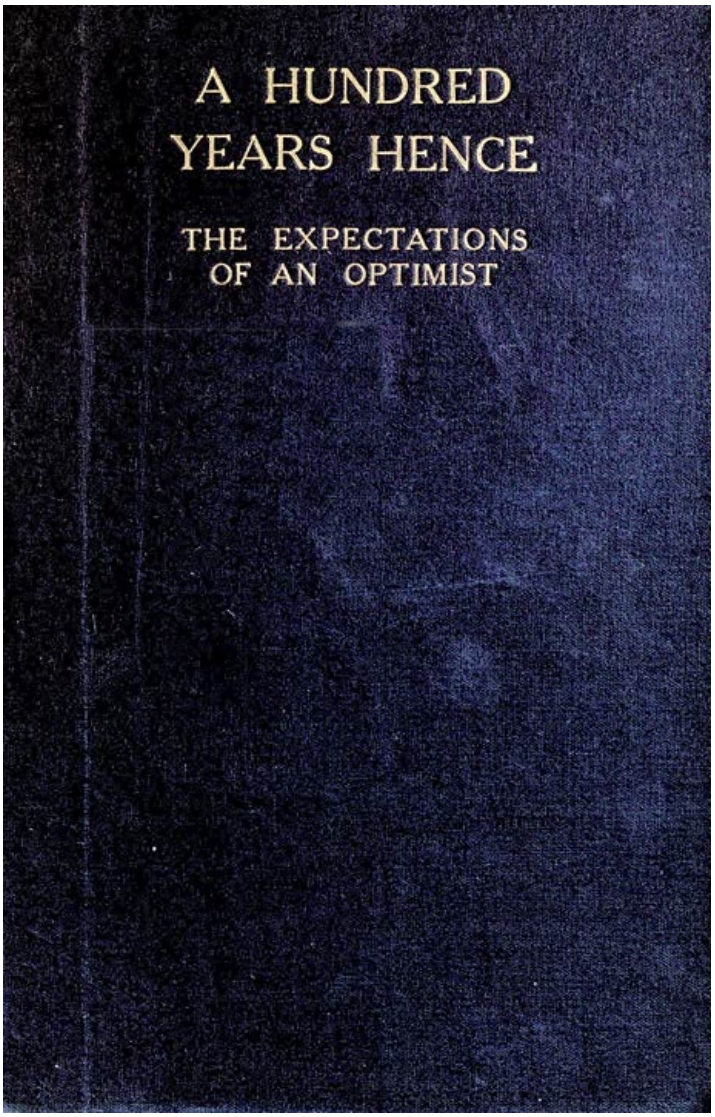
Author: T. Baron Russell

Release date: April 9, 2015 [EBook #48674]

Language: English

Credits: Produced by Jeroen Hellingman and the Online Distributed Proofreading Team at http://www.pgdp.net/ for Project Gutenberg (This file was produced from images generously made available by The Internet Archive/American Libraries.)

[Contents]



A HUNDRED YEARS HENCE

The Expectations of an Optimist

By

T. BARON RUSSELL

Author of

"A Guardian of the Poor," "The Mandate," etc.

LONDON

T. Fisher Unwin

Paternoster Square

1905

[Contents]

A HUNDRED YEARS HENCE

The Expectations of an Optimist

By

T. BARON RUSSELL

Author of “A Guardian of the Poor,” “The Mandate,” etc.

LONDON
T. Fisher Unwin
Paternoster Square
1905

There is a history in all men's lives,
Figuring the nature of the times deceased;
The which observed, a man may prophesy,
With a near aim, of the main chance of things
As yet not come to life; which in their seeds
And weak beginnings lie intreasured.

SHAKESPEARE, 2 *Henry IV.*, III. i.

They pass through whirl-pools, and deep woes do shun,
Who the event weigh, 'ere the action's done.

WEBSTER, *Duchess of Malfi*, II. 4.

PREFACE

The following was at first intended to be no more than an attempt to foresee the probable trend of mechanical invention and scientific discovery during the present century. But as the work took shape it was seen to involve a certain amount of what may be called moral conjecture, since the material progress of the new age could not very well be imagined without taking into account its mental characteristics. In these expectations of an optimist, a great ethical improvement of the civilised human race has been anticipated, and a rate of progress foreseen which perhaps no previous writers have looked for. Both in regard to moral development and material progress, it has been the aim of the author to predict nothing that the tendencies of existing movement do not justify us in expecting.

An attempt of this kind is exposed to facile criticism. It will be easy for objectors to signalise this or that expected invention as beyond scientific possibility, that or the other moral reform as fit only for Utopia. But those who will consent to perpend the enormous and utterly unforeseen advance of the nineteenth century will recognise the danger of limiting their anticipations concerning the possibilities of the twenty-first. A fanciful description in (I think) Addison's *Spectator* of an invention by which the movements of an indicator on a lettered dial were imagined to be reproduced on a similar dial at a distance, and employed as a means of communication, must have seemed wholly chimerical to its readers; and even as recently as fifty years ago, anyone who predicted the telephone would have been laughed at. When the principle of the accumulator was already discovered a very competent practical electrician told the writer that he need not worry himself much about the idea: there was not the least likelihood that electricity could ever be "bottled up in cisterns"! On the whole there is more likelihood of error in timidity than in boldness when we attempt to

foresee what will be attained after the increasingly rapid movement of scientific progress during this twentieth century shall have gathered full force.

For the rest, criticism of this sort is disarmed, because the reader has been in any case invited to enter a realm of more or less pure imagination. No one can exactly know with what births, monstrous or beautiful, the future may teem. Admitting a certain point of view—that of almost unrestrained optimism—the predictions here offered will, it is believed, be found to be along the line of existing progress.

BEAUFORT HOUSE,
BRENTFORD.

[vii]

[Contents]

CONTENTS

[1]

[Contents]

A HUNDRED YEARS HENCE

CHAPTER I

THE RATE OF PROGRESS

To anyone who has considered at all attentively the enormous material advances of the nineteenth century, a much more remarkable thing than any invention or improvement which that century brought forth must be the speed of human progression during the hundred years between 1800 and 1900, and the extraordinary acceleration of that speed which began to establish itself about the year 1880. But indeed, during the whole century, our forward movement was steadily gaining impetus. The difference between the state of the world in 1700 and its state in 1800 is insignificant compared with the differences established between the latter date and the opening of the twentieth century. But it is hardly less insignificant than the progress of the decade 1800–1810 compared with that of the decade 1890–1900. We are, in fact, picking up speed at an enormous rate. The beginning of the twenty-first century will exhibit differences, when compared with our own day, which even the boldest imagination can hardly need to be restrained in conjecturing. The latter part of the nineteenth century was the age of electricity, just as the middle part was the age of steam. The first part of the twentieth century is evidently going to be the age of wave manipulation, of which wireless telegraphy, as we know it, is but the first infantile stirring.

[2]

What the developments promised (and they are already quite easily presageable) by wireless telegraphy will give us, and what they will be superseded by, can only be very dimly imagined; what their effects will be upon the human race in itself no one has yet ventured even to hint at. Few things are more remarkable in the numerous and highly-varied experiments of vaticinatory fiction and more serious efforts of prognostication than the utter absence of any adequate attempt to forecast the future of the race itself. Social and political changes, the

enormous differences which are certain to be effected in the manner of human life, have been from time to time more or less boldly imagined, and a couple of volumes of very able forecasts of the future have recently been published by a writer of singular vision and highly-trained scientific imagination. But it does not hitherto appear to have been at all fully perceived that the moral constitution of [3] man himself is quite certain to be profoundly modified, not alone by the influence of a material environment which will have been changed as the environment of man has never been changed since the first inhabitation of this planet, but also by the steady development of inward changes which have already begun to manifest themselves. Since the year 1800 ideas which, so far as we have any means of knowing, had been regarded as irrefragable ever since man first began to think and to set his thoughts upon record, have been utterly shattered. One has only to compare the opinions of even average thinkers of our own day on such subjects as marriage, the status of woman, and the education of children, with the opinions, practically current without material change since the dawn of history, in 1800, to perceive the truth of this statement; and the change of attitude on the part of civilised people, outside the Roman Catholic Church (and, to some extent, even within it), towards religion is not less remarkable. An enlightened man of the present day is so radically different in all his ideas from a similar individual of the early nineteenth century, that it is hardly possible for a modern student to write with any intelligence on the deeper significance of events and life prior to 1800. Grotesquely inadequate as most historical novels of our own day are, they are perhaps hardly less inadequate than our own [4] understanding of the novels of Sir Walter Scott. Scott could probably write of crusaders and the age of chivalry without committing serious blunders of sentiment. What the world thought in the age of Saladin the world practically thought in the age of Napoleon. But the irresistible infection of modern ideas has made it hardly possible for us to enter with any fulness into the sentiments of Scott; and the sentiments put into the mouth, and the thoughts into the mind, of the hero of any historical novel of our own day would be utterly incomprehensible to that hero, could he by some miracle be resuscitated, and could we translate them literally to him. We unconsciously endow the personages of our historical fiction with ideas for which they had not even the names.

And the development of the human mind proceeds apace. It will be even more difficult for the ordinary cultured man of a hundred years hence to form any full conception of our ideas than it is for us to appraise the mental attitude of the men of the eighteenth century. To take a single example: the humanest warrior of the Napoleonic wars appears a monster of cruelty if compared with the sternest of modern generals. Napoleon devastated provinces without a word of censure from competent critics of the art of war. A howl of execration went up, [5] not from continental Europe alone, at the measures—seriously embarrassing to our military operations, and enormously helpful to our enemy—which the British generals took in order to diminish the sufferings of the non-combatant population of the Transvaal; camps of refuge, it appears, did not sufficiently excel in comfort the hospitals of our own wounded! And there is a section of the Press in this country which still occasionally remembers, to complain of it, the fact that our generals found it necessary, for military reasons, to burn farm-houses. I should not like to attempt the conjecture, what Wellington would have said in answer to such a complaint, or what he would have done to a self-appointed emissary who visited his camps for the purpose of criticising his action! It would have been no more impossible for him to foresee the day of such things, however, than it is for us to predict the moral sense of the year 2000. The fact is that we have greatly deteriorated in war, although, or rather because, we have even more greatly improved in morals and feeling. William Morris conceived of man in the coming time as a sort of recreated mediæval. Mr Wells conceives him as practically a nineteenth-century man, with his ideas merely adjusted to new material conditions. Bellamy described him in terms of a being inconceivable by any sort of reason. No one appears to have seen that his moral [6] nature will have been not merely revolutionised, but recreated, just as our own morality has been recreated during the last hundred years, not so much by the influence of material environment or the march of invention, as by the regeneration of human conscience.

In no way will the acceleration of the speed of progress be more apparent than in the thoughts and emotions of men. But to say this is not to belittle the progress which science and invention have in store for the new age. In applying a sort of imaginative telescope to the mental eye it will be necessary to keep constantly in view the utter inconceivableness of modern achievement by the civilised world of the past. When electricity was no more than a sort of scientific plaything—when notions of its possible uses were (as in Davy’s time) far less substantially imagined than, for instance, the possible uses of radium are to-day, even scientific thinkers, endowed with what Huxley so luminously applauded as scientific imagination, had no rudiment of the materials for conceiving such

inventions as the electric telegraph—far less the possibilities of transmitted and picked-up wave energy. And here, at the beginning of wireless telegraphy, we are no less in the dark as to what will develop from it and what will supersede it. The nineteenth century progressed, almost from first to last, on the strength of the discovery of how to utilise the stored energy of coal, whether directly in the [7] steam engine or indirectly in the dynamo-electric machine and the electric motor. With the end of the coal age already well in view, we can only conjecture what the sources of mechanical power will be a hundred years hence. Before we have quite exhausted our coal measures and begun to draw more liberally on our stores of petroleum, we shall no doubt have abandoned altogether so wasteful a contrivance as the steam engine. There is a clumsiness almost barbarous in the roundabout employment of coal to produce heat, the steam engine to utilise only a miserable fraction of the potential energy even of the part of the coal which we do not fatuously allow to escape as smoke; of the dynamo to use up a part of the motion yielded by the steam engine in producing electricity (while a small but recognisable portion of that motion is converted wastefully back again into heat), and of the electro-motor to re-convert the electricity into motion, heat, light and chemical energy, according to our requirements. It cannot be many years before we learn to use coal far more economically than we do nowadays, abolishing the furnace and the steam engine, and obtaining electricity directly from coal itself by some sort of electro-chemical decomposition. But even so, our coal will not last much longer. The speed of our progress will exhaust it much sooner than most people imagine, and probably in another twenty-five years the [8] end of our petroleum will also begin to be looked forward to with apprehension.

About this period, or perhaps immediately after, progress will have been accelerated to an enormous degree by the invention of some new method of decomposing water. The economical analysis of water into its two component gases, whose chemical affinity and antipodal electrical attractions are already utilised to some extent in such appliances as the oxy-hydrogen blowpipe and electrical storage batteries, is a secret capable of extraordinary beneficences to the new age. By burning hydrogen in oxygen we can already produce the greatest heat practically needed in the arts; the electric furnace only superseding this process because it happens to be more manageable. But when we want oxygen and hydrogen, we do not, in practice, now obtain them from water: we only combine them as water in the act of utilisation. The rational line of progress is obviously to seek means of directly decomposing water. When we can do this compendiously and economically we shall have an inexhaustible supply of energy—for water thus used is not destroyed as water, as coal is destroyed, *quâ* coal, when we utilise its stored energy. The very act of utilising the gases recombines them: and we can use them thus for the production of [9] almost every kind of energy that man at present needs. We can use them for heat by burning them together. We can use them for light by burning them in the presence of any substance capable of being made incandescent. We shall be able to use them to generate electricity by some sort of contrivance akin to the accumulator of the present day (a highly rudimentary invention); and it would be even now a very simple matter to utilise their explosive recombination for the direct production of power as motion. Utilised apart, the constituent gases of water have many other uses and possible uses. Hydrogen, under suitable treatment, yields the greatest obtainable cold, as oxygen and hydrogen together yield the greatest heat. If our flying-machines need a sort of ballast to reinforce their mechanical lifting apparatus, hydrogen is the best possible assistant. And the probable uses of oxygen are yet more numerous. So long as we still burn anything at all except a mixture of oxygen and hydrogen—and ultimately we shall have nothing else left to burn—oxygen is capable of multiplying the efficiency of all combustion. One of the greatest problems of our own day is the disposal of waste products of all sorts—the sources of inconvenience, disease and dirt. Oxygen, if readily and copiously obtainable, is capable of destroying [10] them all. Indeed, it seems likely that medicine, the least progressive of the sciences to-day, will find in oxygen the great propulsive force of its forward movement. In considerably less than a hundred years hence such makeshifts as drugging, and the fighting of one disease by the instalment in the organism of another, will certainly have gone by the board. Antisepsis and Asepsis (the latter almost infinitely the greatest invention in the history of therapeutics) will have pushed their way from surgery into medicine. There are numerous diseases which can be not merely cured, but ultimately abolished when we have once discovered how to use oxygen adequately. The readjustment of the conditions of life determined by the removal from the civilised world of the greater number of diseases, and perhaps of all diseases except those arising out of wilful misconduct (as improper diet) and even by the elimination of most of the evils of hurry and overwork (for what are medically and chemically known as fatigue products can almost certainly be eliminated from the system by the proper use, yet to be discovered, of oxygen) must inevitably have an enormous influence not merely upon the physical life of man, but also, and even more, upon his mental constitution. The rate of progress will thus in yet another way be vastly

accelerated. [11]

Most likely the universal source of power, then, before the middle of the century, will be the recomposition of water—in other words, we shall get all the power we want by splitting up water into oxygen and hydrogen, and then allowing those gases to recombine, thereby returning to us the energy we have employed in the analysis. How we shall employ this power is largely for the future to decide, and certainly in the earlier future we shall employ it in the generation of etheric waves of various kinds. The world of science is visibly on the threshold of new and revolutionary discoveries on the nature and composition of matter, and whither these discoveries will lead us it is not usefully possible to conjecture. But certainly, after the usual incubation period of a scientific discovery—when it is merely a sort of wonderful toy, as argon and radium are at present—there will come the practical men, suckled at the large and noble breasts of disinterested, unremunerative truth, and ready to turn that nutriment into world-moving material usefulness: so, again, the rate of progress will receive a vast and valuable acceleration. Electricity, whose gift to the world has been so great, will probably not, until after several decades, approach the limits of its realm, and so long as electricity remains a considerable element in the utilisation of those stores of dissipating energy by which the planet lives, it is possible to foresee [12] something of what will become of man during the next age.

We have here the limits of such an inquiry as the present. Placing the end of the age of electricity at provisionally about a hundred years hence (but it is quite conceivable that the rate of progress may overtake it earlier and shut the door on conjecture) it is possible to forecast, not indeed with certainty, but with a measure of imaginative probability, what will happen as the resources of electricity are developed and the other material amenities of the world are worked along the line of natural progress. So far as the light of analogy can point the way the reader is invited on a sort of conjectural journey. Of the developments of the moral ideas of man likely to be determined, not so much by the coming change in his material environment, as by the evolution of inner forces already at work, I propose to say something at the end of the book. In the meantime, the probable material changes in the next hundred years (or less, according to the rate of our progress) in various departments of life will be the subject of some intermediate conjectures. [13]

[Contents]

CHAPTER II

HOUSING, TRAVEL AND POPULATION QUESTIONS

When every allowance has been made for the material changes which the progress of this century threatens, it is easy to see that certain present-day problems will continue to trouble our successors. Some things which perplex ourselves will, I think, work out their own remedy. Others will remain the subject of solutions not difficult to be imagined in advance.

One chief difficulty which will infallibly confront the immediate future, and even the future that is more remote, arises out of the simple fact that the race of man tends to increase numerically at a speed greater than our devices for its accommodation can quite conveniently cope with. The population of the world not only increases, but increases at compound interest. Nor is this all. Improved sanitation, better habits of life, and the progress of medicine, prolong lives that in the conditions of last century would have been shortened, and the rate of increase is thus further accelerated, as individuals who in different conditions [14] would have died, live on, perhaps reproducing their species, and thus intensifying the population problem. Against these influences may be set the effect of the restrictions imposed by some civilised peoples on the birth rate, which Mr Roosevelt calls “race suicide.” These practices, just now increasingly prevalent, retard the rate of increase, but do not at present stop our increase: they alleviate, but do not cure the difficulty of over-population. Artificial physiological checks on population, if I am right in certain other conjectures to be presently developed, will not form part of the permanent morality of the new age, partly because, with more enlightenment, they will be voluntarily abandoned or superseded, and partly because the necessity for them will have disappeared, having worked out its own cure.

But with all this it would be folly to anticipate that the population of the civilised world will not have greatly increased before the end of the period contemplated

by the present inquiry: and this brings us face to face with two very important questions—those of housing and transport. Where shall we live, and how shall we move from place to place—above all, how shall we proceed from home to the scene of work and thence home again every day, in the future? Shall we indeed thus move back and forth at all? [15]

The answer to the last question bifurcates somewhat. In the earlier future of (say) twenty or thirty years hence, probably the greatest tendencies will be towards concentration on the one hand and exceedingly rapid transport on the other. What the ultimate practice will be, it should not be difficult to guess when we see how these tendencies are likely to work themselves out.

During the last twenty-five or thirty years of the nineteenth century the tendency of workers in great cities was more and more towards suburban life, men travelling to and from the cities in increasing numbers, to increasing distances, and at increasing speeds. Even mechanics, even labourers and the other humbler wage-earners (to say nothing of clerks not earning much more, but spending their money in a different manner) nowadays travel considerable distances to their work. But in spite of what is complacently regarded (by railway and tramway directors) as rapid conveyance, there is lately manifest an increasing impatience against the time subtracted from men’s leisure by the two daily journeys, an impatience very naturally increased in the case of manual workers of both sexes by the utter inadequacy of the legislative control imposed upon railway and tramway companies.

Crowded trams and trains, with desperate men and weak women fighting a daily battle for conveyance before all the cheap trips have been made, inflict a [16] shameful degradation upon the class for which Parliament makes illusory provision in railway and tramway Acts. As a consequence of this difficulty, and also because of the early hour at which the companies are allowed to cease carrying working-folk at the workmen’s fare, many men and women are compelled to waste some hours of their scanty leisure every day between the arrival of their trains and the opening of their workshops, a cruelty for which the blame may be pretty equally apportioned to Parliament and the company directors. The result of it is that many of the poor prefer the evil of overcrowding in cities before the greater evil of wasted time and degrading travel. As time goes on, no doubt the monopolists of transportation will be compelled, as their own necessities increase and so bring them under the hand of the legislature, to serve more adequately the necessities of the majority. But even so, and as long as the effective speed of conveyance is limited by the lack of permanent-way space and the necessity for frequent stations, the impatience even now manifested, and manifested chiefly by the class which suffers least from loss of time in travel, will lead to concentration. Taking London as an example, it may be said that the Victorian age was the age of the suburbs. But few people now live in the suburbs of London who can afford to live anywhere else. Either they [17] move right out into the country, seeking a spot on some main line where the greater distance and less-frequent train service is made up for by speedy and uninterrupted journeys; or they come into London and occupy houses or flats within easy reach of their working head-quarters. The suburbs are given over to those who cannot afford either of these expedients, or who, having been brought up there, are retained by a sort of inertia. Ultimately, as the demand for town space becomes intensified, two things will happen. First of all, the restrictions which many cities, ignoring the freedom of New York and Chicago, impose upon the erection of excessively high buildings, will go by the board. The shutting out of sunlight and fresh air will be the subject of compensations to be presently explained, and thirty, forty, fifty or a hundred-storey houses, and houses which perhaps burrow to some distance underground, will, by virtue of the same compensations, house a vast, concentrated population impatient of daily travel. As the demand for homes increases, and even the high buildings cannot cope with it, the cities will push their way outwards, repopulating the rebuilt suburbs. This kind of thing will have a tendency to correct itself. Rents will be high in proportion to position near the centre. But a limit of toleration will be reached, and as certain improvements will have been effected in transport, there will [18] ultimately be a reaction, and people will again go right out to the country, as long as there is any country left.

Before discussing these improvements, however, it will be convenient to examine the conveniences, social and sanitary, of the homes of the new age. The greatest convenience of all, no doubt, will be the modification and partial elimination of the domestic servant. There is every reason to believe that the great difficulties of the servant question as at present experienced will solve themselves, forming in part an instance of the moral changes, accompanying material invention but only partly resulting from it, which the new age is certain to experience. It is usual to lay the blame of the unsatisfactory character and atrocious inefficiency of the domestic servants of our own day on the institution of free education.

They are much more due to the absence of any education worthy of the name, and to the imperfect civilisation of modern houses. Thirty-five years or so are but an instant in the life of an institution so overwhelmingly more important in its possibilities than any other subject of legislation as State-compelled education of the people. No one appears to have recognised that character-making, which Herbert Spencer called the most important object which can engage the [19] attention of the legislator, is the only true object of education, free or otherwise. When politicians have talked of the necessity of national education, the argument they have used was that Germans are better chemists than we are. When they praised the usefulness of modern languages it was in terms of commercial utility. “Modern languages, in fact” (a recent critic remarked), “make a good bagman.” It is inept to despair of free education because free education has produced no very satisfactory results while conceived of as a process of shoving undesired knowledge into the children of the poor. Looking, as everyone not hidebound by pessimism must look, for a great enlightenment of the law-giving class when the system of party politics, already beginning to show signs of decay, has ceased to hold all legislation in its blighting hand, we have every reason to expect that the true uses of education will be perceived and attained long before the end of the period contemplated when we speak of the new age. And then, one very great factor in the servant question will have been satisfactorily solved, even if other conditions have not conducted us nearly all the way to the solution beforehand.

For, while making every allowance for the evil effects of education, wrongly conceived and improperly administered, on the character of women destined to become servants, it must be allowed that much of what we call the servant [20] difficulty could be cured now, and will unquestionably be cured before long, by inventions capable of abolishing the grievances which lead to it. These grievances are real and remediable. I do not refer to the confinement, restraint and gross lack of consideration on the part of employers which lead young women of the class from which servants are drawn to prefer labour in factories and elsewhere, in conditions far less comfortable, before domestic service; but to our utter lack of ingenuity in removing the irksomeness and degradation of much domestic labour. Some coming inventions calculated to improve the lot of Mary Jane will now be described.

In the first place (as Mr H. G. Wells has pointed out, without apparently being aware that buildings already exist in which some of his ideas have been anticipated), modern rooms, equally with those of all time, seem to have been constructed so as to make it as difficult as possible to keep them clean. Square corners and rectangular junctions of wall and floor, wall and ceiling, will certainly before long be replaced everywhere by curves. But the work of house cleaning will be rendered easy and unlaborious by another invention, already indeed in existence on a large scale, but eventually capable of being rendered portable. I mean a contrivance for applying a vacuum to any desired spot. There [21] is a very ingenious but rather noisy engine already in use for pumping the dust out of carpets, curtains and furniture. In the houses of the future handy contrivances of various shapes, all independent of any engine, will be found, furnished with elastic nozzles on the outside and with some sort of appliance capable of instantly exhausting the air within. Such a utensil wheeled over the floor will remove instantly every particle of dust from the surface and below the surface of the carpet, at the same time picking up any such *débris* as scraps of paper, pins, and other *decidua* of the previous day. A similar instrument, differently shaped, will clean the curtains, supposing curtains to be still in use at the time, and will dust the chairs and tables—though there will not be anything like so much dust as there is now, nearly all kinds of combustion being abolished. The kitchen fire will of course be an electric furnace: “o’ my word we’ll not carry coals.” Lighting will all be electric, and no doubt wireless. The abolition of horse traffic in cities, and the use of the vacuum apparatus which will be continuously at work in all streets, keeping them dry and free from mud, will practically remove the necessity for boot brushing, even supposing that we shall still wear boots: every man and woman in dressing will pass a vacuum instrument over his and her clothes and get rid of even the little dust existing— [22] for we shall be more and more intolerant of dirt in any form, having by that time fully realised how dangerous dirt is. The new age will be a clean age. A lady of the year 2000 who could be miraculously transported back to London at the present moment would probably faint (they will not have ceased fainting) at the intolerable disgustingness of what is, I suppose, now one of the cleanest cities in the world, even if the cruelty of employing horses for traction, and the frightful recklessness of allowing them to soil the streets in which people walk, did not overpower her susceptibilities in another way.

Cooking will perhaps not be done at all on any large scale at home, in flat-homes at all events; and in any case, for reasons which will hereafter become apparent, cooking will be a much less disgusting process than it is to-day. In no case will

the domestic servant of a hundred years hence be called upon to stand over a roaring fire, laid by herself, and to be cleaned up by herself when done with, in order to cook the family dinner. Every measure of heat—controllable in gradations of ten degrees or so—will be furnished in electrically-fitted receptacles, with or without water jackets or steam jackets: and unquestionably all cooking will be done in hermetically-closed vessels. We shall not much longer [23] do most of our cooking by such a wasteful and unwholesome method as boiling, whereby the important soluble salts of nearly all food are callously thrown away. As, for reasons to be developed hereafter, it is quite certain that animal food will have been wholly abandoned before the end of this century, the *débris* of the kitchen will be much more manageable than at present, and the kitchen sink will cease to be, during a great part of the day, a place of unapproachable loathsomeness. On the other hand, its conveniences will have been greatly increased. It is difficult to understand how the old-world fashion of (for instance) "washing up" plates and dishes can have endured so long. Of course, in the new age, these utensils will be simply dropped one by one into an automatic receptacle; swilled clean by water delivered with force and charged with nascent oxygen; dried by electric heat; and polished by electric force; being finally oxygen-bathed as a superfluous act of sanitary cleanliness before being sent to table again. And all that has come off the plates will drop through the scullery floor into the destructor beneath to be oxygenated and made away with.

Here we have most of the distasteful elements of domestic service got rid of. Naturally lifts of various kinds, driven by the same force (whatever it is) which lights and warms the house, will be everywhere in evidence. The plan of [24] attaining the upper part of a small house by climbing, on every occasion, a sort of wooden hill, covered with carpet of questionable cleanliness, will of course have been abandoned: it is doubtful whether staircases will be built at all after the next two or three decades. And it is likely that the more refined sentiment of the new age will recoil before the spectacle of menial service at the table. Not because they will despise, but because they will respect, their domestic assistants, hostesses will dislike to have their guests waited upon in a servile manner during meals by plush-breeched flunkeys of the male, or neat-handed Phyllises of the female, sex. Well-arranged houses will have the kitchen on a level with the dining-room, and the dividing wall will be so contrived that a table, ready laid at each course, can be made to slide through it into the presence of the seated guests. An immense amount of running to and fro between kitchen and dining-room, and of lifting food and table-ware into and out of elevators, will thus be obviated, to the vast gastronomic improvement of the meal and the salvation of servants' time.

Naturally the bedrooms of the new age will have many amenities lacking to our own. It is not too much to anticipate that we shall have learned enough of plumbing to be able to connect baths, wash-basins and other necessary fittings [25] with the drains without poisoning ourselves, and the inconvenient modern "wash-stand" with its unreticent adjuncts will decently disappear. It cannot be very long—probably it will only be a few years—before some kind of reasonable control is exercised over the technical education of plumbers.[1]

Thus the bedroom of the new age will be a much more convenient and satisfactory apartment than the one we slept in last night, and another irksome and unelevating part of the domestic work of our servants will be eliminated. But the sleeping-apartments, and indeed all apartments in city homes, will contain yet another very valuable and necessary article of furniture—the oxygenator. Nearly all the unhealthiness and the pinched, weary greyness of town-dwellers to-day could be cured by fresh air. Everyone is familiar with the improvement which can be effected in the health and appearance of a city family by even a short visit to the seaside or the country—an improvement which it happens to be fashionable just now to attribute, in the former case, to the presence of ozone in [26] the sea air. The fact that holiday-makers are able to endure the smell of slowly-decaying seaweed with a dash of putrescent fish about it, which is called "sea-air," without injury, and even to pick up health in the presence of it, is more due to the absence of carbon dioxide and other deleterious gases of the towns than to anything else. The beneficent effects of country air are practically all due to the power possessed by green vegetation of superoxygenating the surrounding air. The atmosphere of cities, or at all events of city homes, will presently be freed from the products of combustion and respiration, and endowed with a slightly-increased proportion of oxygen, by artificial means. And especially in bedrooms, rendered to-day stuffy and unhealthy by the idiotic fear of night air which an effete tradition has handed down to us, will this reform be in evidence. Prudent people to-day insist on large bedroom windows—preferably of the French-door pattern—and keep them wide open all night. But this is attended by inconveniences in cold and wet weather; and while our grandchildren will still keep their windows open all night in all weathers, they will not be content with this alone. There will be a chemical apparatus hidden away in some corner, or

built into the wall, which will absorb carbon dioxide and at the same time slowly give off a certain amount of oxygen—just enough to raise the oxygenation of the [27] air to the standard of the best country places. And similar appliances will be at work in the streets of our cities, so that town air will be just as wholesome, just as tonic and invigorating, as country air. If the theory that the presence of ozone (that is, allotropic oxygen) in the sea air is beneficent stand the test of time, no doubt ozonators will form part of these appliances: but in any case, as the high buildings of the new age will keep out the sunlight, electric light, carrying all the ray-activity of sunlight, and just as capable of fostering life and vegetation, will serve the streets. Thus, so far as hygiene goes, town life will be on a par with country life: but many people will prefer the country, and means will have to be provided to render homes in the country compatible with work in the cities. This brings us to the question of transport.

I do not think that people will, within the next hundred years at all events, travel to and from work in flying-machines. But no doubt the system of railway transport will be revolutionised. What makes suburban travel so slow is, not so much lack of speed on the part of the trains, as the necessity for frequent stoppage. You cannot satisfactorily run a train at sixty miles an hour and stop it every minute or so: otherwise sixty miles an hour would be quite fast enough, for [28] some decades at least, to satisfy all requirements of suburban traffic, though it would be, and indeed is, ridiculously inadequate for long-distance travelling. The expense of increased permanent-way hampers railway management, and as there is no possibility of getting more land to increase the number of available tracks, some method will have to be devised for running one train over the top of another—perhaps to the height of several storeys, not necessarily provided with supporting rails: for we may very conceivably have discovered means by which vehicles can be propelled above the ground in some kind of guide-ways, doing away with the great loss of power caused by wheel friction; that is to say, the guides will direct, but not support, the carriages. The clumsy device of locomotive engines will have been dispensed with. Whatever power is employed to drive the trains of the next century will certainly be conveyed to them from central power-houses.

But, as the reader has been already reminded, it is the stoppages which are so wasteful of time on a suburban railway: and they are also wasteful of force. Now in all respects the new age will be economical. One thing that will have to be perfected is the art of getting up speed. Look, as you go home to-night, at the way your train gathers speed on leaving a station. Observe what a long time it is [29] before it can attain its full velocity. A large part of the total time you require in order to reach the suburbs is consumed in this manner. A hundred years hence trains will almost jump to full speed, somewhat as a motor-car jumps to-day. In collecting passengers at suburban stations, the train, a hundred years hence, will perhaps not stop at all. It will only slacken speed a little; but the platform will begin to move as the train approaches, and will run along beside it, at the same speed as the train itself, so that passengers can get in and out as if the train were standing still. When all are aboard, the doors will be closed all together by the guard, and the platform will reverse its motion, and return to its original position ready for the next train.

With trains travelling at quite 200 miles an hour—and certainly nothing less will satisfy the remoter suburbanites of next century—frightful accidents would occur if precautions were not taken. The moment two trains are in the same section of line they will be automatically cut off from the source of power, and their brakes will at the same time bring them to a standstill. A passenger who put his head out of the window of a train travelling at this speed would be blinded and suffocated; so the windows will be glazed, the oxygenators and [30] carbon-dioxide absorbers in each carriage keeping the air sweet, and other suitable appliances adjusting its temperature. There will be no such thing as level crossings; wherever the road crosses the line there will be bridges, provided with an endless moving track (like the automatic staircase at the Crystal Palace), to carry passengers and vehicles across. Of course horses will long since have vanished from the land, except as instruments of the pleasure of a few cranks who affect the manners of that effete period, the year 1900.

And the omnipresence of high-speed vehicles will in itself have eliminated much danger of accident. It is not to be supposed that the unresting march of mechanical improvement will have failed to have its effect on the people. Man himself will have progressed. He will be cleverer in avoiding accidents. Cities will be provided with moving street-ways, always in action at two or more speeds; and we shall have learned to hop on and off the lowest speed from the stationary pavement, and from the lower speeds to the higher, without danger. When streets cross, one rolling roadway will rise in a curve over the other. There will be no vehicular traffic at all in cities of any size; all the transportation will be done by the roads’ own motion. In smaller towns, and for getting from one town

to another, automatic motor-cars will exist, coin-worked. A man who wishes to travel will step into a motor-car, drop into a slot-machine the coin which represents the hire of the car for the distance he wants to travel, and assume control. Here again the progress of man will come into play. Everyone will know how to drive a motor-car safely. If you doubt it, consider for a moment the position of a man of 1800 suddenly transported into a street of modern London. He would never be able to cross it; the rush of omnibuses, motors and bicycles would confuse and frighten him. Imagine the same man trying to use the underground railways of to-day, or to get up to town from a busy suburb in the morning. He would either be killed out of hand or left behind altogether from sheer inability to enter the train. [31]

We may safely suppose that the ocean ships of a hundred years hence will be driven by energy of some kind transmitted from the shores on either side. It is absolutely unquestionable that no marine engine in the least resembling what we know to-day can meet the requirements of the new age. The expense of driving a steamship increases in such a ratio to its size and speed that the economic limits of steam propulsion are foreseen. Probably the ships of A.D. 2000 will differ entirely in appearance from those we know. Just as road friction is the bugbear of the railway engineer, so water-resistance is the bugbear of the marine engineer. The ships of a hundred years hence will not lie in the water. They will tower above the surface, merely skimming it with their keels, and the only engines they will carry will be those which receive and utilise the energy transmitted to them from the power-houses ashore—perhaps worked by the force of the very tides of the conquered ocean itself. [32]

The housing problem is so intimately and visibly connected in our minds with the growth of population that the more vital entanglement of the latter with the food question is hardly perceptible except to economic experts. The ordinary newspaper reader is not in a position to trace the intimate significance of prices; indeed, he often regards it as rather a good thing that wheat should fetch a good price per quarter, forgetting that low prices for commodities mean increased purchasing power for money, and a better standard of life for the people. When such elementary implications as this are overlooked, it is hardly remarkable that the more obscure connection of population with prices is never thought of. Yet it is obvious that unless the sources of supply increase more rapidly than the consuming population, prices must rise—in other words, the purchasing power of money must diminish. Wages, to some extent, will no doubt rise also, but as competition seriously affects the markets for manufactured goods and machinery, and the increase of population not only tends to raise prices of commodities, but also restricts the rise of wages, relief will have to be found in economies of various sorts. The standard of comfort in working families must improve considerably; partly because the demand for improvement, taking the shape of industrial combination and trade-unionism developed to a high degree, will be more and more clamorous; partly because of public feeling. What is currently called the growth of sentimentalism in modern life is really the development of modern conscience. No doubt the abolition of judicial torture was at one time regarded as a mark of absurd sentimentality; and the opinion has already been expressed that a vast amelioration of public morality is in store for the new age. A great element in the conflict between comfort on the one hand and competition on the other will be economy of means. That is why the new age will, among other things, be an age of economy. [33]

In the matter of food, chiefly, a great saving can be effected. Nothing is more painfully ludicrous—I use the incongruous collocution advisedly—than the spectacle every winter of money being laboriously accumulated for the provision of free meals for the poor, and spent, to a great extent, so wastefully as on meat soups and white bread. The crass ignorance of the poor, who will not touch wholemeal bread, and indeed regard the offer of it as something in the nature of an insult; and who cannot be induced to believe that meat is one of the least satisfactory and most expensive forms of nourishment, is of course responsible in great part for this error. If we would get our nitrogen from pulses, nuts, and use vegetable fats derived from nuts, and bread made from entire wheat-kernels finely ground (instead of being only half ground as in most “brown breads”)[2] our “free dinner” charities would be able to feed at least twice or three times as many people for every pound collected as they do at present. But the proposal would probably excite an outcry and we should hear that the poor were being treated as animals and that we fain would fill their bellies with the husks that the swine do eat. But all kinds of influences will tend to eliminate flesh from the dietary of the new age. “Growing sentimentalism,” already in arms against the use of animals for highly necessary scientific investigations, will, as it develops, be revolted by the idea of killing for food; and the refinement of the future will come to regard the eating of dead bodies as very little better than cannibalism. Moreover, the constantly increasing demand of the new age upon bodily and nervous energies will call for nourishment suited to their supply. This, and the [34] [35]

wastefulness of second-hand food, will banish all flesh from the bill of fare. Fish will be eaten longer than meat. But more than anything else, the need for economy will reform our dinner-tables, and eventually all food will have to be obtained directly from the soil, if we are to have food enough to nourish our overgrown population at all. We shall not be able to afford to waste the ground on pasturage. We must use it to produce cereals, nuts and fruits, which are not only a much more remunerative crop, but will also use up in their assimilation far less nervous and peptic energy—energy which we shall need to make the most of. The cereal foods—products of wheat, barley, maize, and perhaps still (to a certain extent) oats—which will form the staple of our diet, will be partially cooked at the granaries by dry heat; they will need very little treatment at home. Vegetables, cooked, not in the wasteful manner now in vogue, but by conservative methods which will preserve their valuable saline constituents, will have to be prepared in our own kitchens; but pulse in various forms (as pease, lentil flour, etc.) will be supplied to us almost wholly cooked. A cheap, nourishing and delicious dietary will thus be made available. [36]

Finally, the reader will not be unprepared for the opinion that alcohol, as a beverage, must inevitably disappear. Not only because the price of intoxicants is an unproductive expenditure (and we shall have to be more and more thrifty as time goes on) but because the nerves of the new age would never stand them, must all alcoholic beverages be regarded as destined to obsolescence: and the legislative aspect of this question must presently be touched upon. Already a considerable part of the people, in no way influenced by the illogical idea that the abuse of a commodity by one class calls for the abstention from it of another, refrains from alcohol simply because its use inflicts too great a strain on the system. A good many people even now find it necessary to abstain from tea or from coffee for precisely similar reasons; while the highly-organised nervous systems of others find in the latter a stimulant capable of all the advantages of alcohol (and they are many) and not without some of its penalties. I think it quite likely that when alcohol is gone, the nerves of the future may find it necessary to place the sale of tea and of coffee under restrictions similar to those at present inflicted upon the trade in alcohol: and it is quite certain that morphia, cocaine, chloral, perhaps ether, and similar products, will have to be very jealously safeguarded within the next few years. [37]

Differing from many writers, I do not regard this development of the nervous system as a mark of degeneration. On the contrary, it is a part of the great and rapid adaptation which is bound to take place in the constitution of man himself[3] to the rapidly-changing conditions of his environment, his life, and the duties he will have to fulfil. To overlook the certainty of such adaptations is to be blind to all history, and especially to all recent history. The men and women of the new age will differ from ourselves in much the same sort of way as we differ from our great-grandfathers. They will differ more only because the progress of the century which we have lately begun will be so much more rapid and various than those of the century before—itself the period of enormously the greatest changes since the world began to be civilised. [38]

---

1 Drains, it might be supposed, would disappear altogether from the scheme of things in favour of some kind of destructors. For reasons connected with a more enlightened view than we have yet reached of certain aspects of terrestrial economy, however, I think they will, with modifications, still exist. ↑

2 The chief difficulty in utilising the useful integument of wheat disappears when the whole grain is finely milled. ↑

3 It is necessary to say here, as an offset to possible misconstruction, that the word “evolution” has been purposely abstained from. The processes of evolution are far slower than the changes here contemplated. The latter are voluntary and purposeful, involving no constructional alteration in the physical frame of man, but only functional modifications, intentionally inaugurated and pursued. ↑

[Contents]

CHAPTER III

THE MAN OF BUSINESS

Whatever changes may take place in the organisation of society during the present century, we may regard it as certain that the folk who

“Rise up to buy and sell again”

will be always with us. The man of business will possess many conveniences denied to the city man of to-day. It is, for instance, to be supposed that the inordinate defects of even the best telephone systems will be eliminated. When wireless communication of ideas has been perfected, of course the telephone exchange will disappear. Differential “tuning”—the process by which any wireless telephone will be able to be brought, as transmitter, into correspondence with any other wireless telephone, as receiver—will enable every merchant to “call up” every other merchant. Instead of, as at present, looking up his associate’s number in the directory, and getting connected by the clumsy junction of wires at an exchange office, the merchant will look up the tuning-formula, adjust his own telephone to it, and ring a bell, or otherwise [39] employ means for attracting the attention of the man he wants to speak to. As a great proportion of all the business transacted will be done by telephones the frequent occurrence of disputes as to what has or has not been said in a given conversation will have rendered safeguards necessary. Consequently, every telephone will be attached to an instrument, developed from the phonograph, which will record whatever is said at both ends of the line. Precautions will have to be devised against eavesdropping. After communication is established, probably both parties to a conversation will retune their instruments to a fresh pitch, which, in cases requiring special secrecy, could be privately agreed upon beforehand.

The form which the records above suggested will ultimately assume must be a matter of conjecture. It is quite possible that the written word may in all departments of life lose some of its present vital importance. We may imagine, if we choose, that instead of creating records which can be read, we may find it advisable to create records that can be listened to: and some of the apparent inconveniences of this substitution may easily be supposed to be dispensed with. The handiness of a written memorandum is largely a matter of habit. A practised eye can “skim” a long document, and either through the use of black-type [40] headlines, or by pure skill, alight upon exactly the passage required; and if it were necessary, in order to find a given passage, to listen to the whole document being read over by the recording phonograph, no doubt much time would be lost. We shall not be so extremely intolerant of loss of time, perhaps, in the new age, as some people imagine: but in any case, if the speed of the phonograph be imagined as adjustable, it will be perceived that we could then make it gabble parrotwise over the inessential, and let it linger with more deliberation over what we wanted to assure ourselves of. We could even “skip” useless portions—one can do this with phonographs already in use. Probably such aural records may be made capable of acceptance in courts of law, and the maxim *verbum auditum manet* will take the place of a well-known proverb of our day. Very likely business letters may some day take the form of conveniently-shaped tablets, made of some plastic material, and capable of being utilised by means of a talking machine.

Or if these changes seem too chimerical, we may essay the more difficult task of conceiving a means by which the spoken word may be directly translatable into print or typewriting. The waste of time and energy entailed by the present plan of dictating what we want to say to a stenographer or into a phonograph, for subsequent transcription, renders some sort of improvement urgently needful; [41] nor are these wastes the only grievance, as the introduction of a second personality into the operation of recording speech introduces a simultaneous possibility of error, and an outrageous waste of time is caused by the necessity of reading over what one has dictated laboriously to a stenographer or into a phonograph, to make sure that it is correctly transcribed. It is obviously a much more difficult matter to translate speech directly into printed words than to translate it into something which may again produce the sounds of speech. The first step would be the invention of something which would print a phonetic representation of speech—as, for instance, shorthand of the kind invented by Sir Isaac Pitman. Even this requires us to imagine machinery of a kind whose very rudiments do not at present exist. Indeed, we can only conceive such an instrument by the use of the supposition that some entirely new manipulation of sound-waves will be discovered; and if we conceive that, there is no particular reason why we should hesitate before the notion of speech directly translated into print such as we use in everyday life. If we are going to limit the possibilities of the future by the actual achievements of the present, we shall certainly fall short of any adequate notion of what a hundred years’ accelerated progress may [42] be capable of: and I do not see wherein the direct reproduction suggested is any more inconceivable than, for example, telephony, or even photography, must have been to a man of a hundred years ago. The greatest danger attending our attempt to preconceive the amenities of the next century is that we may limit our expectations too narrowly.

On this ground, perhaps, I may be thought too cautious in assuming that the present form of alphabetical writing and printing will survive at all. But there

are two things which seem likely to give it permanence. The first, of course, is literature. If we adopt an entirely new form of writing and printing for general use, we must either set to work to translate all our literature into it, thereby probably losing some formal beauties which the culture of the world will not consent to sacrifice; or we must make up our minds to use (as the Japanese do at present) two kinds of writing concurrently; and the difficulty of overcoming the vast inertia of the human mind (which alone still suffices to exclude from English commerce so obviously convenient an innovation as decimal coinage) will probably negative this. This inertia is the second consideration likely to give permanence to our present form of English alphabetical writing.

However this may be, the convenience of direct wireless telephony will certainly, [43]
when supplemented by records of whatever kind, greatly facilitate commerce. The tedious process of writing a letter, posting it, and awaiting the reply, at present persisted in chiefly because it is so necessary to have some sort of documentary evidence of what has passed, will be largely dispensed with when we can secure an automatic record of what we say. Nearly everything will be done by word of mouth.

The great inconvenience, apart from the absence of record, which attaches to transactions or negotiations by telephone at the present day, is that a telephonic conversation is not nearly so satisfactory as a personal interview face to face. Gesture, attitude, the language of face and eyes, all do so much to elucidate communication in the latter way, that we lose a great deal when we meet an associate at the other end of a telephone wire. Well, the telephone of the new age will remove this drawback, or rather it will be supplemented by something which will do so. This invention, not at all difficult to imagine, I will call provisionally the teleautoscope. It will no doubt have some name equally barbarous. The teleautoscope can be explained in a single sentence. It will be an instrument for seeing by electricity. Whatever is before the transmitting teleautoscope will be visible before the receiving teleautoscope wirelessly *en* [44]
rapport with the former. Thus by telephone, by phonograph, and by teleautoscope, a wireless conversation will combine all the advantages of a personal interview and a written correspondence.

No doubt the post-office system of this country, despite occasional lapses, is as nearly perfect as any human institution, in the present state of society, can be reasonably expected to be. But it is equally certain that in so far as postal communication is required at all in the new age it will have to be vastly improved both as to speed and precision, compared with what we now, sometimes rather thanklessly, enjoy. For instance, that impatient age will certainly not tolerate the inconvenience of having to send out to post its letters and parcels, or the tardiness of having these articles sorted and passed on for delivery only at intervals of half an hour or so. We may take it for granted that every well-equipped business office will be in direct communication, by means of large-calibred pneumatic tubes, with the nearest post-office. And however rapidly and however frequently the trains or airships of the period may travel, the process of making up van loads of mail matter for despatch to remote centres, and redistribution there, is far too clumsy for what commerce will demand a hundred years hence. No doubt the soil of every civilised country will [45]
be permeated by vast networks of pneumatic tubes: and all letters and parcels will be thus distributed at a speed hardly credible to-day.

Already every bank of any importance probably uses calculating machines. It is not likely that the fatiguing and uncertain process of having arithmetical calculations of any sort performed in the brains of clerks will survive the improvements of which these machines are capable. Account books, invoices, and all similar documents will doubtless be written by a convenient and compendious form of combined calculating machine and typewriter, which we may suppose to be called the numeroscriptor. It will, of course, be capable of writing anywhere—on a book or on a loose sheet, on a flat surface or on an irregular one. It will make any kind of calculation required. Even such operations as the weighing and measurement of goods will all be done by automatic machinery,[1] capable of recording without any possibility of error the quantity and values of goods submitted to its operation.

Naturally transport will be the subject of something like a renascence. So far as inland communication goes, the chief difficulties to be overcome already call [46]
loudly for amendment. We cannot for more than a decade or so make do with the present railway tracks, and either (as already hinted) by means of some invention to enable trains to run one above another, or by some entirely new carrying device such as I will now try to suggest, the new age will certainly supersede or supplement the transport of to-day.

The device most likely to be adopted, in the near future at all events, is

something in the nature of elevated *trottoirs roulants* for goods. If we can conceive all the cities of a country to be linked-up by a system of great overways, we have at all events a feasible solution of the difficulty. There could be a double row of tall, massive pillars, between which could run a wide track, always in motion at considerable speed. It need not be a lightning speed. Most of the tardiness of railway transportation does not, in this country at all events, arise from slowness of trains, but from congestion at goods stations, and this in turn is due, partly to insufficiency of rolling stock, but much more to insufficiency of permanent way. The latter evil is very difficult to cope with. But the system of moving ways, providing a rolling stock equal in length to the line itself, will be a great saving. Returning upon itself the endless track will continuously transport merchandise in both directions. Elevators, suitably placed, will give access to it [47]
wherever needed. Probably the motive power will be electrical: and we may confidently anticipate entirely new sources of electricity. It is obviously clumsy to create power in the first instance, convert power into electricity (I use popular language), and then convert electricity back again into power. Much more hopeful than any idea of developing that method would be the conception of new ways of creating and applying motive-power directly. But, almost certainly, electricity, obtained in some new way, will do the work of the world for many generations yet—until, in fact, we devise or discover something more convenient.

It will have been perceived that nearly every improvement and innovation above sketched out involves, and will be indeed designed to effect, great saving of labour. With such economies, and an increased population, there is evidently going to be a difficulty about employment.

Moreover, the great facilities enjoyed by commerce will tend to make commerce extremely powerful. Already great organisers of business begin to evade competition by combining in vast “trusts,” whose tendency is to make the rich richer and the poor poorer. There is a further cause for the aggrandisement of the large trader and manufacturer at the expense of the petty retail dealer. More [48]
and more every year the unprogressive methods of small shopkeepers foster the success of large multiple retailers. But it is likely that retail businesses, whether great or small, will ultimately tend to be eliminated. Manufacturers and trust companies will supply the public directly. What, then, will be the solution of the great social difficulties about to be created?

The answer is, that these difficulties, and especially the developments above confidently predicted for a future comparatively near, are probably transient in their nature. It is not yet the time to discuss political questions: but the problem here directly raised demands a few words of reassurance from the professed optimist.

There can be no doubt of the great social and political dangers involved in so enormous an aggrandisement of the commercial and manufacturing class as we shall most of us live to witness. What is called the problem of the unemployed grows every year more difficult and less obviously hopeful. Moreover, the concentration of great wealth in a few hands is in itself a political danger, even apart from the fact that it implies widespread impoverishment. There are dangers of corrupt legislation, for instance, and other dangers too.

But there will be another great force at work in which may be foreseen the [49]
solution of many difficulties beside this. When public education becomes rationalised; when it is employed chiefly as a means of character-making; when the universal education of mankind has the effect of turning out men and women capable of thinking, and not merely of remembering, the teeming population of the working class will begin to exercise an intelligent influence on the legislature —which at present it certainly cannot be said to do. And one thing which the intelligently-elected Parliaments of the new age will assuredly discover is this principle: that it is not good for the State that any one man, or any one associated body of men, should possess an inordinate amount of wealth.[2]

Once this principle is discovered and acted upon; once it is illegal for any person or corporation to be seised of more than a certain fixed capital; the dangers of inconvenient aggrandisement will vanish. Nor is this principle in any way [50]
unprogressive or injurious to the commonwealth. It is, in fact, not even injurious to the individuals affected. No reasonably-enlightened being can pretend that a sensible hardship would be inflicted on millionaires by being forbidden to pile Pelion upon Ossa in their present insane manner. A very rich man, compelled to desist from the accumulation of wealth, and consequently driven to the task of finding out how to enjoy it intelligently, would be almost infinitely better off for this constraint. The effect of the ordinance for the limitation of wealth will be to remove all temptation to concentrate manufactures in a few hands. It will open the doors shut by trust companies on competition. It will multiply factories of

moderate and convenient size: and one other effect of it will be to improve many manufacturing processes in themselves. There are a great many things which can be cheaply turned out in uniform batches, every article exactly the counterpart of every other, hideous in economical uniformity, because they all emanate from one or two great factories, which, if the manufacture of them were distributed over a number of small factories, would, from this circumstance alone, and from the stress of wholesome competition, be greatly improved. Probably many industries, desirable in themselves, but driven out of successful being by our present system of concentrated manufacturing, would revive. Crafts of what we call regretfully the good old kinds would spring up, rejuvenated: cheap uniformity would cease to be the principal ideal of manufacture. The people would be able to afford agreeable furniture, utensils, decorations, and household goods of all kinds, where they now have to put up with horrible but cheap makeshifts. For one great advantage of the ordinance just predicted must not be lost sight of. When you restrain the rich from becoming inordinately richer, you concurrently save the poor from being made proportionately poorer. This ideal, it should be remarked, is in no sense socialistic. It is, on the contrary, the natural development of individualism. [51]

Hardly less certain is it that before the beginning of the twenty-first century all manufactures and all commerce will be co-operative, the workers in every industry being paid, not by fixed wages, but by a share in the produce of their labour. Instead of the profit of all trade and manufacture being secured to the managers and owners of lands, machinery, transport and other commercial utilities; while labour, the equally necessary and indeed the preponderant element of production, is reckoned as a mere element of cost, in the form of wages; the profit will be shared all round. The more prosperous the enterprise, the more money the workers will receive. No man will be able to grow rich by sweating his workmen. Neither will the present degrading temptation for every workman to perform his task as perfunctorily and as lazily as he can, so long as he does not get dismissed from work altogether, survive this reform. On the contrary, it will be directly worth every man's while to do his work as well as he possibly can. The dignity of labour—a phrase now justly mocked—will become an elevating and delightful practicality. A great many articles of everyday use will be better made than it is possible to get them made to-day. The spectacle of the producers of wealth herding in squalid cabins, clothed in the rags of cast-off clothing, eating garbage, enjoying nothing but intoxication, will give way to a more wholesome and natural state of affairs. Nor will the owners of machinery, of factories and the like long oppose this development. What are called labour-troubles will cease to exist when the interest of employer and employed is identical. The problem of the unemployed will solve itself. Leisure, and an opportunity to employ leisure wisely, will have been bestowed upon the poor as well as we have seen that it will be bestowed upon the rich. A man will have no need to spend practically all the unfatigued hours of every day at the bench, the loom, or the lathe. He will want recreation. While one batch of men is seeking this there will be an opportunity for other batches to work. And work itself, once it is work for an intelligent objective, once it is work that there is a comprehensible reason for trying to execute as well as it can possibly be executed, will lose much of its irksomeness—to the vast improvement alike of the product and the producer. [52] [53] [54]

1 There is a contrivance already in existence which not only weighs what is placed upon it, but can also be made to calculate the value of the goods at any desired rate per ounce, pound or hundredweight. ↑

2 A practical objection to this principle may be here anticipated and answered. Politicians may say that for any one nation to be the pioneer in the adoption of such a policy would have the effect of driving trade and manufactures into other countries where the restriction did not exist. But there are so many highly necessary reforms open to a similar objection that I think there is no doubt that ultimately the jurists of all nations will agree upon some arrangement for universal legislation, whereby laws not affecting the relations of one country with another will be simultaneously enacted by a comity of nations. We have already one very imperfect example of such a procedure in the Convention against bounty-helped sugar. ↑

[Contents]

CHAPTER IV

THE CULT OF PLEASURE

Certain predictions in the foregoing chapter will have suggested to all who accept them that the cultivation of pleasure must occupy a large part of the

energy of the new age. From the moment when men, sufficiently astute and purposeful to accumulate enormous fortunes if they were permitted to do so, are required by law to desist from useless and injurious money-getting, a vast amount of ingenuity will be diverted to the development of the useless. The skill expended upon money-making—and let it be admitted frankly that, however unscrupulous one may be, it is not easy to become a millionaire—will be turned to the task, almost equally difficult, of spending it satisfactorily. We may consider it as practically certain that the pleasures of the new age will be largely intellectual in their nature. The stupidity of merely sensual pleasures will revolt the intelligence of the future. Athletic sports of some kind, facilitated by certain inventions which can easily be foreseen, will no doubt be a source of much [55] enjoyment, though the growing gentleness of mankind will abolish, as barbarous, games which take the form of modified assault, as football, boxing, wrestling, fencing and the like. We shall certainly acquire a great distaste for fighting in any form when growing humanitarianism shall have put an end to war—a development which may confidently be predicted for the present century. Similarly—"Am I God, to kill and to make alive?"—we shall cease to take life for our amusement; as, for sentimental and other reasons, it has been shown that we shall cease to kill for food.

What then will be our games? One of the most likely instruments of sport will no doubt be the small flying-machine. It is not in the least probable, so far as can at present be foreseen, that purely aërial and self-directed vehicles for purposes of travel or transportation will be a feature of the new civilisation. The dangers and inconvenience of large aërostats are less accidents of imperfect invention than inherent difficulties of the subject. It is very probable that some means of propelling self-supported vehicles between guideways may be discovered. But, as it is not at all likely that any means of suspending the effect of air-resistance can ever be devised, a flying-machine must always be slow and cumbersome. Travel and transportation, to be attractive in the new age, must be rapid in the [56] extreme. Ships no doubt will skim the surface of the sea instead of resting upon it. But air-ships are not very likely to be anything but a sort of vast toy, within, at all events, the next hundred years.

But, as a means of amusement, the idea of aërial travel has great promise. Small one-man flying-machines, or the aërial counterpart of tandem bicycles, will no doubt be common enough. We shall fly for pleasure; and just as thousands of working men and women now take a Saturday-afternoon spin on a bicycle, so they will go for a sky-trip, and visit interesting mountain-tops for (non-alcoholic) picnics. The bicycle or the motor-cycle will perhaps be the point of development. It is quite certain that within the next ten or fifteen years some means will have been discovered by which we can ride on a single wheel. The saving of weight thus effected will go a long way towards surmounting the flight problem. Then, when motor-unicycles are presently propelled by force transmitted (in the same way as Marconi's telegrams) from a fixed power-house, the difficulty of flight will be within sight of an easy solution. Any competent mechanician of the present day could design a flying-machine if the mere weight of the motive appliance could be overcome. When the motor is fixed on *terra firma*, and the vehicle only needs to carry a device for utilising the ætheric waves which the source of [57] power wirelessly transmits, flight will be at least as simple a matter as wireless telegraphy is to-day.

When it is possible to cross the Atlantic in a day by means of surface-riding ships, propelled, like the flying-machines, by ætheric force, the field of amusement will be vastly increased, and although (as I shall show) it will no longer be necessary to travel in order to "see the sights" of any part of the world, the pleasure of being present at the actual events of life in different countries will probably never pall. So long as any parts of the world remain comparatively unfamiliar, young men and maidens will love travel. When it is possible, wrapped in warm woollens and provided with portable heating-appliances, to pay a short visit to the Arctic circle and enjoy the matchless spectacle of the Aurora Borealis amid the awe-compelling obscurities of the Polar night: when, with even less inconvenience, we can take a trip to the tropics and witness, here the unchangeable processes of Nature's luxuriance, there the perhaps immutable conservatism of the East, the new leisure of the coming time will have great stores of recreation for those happy enough to live in the dawning twenty-first century.

The more distinctively intellectual pleasures of the new age will be much subserved by one class of invention, of which the rudiments already exist. By [58] means of the phonograph we are able, not very perfectly, to reproduce as often as we desire sounds created in favourable circumstances. By various kinds of kinetoscope we can reproduce a rudimentary sort of picture of an event which has taken place in a good light. But when the phonograph has been developed, when moving pictures have been perfected, what a vast implement of

amusement may be foreseen! Each of these inventions is comparatively new. If we imagine the discovery of means, developed from the phonograph, by which any sounds which have once existed in the presence of a recording machine can be reproduced at will, not in a makeshift sort of way, but without any loss of *timbre* and quality, with perfect articulation where articulation is necessary, with exactly correct time-regulation automatically determined by the first enunciation, and all this cheaply and compendiously, what vast resources of cultured enjoyment are offered to the lover of music! How many people, denied the pleasure of learning to understand good music by the difficulties and exertion attendant upon our infrequent and expensive concerts, will become true lovers and appreciators of it! For music is only to be really enjoyed by the average man when it is repeatedly heard, repeatedly considered. Certainly the people of the new age will be epicures of the emotions which comprehended [59] music is so nobly capable of stirring.

No doubt the new age will have solved, in a far more satisfactory way than we have been able to solve as yet, the problem of chromatic photography. When colour influences photographic plates or some contrivance substituted for them, not indirectly by a mechanical sorting-out of tints, but by affecting directly the optical properties of the plates or whatever may succeed plates, we shall have marvellously accurate pictures.[1]

Nor is this all. The kinetoscope, as at present exhibited under various unpleasing names, is imperfect in two ways: first because it is powerless to reproduce colour, and secondly because it gives at best a mere magic-lantern picture violently out of focus, and by its pulsatory motion horribly distressing to the eyes. Chromatic photography will overcome the former difficulty. When we find out how to increase greatly the receptive rapidity of photographic emulsion without spoiling what photographers call the “grain” of it; or when we have improved, as we every year are improving, the optical qualities of lenses, we [60] shall be able to have our pictures in focus. The distressing flicker of moving pictures is an objection purely mechanical in its cause. But when, as they will be in a few years, all these objections except the first have been removed, and even when we have colour-photography in a true sense of the word, there will still remain one field to conquer. We must have, instead of moving pictures, something which represents all objects as solid. The difference is the difference between an ordinary photograph and a highly-improved stereoscopic picture magnified to life-size. When these advantages are attained it will be possible to represent, exactly as it happened, any event which has been suitably photographed.

The utility of this as a means of intelligent amusement will be at once perceived. Imagine the theatre of the future. Probably it will not be beyond the means of the rich, even when restrained from over-possession as it is evident that they must be, to have theatre-rooms in their own houses. But the masses will no doubt go to the theatre much as they do now. Only instead of seeing a company of actors and actresses, more or less mediocre, engaged in the degrading task of repeating time after time the same words, the same gestures, the same actions, they will see the performance of a complete “star” company, as once enacted at its very best, reproduced as often as it may be wanted, the perfected [61] kinetoscope exhibiting the spectacle of the stage, the talking machine and the phonograph (doubtless differentiated) rendering perfectly the voices of the actors and the music of the orchestra. There will be no need for the employment of inferior actors in the small parts. As the production of any play will only demand that it be worked up to the point of perfection and then performed once, there will be no difficulty in securing the most perfect rendering that it is capable of. The actor’s art will be immensely elevated, not only by his relief from the drudgery of repeated performance and by the leisure thus afforded him for study and reflection, but also by the removal of what is keenly felt by all players of sensibility and ambition as one of the greatest drawbacks of the stage. We are accustomed to the actor’s complaint that whereas the author, the sculptor, the painter, the composer of music, makes for himself a fame imperishable as the products of his art, the actor frets his hour and disappears from the stage, to be promptly forgotten by an ungrateful public. Well, the actor’s art, like the art of the executant musician, will have the endowment of permanency. And there will be a magnificent opportunity for the actor as artist, in that he will be able to compare himself and his fellows with the actors who are dead and can act no more. It is probably true that Irving is the greatest actor since Garrick, but who [62] can prove it? The actor’s art is transient to-day: it will be permanent, it will be classical, in the next century. By this fact not only will the pleasures of the theatre be made cheap, convenient and varied, but the art of the theatre will be vastly improved.

Just as the actor will be spared the drudgery of mechanical, parrotlike repetition, so the indifferent maidens of the new age will have no need to waste their time

in learning to play upon musical instruments more or less imperfectly. No doubt some who are not professional musicians will do so for their own pleasure. But the professional executant himself will cease, like the actor, to rank as a sort of superior harlequin or performing animal, exhibiting his powers for the diversion of an assembled public. What he has once played can, if he choose, be constantly repeated. The executant will be paid by a royalty on each reproduction, when he is wise. Less prudent artists will sell their records for a lump sum, just as the unthrifty author sells his copyrights. But let it be noted that, on the assumption that the reproduction is perfect, the evolution above predicted is a highly artistic one. Instead of the executant or singer being judged by his performance on an occasion when fatigue, illness or unfavourable circumstances may militate [63] against his perfect success, when the nerve-shattering conditions of the platform probably in any case offend his susceptibilities and detract from the perfection of his performance, he will be able to found his reputation upon the very best performance he is capable of. He will be able to try and try again in the privacy of his study. When he has satisfied himself, and then alone, will he publish his artistic effort to the world. He can destroy as many unsatisfactory records as he pleases, just as the sculptor can break up his clay when he has not succeeded, just as the painter can paint out his picture when it has not pleased him, and be judged only by his best.

It would be ignoring the most obvious characteristics of mankind to suppose that the pleasures of the new age will be limited to a mere mechanical development of those which we enjoy at present. There can be no doubt that new delights will be invented. With a general improvement in intelligence and in the standard of comfort; with a moneyed class compelled, by the enactments which we have imagined, to enjoy a considerable accession of leisure; with conditions which will, as we have hoped, reduce materially the necessary hours of labour for the worker; with some of the most engrossing amusements of the present age abolished for sentimental reasons; we may take it for granted that a great demand for new recreations will develop. Some of these considerations might [64] easily give us pause. We might perhaps fear that vice—either the extension of existing vices or (if that indeed be possible) the invention of new ones—might be a terrifying problem of the next century, if we had not foreseen, concurrently with the other developments anticipated, a marked moral improvement in human nature. There is in the calculations of the pessimist and the reactionary no fallacy more mischievous than the oft-recited aphorism that human nature is the same in all places and at all times. That is precisely what human nature is not. Spectacles which delighted ancient Rome would revolt modern civilisation. Spectacles which are still keenly enjoyed in Spain would revolt England or the United States, and probably awaken the activity of the police. Human morality has demonstrably advanced in historic time: it has very perceptibly advanced, as I showed in an earlier chapter,[2] during the nineteenth century. But the improvement in this respect which the next hundred years will show must, in all human probability, greatly excel that of the past time. And thus, though a sane and reasonable anticipation will not exclude the possibility of regrettable accidents in the future moral history of mankind, it will also regard them as probably transient. The vices regarded as incident to complicated civilisations [65] have perhaps been too hastily considered by despairing moralists. Vice is essentially stupid. It is only in occasional, in sporadic instances that we are presented with the terrible spectacle of great intelligences depraved by gross immorality and animalism: and even then, this combination is only possible where a high degree of culture is in contact with a widespread unintelligence. Most likely it will be found, when the abstract laws of vice come to be mapped out with more exactness than, so far as I am aware, they have yet been, that the degeneracies and immoralities of greatly-civilised ages are in reality only the product of luxury seated upon degradation. The French moralists of the eighteenth century had a glimmering of this in their idyllic pictures of reformed society, when the old morality of the simple life was to return with the abolition of oligarchic splendour and popular misery.

In one direction we may see means by which intelligent recreation may be supposed capable of vast developments. Already the study of the psychical side of man has been the means of extraordinary discoveries. Our knowledge of hypnotism, suggestion, thought-transference and similar psychological wonders, obscured though it has unhappily been by charlatanism and the importation into the subject of irrelevant follies, has great promise for the future man, whose [66] psychical faculties will unquestionably develop at the expense of his animal instincts. It is hardly possible to limit our conception of the means by which thought will be communicated in the next century, but we may see just where the change will probably come. A printed essay, such as this, is obviously a successive translation of thought into words (in the brain), then of the words into letters, and then of letters into type, which is picked up by the eye, retranslated into words by one part of the brain, and finally transmuted into thought again in another part. If some method can be discovered of abolishing one or more of

these processes, thought can be conveyed from brain to brain at an enormously increased pace, and with a delicacy of which we have no present conception. This development is not so inconceivable as it at first appears. We know as yet almost nothing of the processes by which (for instance) vibration, accepted by the ear as sound, is, in the brain-cells behind the ear, converted into thought. Speech and writing are purely conventional devices. If, instead of using these conventions, we can learn to transmit ideas immediately from brain to brain, the next step may be an extraordinary development of intellectual pleasures, in the case of those individuals whose tastes are capable of thus being ministered to. But to say this is not to imply that the ordinary means of human [67]
intercommunication will be dispensed with. For most occasions, and for all but the subtlest and most refined necessities of thought, no doubt books, newspapers and letters will remain a feature of everyday life—though of course with such modifications as the progress of the century will have called forth. The future of the newspaper in particular is a subject of such great importance that it requires to be discussed in detail. [68]

1 Not of course in the artistic sense of the word; nor is the supersession of art by optical process in the least contemplated here. The psychological interest of art will have appreciators more and more numerous in virtue of the diffusion of culture confidently anticipated. ↑

2 *Ante*, Chapter I. ↑

[Contents]

CHAPTER V

THE NEWSPAPER OF THE FUTURE, AND THE FUTURE OF THE NEWSPAPER

Suspending, as hardly within the bounds of manageable conjecture, any attempt to follow up the suggestion with which the previous chapter concluded, we can very easily imagine the lines on which newspapers such as we know are likely to develop mechanically. A number of processes already existing in embryo can be shown to be capable of very great extension; and several discoveries which an intelligent anticipation is capable of predicting could, and doubtless will, be applied to journalism.

To foresee the future of the newspaper on what may be called the editorial side is a much more difficult task, because we have here to take into account the influence of the developed and rationalised education of the people, which is certain to demand very great changes. Daily newspapers of the present moment are in a more or less transitional state. It can hardly, I think, be denied that the papers which enjoy the greatest popularity exhibit retrogression in many [69]
respects when compared with the best newspapers of twenty-five years ago. But they are much more widely and popularly read. The collective influence of their largely-extended circulations is no doubt very great, though the influence of the newspaper on the individual is less, and is attained in a different way. The old newspapers aimed, and the survivors of their class still aim, at an influence based on argument. They used to report events, speeches and movements of their age more or less colourlessly, and to comment upon these things more or less one-sidedly, according to their respective political bias. They were ponderous, cultured, dignified, and a trifle dull. When an adverse statesman made a speech which they did not like, they reported it faithfully, and tore it to pieces in the formidable middle pages. The leading article was their most important weapon: they sought their chief effect by its means. But the day of the leading article is nearly ended. The newspaper of the early—perhaps the immediate—future will almost certainly dispense with leading articles altogether, and be much more a news-carrier than an educator. It will attack adverse opinion by simply not reporting it. It will sometimes, no doubt, minimise facts unfavourable to its political side by garbling them. But leading articles had a useful function not yet mentioned—that of explaining the news-columns. Things which the ordinary (but fairly intelligent) newspaper-reader was likely to [70]
have forgotten, or to be ignorant of, were (and still are, where leading articles worthy of the name exist) explained and amplified. In the newspaper of the future, little paragraphs having the same purpose will no doubt be, as they already begin to be, tacked on to the ends of news-items: and so far as comment continues to be given at all, on such matters as political speeches from the enemy, it will be given in this form. Speeches from the newspaper's own side will not require comment. Newspaper space will have too many demands upon it to permit of a statesman's arguments being first printed *semi-verbatim* (actual

verbatim reporting hardly exists even now) and then marshalled forth all over again in editorials. Whatever attempt is made to influence opinion through political reporting will be made by selective processes. The arguments of the adversary will be simply suppressed.

Although the old newspaper was really a much more intelligent affair than the popular dailies of the present decade—and it is chiefly of daily papers that I am now speaking—it is not very likely that a reversion will take place. It is a curious feature of all progress, that however much an existing institution may be perceived to be retrograde in comparison with older institutions, reversion hardly ever occurs. We adapt and modify what we have. We do not revive what [71] we have lost. And the regeneration of the newspaper will be forced upon the newspaper-office by the development of public intelligence. Comment will probably during the next few decades be eliminated from daily journalism altogether, and confined to serious weekly publications, somewhat on the lines of our monthly reviews, and to other publications summarising the latter, like the present *Review of Reviews*, perhaps the most useful periodical now being issued, with the single exception of *The Times*. Thus the daily newspaper will be entirely a vehicle for the propagation of news, correctly so called: and very likely it will become almost entirely colourless, politically, because a well-informed public will resent obvious garbling or clearly unfair selection. The newspaper reader will no longer (as now) want only to hear what is said on a side more or less emotionally and hardly at all reflectively embraced. He will want to know what is said on *all* sides, and will make up his own mind, instead of swallowing whole the printed opinions, real or momentarily assumed, of other people. Thus, though the frantic popular paper of to-day will no doubt increase and multiply, and replenish its circulation books, as long as the present system of blind half-education survives, the newspaper which satisfies the new age will be a very different affair. It will no doubt discard many of the trivialities now reported as [72] news, when a black woman of Timbuctoo could hardly bring forth four piccaninnies at a birth without the fact getting into the halfpenny London papers; but it will record the really important news in ways far more graphic, and with a far more complete appeal to the imagination, than we have as yet any but the vaguest notion of.

The news considered most important a hundred years hence will probably be news as to developments of public opinion. It is hardly conceivable that exactly the methods of Government which exist at present will satisfy the developed consciousness of the new time: and most likely the methods then adopted for the ascertainment of public opinion, and the machinery devised for giving it administrative effect, will create subject-matter for a type of journalism of which the very perceptible rudiments, though still nothing but the rudiments, already exist. If I am right in expecting great results to flow from new ideas and practice in our educational system, it is certain that the notion of political freedom will greatly extend its effect: and the unavoidable corollary is that movements of public thought will become a matter of the very keenest journalistic interest and of the very highest journalistic importance. The most probable means to be adopted for giving effect, in the middle-distance of the future, to developed [73] public feeling must be left for discussion in a later chapter: but when we perceive that the political duty of executing the will of the people must constitute the paramount work of the constitution-builder in the latter half of the present century, we cannot fail to deduce a vast effect on newspapers.

Broadly speaking, what will occur will be the result of clearer thinking. We shall very likely amend our political institutions after the characteristic English manner, which is perhaps really the safest, though it rather suggest the methods of a cobbler who repairs a boot by, from time to time, successively replacing sole, vamp, golosh and upper, until there remains a boot which is not a new boot, though it contains none of the original boot’s material. Our constitution has been built (to employ a better similitude) by a series of architects who reconstruct and repair the old building, with a constant adhesion to as much of the old style as they can retain, and who will in the end present the people with a house entirely reconstructed, but bearing marks all over it of the original design. We already begin to perceive that what is regarded as political freedom at the present day has developed from the entire tyranny of absolute monarchy, through the modified tyranny of limited monarchies, still not wholly powerless, to the nearly absolute tyranny of parliaments. The last now begin to delegate [74] powers to local councils having administrative functions, and must presently delegate them to local parliaments having legislative functions on some “home-rule-all-round” principle, not because decentralisation is liked, but because the intolerable inconveniences of centralisation will make decentralisation inevitable. The more energetic propagandists of various systems of constitutional reform nearly all agree in one respect: they all desire to set up some new kind of tyranny. Few—except the philosophical anarchists, who suffer from the opprobrium brought upon the name of anarchists by quite a different

set of thinkers—perceive that to endow with power any sort of machinery resting on the shifting will of a majority tends very little towards freedom and not at all towards stability—the latter even more important in some respects than the former. In proportion to the development of education (in nature even more than in extent), it is likely that the present blind faith of the public in the ability of the State to do almost anything, and the still blinder tendency of the public to require the State to do all sorts of things which could be better accomplished otherwise, will diminish, and we shall perceive the enormous educational disadvantage of allowing the citizen to lean too heavily on the State. A public [75] properly and sufficiently educated will, with enormous difficulty (because there is nothing so hard to get rid of as a bad habit of dependency), gradually undertake the task of doing for itself by free combination what at present we try to get done for us by governmental machinery. One sees how this sort of thing is gradually evolving, in spite of the violent efforts of politicians to shove the world backwards and keep us walking on crutches instead of strengthening us to walk alone. Statutes determining the wages of labourers and the price of commodities are laughed at as examples of mediæval foolishness, though (what is exactly the same thing in principle) Government still interferes with the freights charged by railway companies, and indeed is obliged thus to interfere because it has already gone out of the right way by the powers it has granted to railway companies. The new education—the education which builds character instead of merely diffusing information (generally useless)—will teach us the far greater advantages attaching to results attained by free combination, and the State will be relieved of many functions at present regarded as essential to it, and often sought to be increased.

Now the working of free combination for the attainment of these results would be almost impossible without the constant interchange of views which [76] newspapers subserve, and without careful newsgathering as to the progress in detail of various schemes and of public opinion concerning them.

To say that this kind of thing will constitute the most important class of news is not to imply that the public will develop an unintelligent indifference to news of other kind, though it is allowable to hope that it will develop an intelligent indifference to the trivialities at present solemnly chronicled by the popular papers. It may be doubted whether, even now, the public is quite so passionately interested in the *minutiæ* of murder trials as editors imagine: but with invention steadily moving on, and its consequences habitually developing in unexpected ways, there will be plenty of “news” to chronicle.

Of course the one class of news which is at once the most expensive and the most helpful to a daily paper—I mean its individual “exclusive” war correspondence—will be done with by the end of this century. Remembering the rate of progress foreseen in the early part of this work[1] and the moral nature of that progress, we may take it as quite certain that war as an institution will be as obsolete as gladiators in the year 2000. Even if the increasing amenity of the human race did not abolish war, two other things would be certain to do so. One [77] is the enormous development, already clearly in sight, of the means of destruction: the other the revolt of the peoples against the stupendous cost, not merely or chiefly in time of war, but also in time of peace, of modern armaments. The rising tide of educated democracy must inevitably banish war. We have lately, in our own South African experience, seen how crushingly expensive, how intolerably impoverishing, a tiny war can be: and all this is a mere trifle compared with what it had cost us to be even very ill-prepared for even such an insignificant combat. This kind of thing cannot go on for very long and the peace of Dives[2] must soon be upon us.

But even while war still continues to recur it is likely that the newspapers will have to sacrifice many of the advantages which they at present derive from the intense popular appetite for the details of organised death. The war-correspondent, when he can use the telegraph, is a great nuisance to commanders in the field, and the increasing difficulties and importance of modern combat will have the effect, eventually, of causing generals to forbid telegraphic communication from the field or its neighbourhood altogether, on account of the information, useful to an alert enemy, liable to find its way [78] through the wires. Consequently[3] war correspondence will be all under strict censorship, and will take the form chiefly of written and photographic descriptions, in a documentary form, probably conveyed by the organisation controlled by the fighting army itself. These may perhaps be telegraphed to the newspaper office from some intermediate port when the theatre of war is distant —for unquestionably we shall, before very long, be able to telegraph pictures quite as easily as words. And this brings us face to face with one of the most interesting and important developments to be looked for in the vending of news. Beyond doubt, newspaper illustration will, in even the near future, be the subject of great and, in fact, of revolutionary improvement. Every daily paper will be

copiously illustrated, and illustrated in colour. It is easy to foresee that before many years we shall be able to photograph any object or scene in its natural [79] colours at one operation. We can already do so in three, and by the same number of machinings we can reproduce such pictures in print, provided we can afford to print slowly enough and on a sufficiently smooth paper. The process is in its earliest infancy as yet. We shall ultimately make it far more practicable. But even so, printing presses of the present sort are far too slow for newspaper use. A hundred years hence magazines and weekly periodicals may perhaps still be printed on greatly improved presses; but daily papers will be produced by photography alone. Already the Röntgen rays will print a dozen or more images at a time on superimposed sensitive papers. In the next century all that will be necessary in order to multiply type-matter and illustrations in any number of colours will be to place the original on a pile of paper and expose it to the rays of some source of energy, when the whole matter will be impressed upon every sheet, and this not by any mere contact of type and process-blocks with paper (which involves serious difficulties, owing to the interference of the paper-surface with the grain of the etched “screen”) but by direct action of light, or of some influence taking the place of light, so that perfectly clear pictures will be produced. And news of all sorts will be the subject of this kind of illustration. [80]

What will happen will in detail be this. The teleautoscope[4] (the instrument by which sight will be wirelessly telegraphed) will exhibit the actual facts in every newspaper office from colour-photographs taken on the spot. What it shows will be rephotographed and reproduced in colours.

The amount of verbal description needed will thus be much diminished. Where an event can be long anticipated—when it is an event like the Delhi Durbar or the christening of the Czarewitch, for instance—elaborate preparations will be made, and very perfect results published. And difficulties of merely photographic detail, which at present restrict rapid photography to events in full sunlight, having been overcome, and instantaneous photography by artificial light having been made possible, such an event as an important theatrical production in London will be pictorially reported in the New York and San Francisco papers next morning. Where an event is of an unexpected character—such as a great fire, a riot, or some sudden cataclysm of Nature—the teleautoscope will still be employed with great advantage. Take, for instance, the case of some large public building or some theatre destroyed by fire—though fires will not be so frequent in the new age as they are to-day. The local newspaper artists will select from their portfolios photographs of the building kept on hand for such occasions and [81] get to work on them with paint-box and colours, depicting the progress of what they will perhaps still cling sufficiently to tradition to call the “conflagration”; and they will transmit these efforts when it is not possible to transmit actual photographs of the event. And of course, when all is over, the ruins will be photographed in colours from every desirable standpoint, and the descriptive photographer will, in a great measure, supplant the penny-a-liner. Many pieces of news will doubtless be photographed from the small one-man air-carriages, the employment of which, as a means of recreation, we have already foreseen.[5]

The real “news” of the world will therefore be served up with far more vividness than even the most feverish present-day journalism dreams of, and the newspaper will be far more quickly “read,” because long descriptive articles will have gone out of fashion, and a series of pictures, occupying much more space, but apprehended by the mind with far greater rapidity, will supply their place. Even in what remains of the printed word I think that great compression is probable. It must be remembered that even in the best-educated parts of England we are hardly through the first generation which universally knows how [82] to read, and already newspaper-English is taking on a character of its own, very different from the “journalese” of the old-fashioned reporters. By degrees a sort of slang, distinguished chiefly by brevity and conciseness, will evolve itself in the newspapers, especially those published in large towns—though indeed it is quite evident that in a few years daily newspapers will be published nowhere else. This terse, quick language will, after a period of reprobation, be adopted even by the less progressive newspapers, at first shocked to tears of indignant printer’s ink by the defilement of the mother tongue, and it will accelerate vastly the task of “running through the paper,” a task which must, even in the less hurried manners which I foresee for the future, be made as speedy as possible by the newspaper that would thrive and increase its circulation. Thus literature, already restive in an uncongenial wedlock, will finally obtain divorce from daily journalism. This does not mean that literature will perish. On the contrary, it will develop. And the periodicals other than newspapers will excel our own in merit of every sort. They will be permanent, dignified and, above all, literary. For with the education of the people really carried to perfection, and with universal leisure, the result of improved social arrangements even more than of improved [83] mechanical processes, we shall have a demand for a really intelligent periodical literature, for really artistic illustrations, which will make it commercially

possible to publish matter that only artificial endowment could support nowadays.

And shall we be content with it? Certainly not; for the new age will still be an age of progress, and the very perfection of the periodical Press will be the greatest of all stimulants to further effort.

Although, in some of their characteristics, they will be greatly ameliorated, advertisements may very likely still constitute one ground of discontent with the newspaper of the future. They sometimes are, in the newspaper of to-day, the subject of complaint not altogether reasonable, because if there were no advertisements there could be no newspapers. At all events, without this powerful source of revenue our newspapers could be neither so cheap nor so liberally conducted as they are; and all the economies of the new age will probably be insufficient to enable newspaper proprietors to dispense with them. The better and the more generously-conducted newspapers are, the more money they spend in the careful collection, editing, printing and illustrating of public information, the more dependent they will become on the revenue from advertising, which is the sinew of journalism; and the more widely and [84] attentively newspapers are read, the greater will be the revenue they are able to command from this source. Moreover, they would be incomplete without this feature. The unreflecting newspaper-reader, who anathematises his favourite journal because its weight and bulk are increased by the presence of advertisements which he does not want, seldom takes into account the fact that there are plenty of his fellow-readers who do want them, or some of them, and that he himself is often in the same predicament. Thousands of copies of newspapers are bought every day in order to consult advertisements which they are known to contain. A man who purposes to take his family to a concert often buys *The Daily Telegraph* because he knows that *The Daily Telegraph* has more concert announcements in it than any other paper, and that it is in fact a practically complete directory to all the current musical opportunities of the Metropolis. Another man, who wants a secretary, or a steward for his estate, probably orders *The Times* because he knows that the best class of secretaries and stewards advertise in *The Times* for employment. One hardly goes to the theatre or buys a supply of coals without looking at the daily paper for information; and assuredly this information is not inserted without being paid for; in other words, it forms part of the advertisements. Deprived of newspaper [85] advertisements as a way of announcing its need of clerks, warehousemen, labourers and assistants of all kinds, commerce, even if it could manage without advertisements of the sort more commonly thought of when the nuisance of them is being condemned, could hardly keep up its organisation at all. Thus, so far from this feature of our newspapers being a grievance, it is both directly and indirectly a boon to all who read them. And when we remember in addition that the cost of the paper and printing alone in a copy of most newspapers exceeds the price at which each copy is sold by the proprietor, so that the whole cost of newsgathering, the whole cost of editing, the fees of contributors and artists, and the cost of pictures and engraving, as well as the profit which induces persons to embark upon an enterprise so troublesome and precarious as newspaper-publishing, must be obtained from the cost of advertisements and from this alone, we cannot doubt that the enormously developed newspaper of a hundred years hence will “give us bold advertisement,” even as now, and that our descendants will have the intelligence to be very glad that it does so.

This being unquestionable, we can hardly think that we have made a complete forecast of the newspaper of the future unless we consider what sort of advertisements it will contain, and in order to do this we must consider just what [86] advertising is likely to be needed in the new age.

As every condition of commerce must necessarily be affected by the mechanical and economic developments of another century, evidently advertising will have to undergo vast changes in order to adapt itself to new requirements. Already competition and the urgent demand of the public for all possible utilities and luxuries to be supplied with the greatest economy of money and trouble have produced changes in the machinery of supply and demand which must develop at an increasing speed as time goes on. One tendency of these things is current talk; we speak of “eliminating the middleman.” Well, the middleman will certainly be eliminated by the end of the century, and one of the forces which will help to eliminate him is the very force with which, at present, he endeavours, with a high degree of transient success, to defend himself—the very force we have to discuss here; advertisement.

So long as a population is scattered into groups in small towns, and hampered by difficulty and expense in transportation, there is an evident advantage in the retail-shop system. But we can hardly with convenience remain a nation of shopkeepers in the present and future state of concentration and with

cheapened transport. It is only necessary to observe the different ways in which we supply ourselves with commodities, according to where we live, in order to [87] understand the tendencies at work. In a village remote from any large town there are generally one or two general shops, at which a highly miscellaneous collection of merchandise is handled. The smaller the village the more miscellaneous the stock kept at a single trading establishment. In a small town the shops differentiate themselves more: but they still cross the boundary lines of trade, and one gets tobacco at the chemist's and goes to the draper's for writing materials and books. When we come to towns somewhat larger, trades keep more to themselves, and it is often possible to find a place where there are no miscellaneous shops at all, except those owned by the industrial co-operative societies now so common and so useful to the thriftier artisans. It is only when we enter the largest towns and cities of all that we find large shops divided into departments and again selling almost everything under one roof.

The conditions in these large towns are an index to what is likely to occur a hundred years hence: because (as has already been seen) towns will certainly grow, and the population will become more concentrated, while, even where improved facilities for travel enable men to live at a great distance from their work, the same facilities will enable their wives to do their shopping in the centres of commerce. Consequently, except for a few highly perishable [88] commodities, such as milk, butter and the like, small shopkeepers in residential neighbourhoods will be driven out of business, as they are in fact already being driven out of it in the suburbs and dependencies of all large cities.

It is always possible for a large miscellaneous trader to sell at a smaller percentage of profit than a trader in a single class of merchandise: and by his bulkier purchases the former is also able to start with a lower cost price, and thus he is in every way better situated to meet the demand for cheapness. He can also meet the demand for convenience, because when he is getting almost the whole trade of a family, even at some little distance, he can afford to arrange for the transportation of goods in ways convenient to the purchaser. Thus the small shopkeeper will lose custom in every way and the large shopkeeper will gain custom. But there is still a middleman. We have not yet begun to see how he is to be eliminated, but only how he is to be limited in his numbers while being individually pampered with increased trade.

No one who observes the trend of things, however, can have failed to note how, from both sides, the middleman, *quâ* middleman, is liable to be squeezed out. These very large retailers tend more and more to become, little by little, manufacturers instead of merely agents for the manufactures of other people. [89] Very often they are actually forced to this by the difficulty of obtaining a regular supply of goods of satisfactory quality from the existing factories. One of the largest companies doing a miscellaneous retailing business has an enormous estate in the neighbourhood of London covered with orchards where fruit is grown for sale and for jam-making; and it has factories of various kinds dotted all round the Metropolis, though a few years ago it was a simple trading concern which manufactured nothing. On the other hand, large manufacturers in many trades (of which the boot trade is an example which must have come under the notice of every reader) are tending to open retail shops of their own in favourable localities, so as to obtain the retailer's commission as well as the manufacturer's profit. Evidently these large manufacturer-shopkeepers are more likely to be extensive advertisers than small one-shop retailers.

Another circumstance which will tend to the increase of advertising is already apparent in the growing tendency of the public to prefer branded or packed commodities before bulk goods. Such groceries as tea, oatmeal and the like are more and more purchased in packets bearing a manufacturer's name or trade-mark, instead of being purchased from bulk and wrapped up by the grocer. The obvious reason is that by this means a housewife can secure a greater uniformity [90] of quality. She finds that she likes a certain manufacturer's oatmeal better than any other, and always buys it; whereas if she bought bulk-oatmeal she would have the product now of one mill, now of another, and these products would vary. The only way in which a manufacturer can call attention to his speciality is to advertise it. The immediate consequence of this movement is the degradation of the retailer, who ceases to be the custodian (so to speak) of his customers' interest and becomes a mere hander-out of packed specialities. It is not very likely that every manufacturer of such specialities will become a retailer with shops everywhere; but it is practically certain that trusts will be formed on a sort of co-operative principle by combinations of manufacturers, who will divide among themselves the expense of organisation and obtain the whole profit without having to share it with any middleman. And in many departments of commerce the elimination of the retailer will be secured by the utilisation of improved transport, orders being received at the works by letter or telephone and executed direct from manufacturer to consumer. Such business can only be

stimulated through advertisement, and the newspaper of the future constitutes the most convenient medium for such advertisement. [91]

The intrinsic nature of the vastly-extended advertising of the new age will be influenced by the new growth of public intelligence. Once almost wholly, and now to a very great extent, addressed to the least intelligent faculties of the public—the faculties most liable to be influenced by large type and *ad captandum* phrasing—advertising will in the future world become gradually more and more intelligent in tone. It will seek to influence demand by argument instead of clamour, a tendency already more apparent every year. Cheap attention-calling tricks and clap-trap will be wholly replaced, as they are already being greatly replaced, by serious exposition; and advertisements, instead of being mere repetitions of stale catch-words, will be made interesting and informative, so that they will be welcomed instead of being shunned; and it will be just as suicidal for a manufacturer to publish silly or fallacious claims to notoriety as for a shopkeeper of the present day to seek custom by telling lies to his customers. Skilful writers will be employed upon the work, and skilful journalists will think it no derogation from their dignity to be employed in the writing of commercial advertisements. No doubt the methods of illustration employed in journalism proper will also be pressed into the service of the advertiser, and in this, as in other respects, our “divine discontent” will still look for improvements, and the newspaper of the future will be a vast improvement [92] upon the newspaper of to-day.

Although the distinction between journalism and literature is likely to define itself more and more sharply—periodicals growing more literary, and newspapers less literary—it is here convenient to pause for a moment on the question of the direction in which literature is likely to develop—meaning especially imaginative literature and poetry. The past of this development, widely considered, has been, of course, since the close of the eighteenth century, from the classical, through the romantic, to the realistic school; and the last has been associated with a greatly-increased and minute consideration of language as an implement of exact and elegant expression. Literature has become, and will no doubt continue to be, increasingly self-conscious. Happy effects are deliberately sought for. Felicity of phrase is no longer a matter of unconscious, almost accidental, accomplishment; it is purposefully and deliberately obtained. We no longer expect inspiration from the Muses, but climb Parnassus with arduous consciousness of our meritorious pedestrianism. The methodical, scientific orderliness of modern thought has, in short, invaded even the field of art, and we have sometimes an air of trying to make of literature an exact process. Perhaps very great literature, and certainly, according to all precedent, very great poetry, cannot be produced in that way. There is something of [93] mystery about them, something of the instinctive, of the elemental, or, to speak with a more critical exactness, of the spiritual. And the development and circumstances of very elaborate civilisation do not wholly favour the spiritual. But to conclude from this that great poetry will never again be written would be to overlook one of the disturbing, the cataclysmal factors of human life. This factor is one of the greatest pitfalls of the would-be prophet. By examining the past, one could predict almost unfailingly the future, if there were not always, and in every department of life, the strange, incalculable thing which, for want of a better name, we call genius, to be reckoned with, to be almost alarmed by. We may examine, we may reason, we may reckon up almost anything; but athwart all our conjectures, charm we never so wisely, comes genius, and revolutionises everything! It is the one thing which no formula can embrace. Not in the realms of literature and art alone will it break in and stultify our best prevision. In every department of life we must tread cautiously, aware that no one who would forecast the future can afford to neglect its disturbing possibilities. We must prayerfully and joyously expect that from time to time genius will suddenly arrive and pass across the stage, changing everything, bringing to naught our cunningest anticipations; and as it is peculiarly the [94] quality of literature to be thus perturbed and regenerated, we must not even attempt to predict what schools the literature of the future will pass through. The only thing we can be certain of is that from time to time some epoch-making mind will express itself. Acquainted with all the devices of the schools it will brush them all aside, and half unconsciously, half a-dream, as if indeed it were literally “inspired,” it will establish new standards, engender new methods, and endow the time with new delights. Criticism will dissect, examine and explain, until the creative mind is almost persuaded that it has all along understood itself; but the one thing by which criticism must ever be eluded, the one thing which must ever elude prophecy, is genius itself. When all is said that man can say, and all is said in vain, the best explanation of the unexplainable is perhaps the old one, that genius brings in some way a message from outside the world. Perhaps, since there is always a demand for something which man can worship, this inspiration may be the subject of the conscious adoration of the new age. Perhaps we have here the subject of the religion of the future; for inspiration, as

we may most conveniently name this mystery, has just that character of the unknowable half-seized, which is precisely what the soul of man is ever yearning for. [95]

1 *Ante*, Chapter I. ↑

2 Kipling: *The Five Nations*. ↑

3 It can hardly be disputed that the British generals in the late war in South Africa would have done well to cut the cables altogether, or at all events reserve them exclusively for their own use. There is very good evidence that, in spite of the interdiction of "coded" messages, information passed both ways between the enemy and his agents in Europe. The resolute manner in which the Japanese kept newspaper correspondents away from the scene of action until no action remained for them to correspond about, shows conclusively what will become of the war-reporter during the few remaining decades which separate us from the final disappearance of moribund war itself from the planet. ↑

4 *Ante*, Chapter III. ↑

5 *Ante*, Chapter IV. ↑

[Contents]

CHAPTER VI

UTILISING THE SEA

Except for a small tribute in the shape of fish food and certain salts the ocean is to-day almost a dead loss to the world, and what is worse, the greatest of all obstacles to progress. It separates us from our kin, wrecks our ships, claims a yearly toll of dead, and is barren, fruitless, a mere receptacle for garbage. A hundred years hence we shall have awakened to these facts and found means to make "the caverns vast of ocean old" something better than a subject for the poet and a resting-place for the dead whom it murders.

Not every dream, however, can be realised—not even the engineer's. Some years ago certain ardent spirits in France announced that the desert of Sahara lay below the level of the sea and could be flooded with the Atlantic or Mediterranean. The effect of this, it was considered, would not merely be to inconvenience certain Arabs, but to change entirely the climate of the rest of equatorial Africa. Laved by the beneficent waves of ocean, lands at present uninhabitable would, it was declared, become fertile and salubrious. The project was dismissed or shelved as impracticable from engineering difficulties. Shall we, a hundred years hence, have met these difficulties? [96]

Probably not. To work such changes in the distribution of land and water will be a thing not indeed beyond the power of the next century's engineers, but beyond their daring. The accomplishment of them might, if at all rapid, be attended by frightful disasters, some of which can be readily estimated, but of which the worst would probably remain unforeseen and unimagined until the irrevocable moment of fulfilment. To increase to this extent the area of the world's oceans, without increasing (as of course we could not increase) their mass, would perceptibly lower the level of the sea everywhere, and in accordance with the well-known hydrostatic law things would "right themselves" on a cataclysmal scale. Every narrow strait in the world, every oceanic canal would become, for the time being, a roaring cataract. The Mediterranean would rush tumultuously out through the Straits of Gibraltar and the Suez Canal, and the overflow would flood the adjacent lands. The Straits of Dover would roar like Niagara, and all Kent, and the low-lying north-east corner of France, would be devastated. The isthmus of Panama might at the same time be swept away, for the narrow banks of the completed Panama Canal would certainly give way before the weight of the two oceans. All the rivers of the world would rush down in spate until they ran nearly dry from the increased outfall. The sea would recede from all the coasts. Along with this fall in the level of the sea would come tempests such as, since the appearance of man on the planet, the world has never known. For the sea-supported atmosphere would suck into its vacuum the whole weight of the over-lying air until pressure was equalised. And the climate of all the world would be reconstituted in new and probably inconvenient ways. [97]

No. We cannot venture thus to change the face of creation. What we can and shall do is to make the best of it. In a hundred years' time many countries at present undeveloped will be rich and populous. Canada, for one example, has an area greater than that of the United States, with a population smaller than the population of Greater London. And Canada, endowed as it is with almost every

source of wealth, will before long become perhaps the richest country in the world. By this time next century it will also be one of the most populous. Siberia, again, with many fertile and salubrious tracts, will certainly have been more intelligently utilised than by making a vast prison of it. But when all the regions available for human habitation are populated and made use of, the centres of [98] civilisation will probably lie very much where they lie now; and here the congested populations will have found that they can no longer tolerate the waste of a neglected ocean. As we push outward from the centre of the continents, the seaboard will have to be utilised and extended. There is nothing to daunt the engineers of a hundred years hence in the project of erecting on the sea a vast floating city, fully as convenient as the present cities of *terra firma*, and, while vastly more healthful, quite substantial enough to resist storm and every motion of the sea, except the tides on which the city will rise and fall—tides which will no doubt furnish the motive power of many conveniences in ocean cities.

There are great advantages in a city thus founded, as compared with those we at present inhabit; and we certainly shall not be able to neglect them. There will be no particular reason for economy of space or for insalubrious overcrowding (since the sea has no landlord), and breadth would make for stability as well as for convenience. Urban traffic will employ an entirely new light vehicle, the skimmer. It has been mentioned as a thing beyond doubt that the ships of a hundred years hence will no longer float in the sea, but ride on its surface, thus evading both the instability and the resistance at present so troublesome to marine engineers. As soon as the necessity arises for providing street traffic in [99] the ocean city—when “the sea is in the broad, the narrow streets, ebbing and flowing, and the salt weed clings to the marble of her palaces”—invention will meet the demand, and light street waggons and carriages will everywhere glide about, performing the daily needs of the inhabitants. Something in the nature of break-waters will provide against wave-play and form an unequalled exterior boulevard; and by means of an invention which will long since have been called for by the requirements of other localities, the air of dwelling-houses in the ocean city will be wholesomely freed from damp.

For we shall certainly not have failed to act upon our knowledge of the fact that irregularities in the proportion of atmospheric moisture are responsible for the unhealthiness of certain areas; and we shall have learned, by means of the anhydrator, to provide any place with exactly the degree of damp or dryness necessary to health. The same apparatus, by desiccating the air to the extreme point, will keep the houses of an ocean city dry and thus do away with an objection which would make homes built on the water insufferable to-day.

If we have not wholly reformed throughout the world our system of land tenure, the conquered ocean will unquestionably relieve the tension which is created by [100] it, and perhaps a radical change of this character will only become possible when the enormous advantages of it have been practically exemplified.

But there is another way in which the conquest of ocean ought to prove a great economic boon to the world. Except in the case of a few coal mines, with shafts sunk near the sea beach, we have hardly at all begun to investigate the contents of the ocean floor. There is, so far as I am aware, no particular reason to doubt that the constitution of the subterranean world is in most respects very much the same under the sea as under the land. Probably vast riches, as yet undreamed of, lie below the surface of the ocean and beneath its floor. There can be no question that the needs of the world will make us eager to tap them, as we should already have begun to, if any way could be discovered of overcoming the engineering difficulties involved. These difficulties, in the present state of our knowledge, may well appal the stoutest imagination. The problem presented by the immense and paralysing air pressure in a mine at this great depth would have to be overcome. Even in some great terrestrial excavations already made the problem occurs: and where (as in river tunnels and elsewhere) men attempt to work in great air-pressures artificially induced, the phenomenon called [101] caisson-disease occasions practical difficulty. But the mere fact of an achievement being almost inconceivable in the light of present knowledge and invention must not be allowed to put a clog upon a forecast of what next century may attain. It is a hypothesis which the reader has been invited to accept, not merely that discovery and invention will go on, but that they will go at a constantly-increasing pace. We must not, therefore, allow what may well seem, at the present day, insuperable engineering difficulties to forbid the belief that the undiscovered wealth of the earth below the sea will be tapped for the benefit of the new age. What minerals may lie there, a rich heirloom for the coming time, we can but roughly imagine. But enterprise and the world’s necessities will spur us on to search them out, until the new people, deriving like a fresh Antæus constant stores of strength from Mother Earth, will enter into possessions which must vastly relieve their necessities. Individual enterprise will solve the problems and reap its store of profits. But the ocean is no-man’s land, and the

people—perhaps a world-people, for this purpose at least not subdivided into antagonistic communities—will beyond doubt take toll, for the relief of general taxation, from the earnings of the new mineralogy. [102]

In other ways, too, the sea itself will be made use of. We shall get our salt from it, the process of separation being electrolytic. Fish will probably be eaten later than any other form of animal food. But the chief gift of the sea to the life of the future will be the two gases of which water is composed—oxygen and hydrogen: and the other gas, chlorine, which forms half the salt, as well as the metal sodium which forms the other half, will probably have many new uses found for them. Liquefied oxygen will no doubt be our sole disinfectant. It will also replace the poisonous, noisome and destructive bleaching agents used to-day. Hydrogen, the lightest of all gases, will be another staple of commerce. It will (as we have elsewhere seen) probably be the only fuel employed, for its combustion furnishes the greatest heat terrestrially known, and its flame is smokeless and yields no poisonous by-product. Moreover, the evaporation of liquid hydrogen, by a sort of curious revenge, produces the greatest available cold. If anything in the nature of balloons should survive the century hydrogen will inflate them, and both our hydrogen and our oxygen will most likely be got by preference from the sea. There are many reasons for this preference. Probably there will be some advantage in the matter of expense, since the salts of ocean water would be a by-product of the operation, and it is conceivable that a use may be found for the [103] rarer among them, which could only be obtained in satisfactory quantities by reducing to dryness huge amounts of water. And potable or spring waters will perhaps be too precious a commodity to be consumed unnecessarily. Distilled water could no doubt be used for drinking purposes, and bacteriologically it is of course unexceptionable; but there are certain objections to it, and though these may doubtless be overcome, natural waters have a value which cannot be ignored.

Thus the oceans of the world, as yet mere watery deserts, useful to hardly a calculable percentage of the people (and then only at the expense of the rest) will have become the world’s inheritance, and its hoarded wealth will stave off the time—whose coming we must not ignore—when our world-capital begins to be exhausted. For that time must come. We are living upon the hoards which the womb of our mother the earth has borne to our father the sun. But our mother is, in respect at all events of mineral wealth, past the age of conception; and every century brings us more rapidly near to the time when we shall, like spendthrifts, have lived out our capital. Already the end of coal is in sight. When, at the end of a vista however long, we begin to be able to foresee the exhaustion of other minerals, we shall face a problem appalling in its nature. Perhaps before [104] our store of heat gives out and reduces earth to the state of a dead world like the moon, we shall already have exhausted our stock. No economies in the use of scrap metal and the re-employment of the material of machines which have been superseded can save us from ultimate metallic bankruptcy in a future calculated perhaps in thousands (but not many thousands) of years. Our only succour seems to lie in a conception for which (despite the efforts of some lively thinkers who have been obliged to ignore all but the least important difficulties of the subject) we have no material—the conception of means by which the cold depths of interplanetary space may be traversed. Even if we allow imagination, untrammelled by the most evident necessities of the case, to suggest a speed of transport computable only by astronomical analogies, we still lag behind anything which could serve this purpose, unless we concurrently believe that human life shall, by that time, be lengthened into centuries. Otherwise, however recklessly we may conceive of speed in interplanetary travel, man would almost require to live for many centuries in order to reach and return from any destination which would not inevitably destroy him by fire or cold when he arrived at it. Most likely man is for ever destined to accept the bounds of his own planet, and to be limited by its resources. In order that these resources may be [105] utilised to the uttermost of his needs, the contents of the ocean floor must undoubtedly be laid under contribution, and probably we shall not antedate this achievement if we consider that it will have been at least entered upon a hundred years hence. [106]

[Contents]

CHAPTER VII

THE MARCH OF SCIENCE

In a forecast like the present it is impossible to avoid a certain amount of

overlapping in different sections of the subject and a certain blending of topics in a single chapter. The attempt to differentiate consistently between the progress of science as science, and the concurrent advance of practical invention by which scientific discovery is turned to use would only involve needless repetition. I have already had occasion to suggest elements of material progress which presuppose the advance in pure science that would make them possible. Thus, in endeavouring to suggest what the methods of commerce and the condition of our cities are likely to be in the future it was necessary to conceive certain advances in our knowledge of what is rather clumsily called “wireless” telegraphy, and to predict the discovery of new and cheap methods of analysing water into its component gases as a source of fuel and as means for the production of electricity: and in order to avoid useless repetition it was found [107] convenient to work out in a rough manner the various ways in which the cheap and inexhaustible supplies of hydrogen and oxygen which I have imagined discovery to have placed at the disposal of invention would be employed in the arts. Similarly, when we interrogate imagination on the subject of scientific discovery itself, we shall be forced to think chiefly of the practical results likely to be achieved by it, and indeed there would otherwise be hardly any purpose to serve by the effort. What imports the greatest amount of complexity into the subject is the difficulty of conceiving the lines upon which science is likely to travel, unless we allow ourselves to be guided by the practical requirements of the future as far as we are able to foresee them. Imagination has indeed superabundant room in which to run riot when it endeavours to give form to the probabilities of scientific discovery; and the only danger is that effort may be wasted in purely fanciful directions, if it be not pretty securely tied down by some such artificial restraint as the convention of keeping more or less strictly to the anticipation of discoveries likely to have immediate practical application.

For instance, there is hardly any end to the developments we might allow ourselves to imagine as arising out of the new theories, still in a probationary condition, as to the ultimate physical structure of the universe. Such conjectures [108] might be followed indefinitely in several directions, and the resulting conclusions would be more likely to err by timidity than by extravagance: but as there is no knowledge at present available which could serve as a guide to the probably-right, and as a warning against the probably-wrong, directions, it would be neither interesting nor useful to pursue them. Radium “the revealer,” as Dr Saleeby has called it in one of those brilliant papers which fine imagination and delicate fancy have adorned with many another noble phrase and memorable image, opens the door to a whole world of new possibilities. Our whole conception of cosmic processes may have to be remodelled, in the light of those tiny scintillations which the spinthariscope has popularised. Already our notions concerning the nature of matter have been revolutionised. We are told that atoms, regarded hitherto as the ultimate units of matter—so small that Lord Kelvin has calculated that if a drop of water were magnified to the size of the earth the atoms in it would be somewhere between the size of small shot and the size of cricket balls—are themselves made up of a stuff so almost infinitely more tenuous, that the particles of it within the atom are, relatively to their size, farther apart than the planets of the solar system. Nor is this all. These particles, [109] commonly called electrons, if particles they can still be designated at all, were at first said to “carry” a charge of electricity. But it now seems that they *are* electricity itself. If this be true, we should seem to be on the point of bridging the void between what used to be called the eternal antithetics—matter and force: and whither this will lead us can only with the greatest caution be pre-imagined. In any case the consequences of this discovery, philosophical as well as scientific, are stupefying in the possibilities they open up to the thinker as well as to the man of practical science. At last science begins to join hands with philosophy. What will be the philosophy of a hundred years hence, imagination pales before the effort of attempting to conceive.

But the working out of the revelations promised by radiology belongs rather to this end of the century than to the other. During the interval there can be no doubt that electricity, already man’s chief handmaid, will have increased and perhaps completed her services to the race. When, as I ventured to suggest in a former chapter, inexhaustible and cheap “current” is yielded to us by some method of utilising the electrical reciprocity of the hydrogen and oxygen gases derived from water, doubtless all machinery will be electrically driven, all transport electrically propelled. Perhaps this discovery lies so far in the [110] foreground of the future as to be irrelevant to any anticipations of the world’s condition a hundred years hence. The full development of electrically-driven machinery lies in the middle distance, and the duration of the electrical age can hardly be precalculated with any greater exactness than the suggestion that it will probably have reached, or at all events approached, its end in about a century’s time.

The most important problem connected with this subject is to imagine, if we can,

how electrical power will be applied. It is quite evident that the device of long conductors, either overhead or below ground—the “live wires” of alarmed America—is too clumsy and too dangerous to be long tolerated. It is indeed a public scandal that cables carrying an electrical charge capable of killing or paralysing at a touch should be suspended over the heads of the citizens, exposed to momentary breakage by snowfall, high wind, or the inevitable wear which careless inspectors may overlook: and the mere fact that a horse can occasionally set foot on a ground plate and fall dead from the contact shows that even the vaunted “conduit system” must not be regarded as anything but a strictly-temporary device. Some of the dangers of the underground electric wires arise out of the use of our present illuminating gas, when a pipe leaks into a [111] manhole or inspection chamber, forming an explosive mixture of gas and air, which presently becomes ignited by an electric spark and blows up the whole affair. No doubt coal gas is within easily measurable distance of its end as a convenience of civilisation. But it is extremely probable that hydrogen and oxygen will be conveyed by mains to houses and public buildings during a long time: and it is hardly possible to believe that the mains will not sometimes leak and be capable of letting out mixtures far more dangerous on ignition than the mixture of coal gas and air, and still more dangerous because neither of the gases, nor the mixture of them, has any smell, unless indeed we should take the precaution of giving them one artificially. Whatever we may do, and we shall do much, to minimise the dangers of highly-evolved civilisation, accidents will always occur, and their violence will probably increase. We must pay our toll to the conveniences of life, and we shall of course compensate ourselves by a lower death-rate from diseases, many of which will no doubt in a hundred years’ time have disappeared from the planet.

If we need any motive power other than electricity, or if we need motive power of some other kind to produce electricity, no doubt the explosive recombination of oxygen and hydrogen, controlled by devices developed from existing gas-engines and petrol-engines, will be a starting-point: because coal will, probably [112] before the complete exhaustion of the supply of it, have been found altogether too dirty and unhealthy a thing to use, at all events by way of combustion, though rumours are heard from time to time of new methods by which the stored energy of coal may be utilised directly, to the great economy of the material.[1] In all sorts of ways the early years of the century will be employing themselves in seeking out new sources of man’s chief necessity—power: and a hundred years hence we shall have entered upon the full inheritance of them.

But the obtaining of power is only one problem of the mechanician. Of almost equal, if not quite equal, importance is that of applying power at the place where it is needed, and the careful reader will not have overlooked the fact that while we have been discussing the use of electricity as a source of power we have already been anticipating, and perhaps anticipating a good deal. For, when we now speak of machinery and locomotive engines being “driven” by electricity, we are really only employing a sort of convenient periphrasis. All our electric machinery, all our electric railways, our “tuppeny” tubes and the horrible electric trams which make life almost intolerable in houses along many of the main roads out of London, are really driven by coal-burning steam engines. In a [113] few places (especially in the Niagara valley) waterfall power is used. But whatever the real source of power, electricity is only a means, more or less convenient, of transmitting it. Even electric launches, and slow-going electric broughams driven by accumulators, only represent slightly more subtle examples of the electrical transmission of power. The ultimate source of power is always either a steam-engine or a waterfall. A few lecture-table toys and the like are the only existing examples of machinery in which the actual source of power is electricity. Even here, it may be objected, the actual source of power is not electricity, but chemical action in the battery. But no contrivance of man is an ultimate source of power. Even a steam-engine is only a device for utilising the stored solar energy of coal. Of course man can no more create power than he can create matter: the stock of each in the universe is a fixed quantity. All that we are able to do is to harness to our use a part of the cosmic store. When I speak of electricity becoming hereafter a “source” of power, I am merely distinguishing between its use as a means of transmitting force already perceived as force in some other form (as where a dynamo-electric machine receives motion from a steam-engine or waterfall and turns this motion into electricity, which is conveyed by wires or rails to an electric dynamic engine that reconverts it into motion) and its use as a primary means of utilising the cosmic [114] stores of force.

Before we arrive, therefore, at the point of using electricity as a source of power in itself, our mechanicians will have plenty to occupy them in the task of devising safer and more convenient methods of transmitting force, and even at the end of the century, supposing the use of electricity not to have been entirely superseded by the discovery of some entirely new force as yet not even

conceivable, invention will doubtless be still busy with further improvements in the transmission as well as in the production of electricity. It has been hinted that “wireless” transmission of power will no doubt by that time have become practicable, and Signor Marconi’s achievement of wireless telegraphy was mentioned as a proof that such transmission is at least imaginable. In Marconi’s invention an enormous electrical impulse is launched into the æther, and if the very smallest token of it can be “picked up” in any way at the receiving station, the wireless telegram is satisfactorily received. But the important fact for our present purpose is that some product of the original impulse *can* be picked up: and though the effort of imagination required to see in this a starting-point for entirely new inventions, capable of gathering up a practicable modicum of the transmitted power in a form capable of being converted into motion, is severe, [115]
we shall bring but a poor imaginative equipment to a task so colossal as that of guessing what the next century will be capable of if we refuse to believe that something in the nature of Hertzian waves, or something propagated as these are propagated, can be used to carry impulse to machinery at a distance from the source of power. The imaginative faculty which boggles at this effort will probably overlook the fact that the mere transmission is only a part of the difficulty which is pretty sure to have been overcome by this time next century. It will not be enough to launch waves capable of being used where they are intended to be used. We must also discover how to launch them so that they may be incapable of being used anywhere else. I read the other day the report of a police-court case in which a man was charged with “stealing electricity” (which seems a rather doubtful indictment from the point of view of the lawyer) by obtaining the use of a public telephone station without paying the usual fee. The electricians of a hundred years hence will certainly have to find out how to prevent the purloining of wireless force, and perhaps the police will have to devise means of detecting this at present somewhat recondite crime. This question of wireless transmission lies within the province of discovery rather than that of invention. Before it can receive actuality we have to do more than utilise existing knowledge: we have to acquire new knowledge. [116]

In the meantime, portable energy will no doubt be achieved in ways other than electrical. Some very interesting compressed-air tools are already in limited use. Holes are drilled and rivets driven by little contrivances which have a store of force within themselves furnished by compressed air. One of the many uses of the cheap oxygen and hydrogen, and doubtless of cheaply liquefied gases of high-resisting power,[2] will no doubt be to work various kinds of machinery. This use of liquid airs has been much derided, and indeed a good deal of nonsense has been written as to its possibilities, drawing from a recent and accomplished writer the remark that “The statements which have sometimes appeared in the daily papers, announcing impending revolutions in the methods of obtaining cheap power by the application of liquid air, have originated from an imperfect comprehension of the problems involved.”[3]

In present conditions, and so far as we are able to see at present, liquefied gases are for a long time not likely to serve any greater mechanical purpose than that [117]
of furnishing a highly portable apparatus by which great power can be developed for a short time at any required place. It is easy to believe that it could not be otherwise employed with any economy, even when discovery has greatly simplified the now difficult process of liquefaction. But in regard to this matter, and to almost every other mechanical and engineering improvement suggested in the present work, it is of the first importance to remember that the conditions in which the work of the world a hundred years hence will be done are certain to differ very greatly from anything we know to-day; and that procedures at present not merely out of proportion, but in themselves actually chimerical, will become perfectly workable in the new circumstances of another century. No doubt the problems at present involved make many of the developments herein suggested almost laughable to those who examine the subject without imagination. But what could have been thought of a man who, when Oersted discovered the influence of a battery current on the compass needle, suggested that the discovery might, in much less than a hundred years, be practically developed in such unforeseen ways as to produce locomotive machines capable of carrying vast weight at a speed of perhaps a hundred miles [118]
an hour? He would have been told that such predictions “could only have originated from an imperfect comprehension of the problems involved.” But we know that they would have been perfectly sound, though it would have been difficult to withhold assent from the derision which instructed hearers would have poured upon them. The effect of any scientific discovery can only be measured when we are in a position to judge of the conditions in which it may be applied, and the further discoveries which may affect it—a consideration which will help us against the danger of undue caution in estimating the possible developments of recent discovery when utilised in the conditions of the next century and reinforced by inventions and discoveries yet to come.

A like caution will, however, teach us to restrain our expectations from the new knowledge which radium appears to be gradually unfolding, not because there is any doubt that radio-activity will ultimately bring priceless gifts to civilisation, but because in our present ignorance of all but a few facts concerning it we can form no possible conjecture as to the lines these gifts will follow. Already we seem to have seen in some of the radium experiments one “element” turn into another. If this should develop until we acquire the power which used to be dreamed of as transmutation, the social and economic upheavals which would [119] result beggar imagination.[4]

The photographic effect of Röntgen rays has already[5] been the subject of a suggestion, and even the facts now remotest from practical use in connection with the rays of various sorts so much discussed in the scientific newspapers will no doubt be utilised in a manner or in manners far removed from the limited employment in therapeutics already found for them.

And indeed medicine, not the most progressive of modern sciences, will no doubt make vast strides during the period under discussion.

It would be altogether fallacious to forecast the position and probable achievements of medical science in a century’s time on the line of simple development from the practice of to-day. The changes will be revolutionary rather than evolutionary. When it is remembered that only fifty years ago limbs were hacked from the quivering flesh of the sentient patient, held down by [120] muscular assistants lest the violent struggles of his agony should embarrass the surgeon, and that wounds of all sorts festered and decayed until a hospital reeked with their impurity—in other words, that discoveries so great as anæsthesia and antisepsis are well within living memory—we need not hesitate to predict for the present century changes in medical and surgical science almost inconceivable by the light of our present attainment. Anæsthetics—of which the local kinds, as cocaine and eucaine, are of entirely recent use—represent an advance in one direction. Antiseptic surgery, which is the prevention and correction of blood and wound-poisoning by chemical disinfectants, represented an advance of a different kind. But antisepsis is already on the point of being superseded by the far more rational and scientific method of asepsis, or the exclusion from open wounds of all the germs which can set up inflammation and festering. The change is typical.

The direction in which medicine is chiefly working at the present time is that of introducing into the body one disease with the idea of excluding other diseases. It is conceived that cow-pox is antagonistic to small-pox, erysipelas possibly to cancer, and so on. All the talk in medical circles is of serum and attenuated virus. And, apart from animal products administered by injection, we cure or [121] attempt to cure all diseases by administering poisons—animal, vegetable or mineral. Just as by antiseptics we poison the germ which causes festering and inflammation, so by drugs we attempt to poison disease—for all drugs are practically poisons. The principle of their administration is almost wholly empirical. If you ask a doctor why phenacetin reduces fever, it is impossible to get beyond a metaphysical explanation. He will reply that phenacetin reduces fever by lowering the blood pressure, or something of that kind. But this merely re-states the problem. Why does phenacetin lower blood pressure? We do not know. The substitution of asepsis for antisepsis—that is, of cleanliness for disinfection—has hardly yet been perceived to be in a certain sense the greatest advance in therapeutics since Hippocrates. It probably contains the germ of future medical treatment. Hereafter we shall not try to cast out devils of disease by other disease-germs only less devilish. We shall learn enough of the causes of disease to stop them at their source, and knowledge growing from more to more, which has taught us exactly how “matter in the wrong place”—of whatever sort —is the source of all disease, will also show how matter may generally be kept in its right place.

Although comparatively little progress has been made by the curative use of [122] rays, other discoveries, of which we have even now passed the brink, will have an enormous effect on medicine and surgery. Already certain kinds of light cure rodent ulcer, one of the most hideous and terrible diseases, not by the importation of fresh substances into the body but by the modification of the tissues themselves. When radiation has been fully studied it will almost certainly be found that the sun, which is the source of practically all terrestrial activity, has been showering upon us, ever since the homogeneous vapour which was the birth-stuff of the universe aggregated itself into worlds and suns and planets, rays which are capable of correcting every sort of disease-germination and, properly used, of preventing it. The absolute deadliness of unmodified sunlight to many sorts of disease-germs is recognised already. The value of sun-baths—the exposure of the whole body, undraped or only lightly covered, to the sunlight —is already discussed in connection with anæmia, chlorosis and the early stages

of consumption. When we know just where all disease originates, and why it develops, it seems likely that sunlight and oxygen its child will prevent nearly all disease and cure whatever disease accidentally arises. In place of temporary and dangerous expedients like antiseptics, serum and corrective poisons, we shall import nothing into the human organism, but only exclude what ought to be kept [123] out, and modify into innocuousness what has found its way in.

A great part of the disease we call constitutional, as distinguished from infective, arises from food, either because the food itself is not free from disease, or because, from excess in quantity or error in choice, the food we take sets up the production of poisons in the course of digestion, and by yielding, for instance, lactic or uric acid to the blood causes rheumatism or gout, or by introducing into the stomach matter in a state of incipient decay, favours typhoid and other fevers.

When, for reasons already indicated, animal food has been eliminated from the *menu* one great source of disease will have been got rid of.

When we completely understand the nature of the infective and contagious diseases it seems well within the bounds of possibility that the systematic destruction of their germs may be carried far enough to remove them altogether from the planet.[6] We have now, even by the highly imperfect measure of [124] quarantine and a period of muzzling (from which, on no evident ground except that it would interfere with the amusements of the governing class to include them, sporting dogs were excluded), apparently banished hydrophobia from Great Britain. If it prove to be the case that just as hydrophobia cannot arise spontaneously, but requires to be “started” by the entry into the blood of an animal of an existing infection, other infective diseases require pre-existing disease before they can arise, we may get rid of them altogether. The dream may appear a wild one. But it is not wilder than the dreams of a thinker who anticipated any one of a hundred common facts of to-day must have appeared to our great-great-grandfathers.

It is, of course, not to be supposed that disease can altogether be banished from a world so highly artificial as that of the next century will be. Undoubtedly the growth of sanitary science and the knowledge of the larger facts of hygiene, which is only now beginning to dawn upon us, will have a great influence in [125] correcting some of the evils which over-civilisation at present entails. But the very progress of the art of healing will no doubt have the effect of perpetuating in a manner the existence of illness. Every forward step in medicine serves to save alive some weakling that in a less advanced civilisation would die; and these survivors, possibly propagating their species, will have weak descendants, on whom whatever possibility of disease continues to exist will certainly fasten. The discovery of means by which we can make a weak “constitution” into a strong one is perhaps the least likely of medical innovations. It would be altogether contrary to the general spirit of the times anticipated to expect that we shall have steeled our hearts to the destruction of feeble lives as dangerous to the race. We are much more likely to go on finding better means to perpetuate them: and this means that there will always be work for the doctor, though the infective fevers will have been banished from the earth. Medicine, therefore, will still aspire. But apart from what are called occupation-diseases, caused by certain manufacturing processes (of which the more deadly, as phosphorus match-making, lead-glazing of earthenware and the manufacture of enamelled iron will before long certainly be abolished), the elaborate machinery and rapid travel of the new age must needs exact a certain toll of death and mutilation. The surgeon will have more to do than the physician. Frightful [126] accidents will occur from time to time. The maim, the halt and the blind must pay the price of progress. And it is hardly possible that nervous diseases and insanity, incident to the pressure of civilisation, can be eliminated. But certainly the alleviations of all but the last, and even of that except in its extreme expression as total dementia, will have advanced to a high standard. We shall no doubt, for instance, have discovered means of so acting on the sensory system that we shall be able innocuously and temporarily to paralyse at any desired spot the nerves which transmit pain. Thus, during convalescence, the injured will suffer no discomfort except that of confinement, and our means of amusing the patient by talking machines that will read and sing to him, and the theatroscopes that will project before him moving and coloured pictures of life or the play, will make the sick bed almost a paradise.

As we have seen that, apart from the sentimental reasons which have been suggested,[7] animal and flesh foods must, for economical reasons, have been abandoned long before the end of the century, the grazing of cattle being far too expensive a method of utilising the soil, we may be quite sure that the sciences connected with agriculture will receive far greater attention than they now [127] enjoy. It will grow more important with every decade to obtain the greatest

possible tribute from the portions of land, steadily decreasing in area, which can be spared from the growing needs of the builder. Every discovery of the chemist which can be laid under contribution by the agriculturist will eagerly be seized upon. Every means which can be devised for replacing what we take from the soil will be utilised to the full: and of course the inevitable disappearance of the horse as a means of traction, and of the flocks and herds which now yield manure, and perhaps the gradual exhaustion of the minerals (as rock phosphates) from which artificial soil enrichers are prepared, will make it necessary to rearrange, on safe, economical and convenient lines, our present plans of sanitation. The insane wastefulness of draining into the sea cannot long be tolerated. Every conceivable means of conserving our mundane capital will have to be made use of. In other ways science will come to the rescue. The farmer's sufferings from the depredations of vermin of various kinds will perhaps never be much affected by invention, because all nature is so curiously interdependent that the eradication of one pest has an awkward way of intensifying some greater evil: we destroy birds and are punished by a plague of caterpillars. The accidents of climate, too, can perhaps only be obviated in a very [128]
small measure, though the science of meteorology, constantly being helped by facilities for better observation-reporting, will unquestionably help the agriculturist by giving him timely warnings. It seems hardly possible to doubt that the eccentricities of climate and the unexpected shifting of the rainy season in Manchuria during the Russo-Japanese war must have been caused by the vast atmospheric disturbances created by days and weeks of cannonading: and of course it is an old theory that heavy gun-fire "brings down the rain." Military historians say that the number of wet-day battles altogether exceeds any expectation which could have been formed without allowing for effects of this sort. When science has pondered upon the subject, and instituted in an ordered manner experiments of a kind hitherto never taken very seriously, it may very well be that some means less violent than the detonation of explosives may be discovered by the practical meteorologist for creating disturbances in the atmosphere; and while it may not be possible to prevent excessive rainfall at inconvenient times, it seems easy to conceive that when there is moisture in the atmosphere we may be able to bring it down as rain. Of course this is a very different thing from breaking up droughts: and artificial rain-making cannot in itself be anything but a momentary expedient. The effects of deforestation have [129]
for some time been observed and the plan of improving waterless areas by the contrary process is already discussed. While it seems rather a "large order" to undertake to meddle with the balance of atmospheric composition on a large scale, especially as we know so little of the conditions that even success might very possibly be attended by unforeseen and perhaps calamitous results, there is nothing intrinsically absurd in the notion that we might adopt means on a vast scale for increasing oceanic evaporation and, utilising the exact foreknowledge of winds and air currents which we shall certainly have achieved, bring moisture and rain to arid tracts or countries suffering from drought. The operation would no doubt require to be stupendous, but the next century is not going to be afraid of stupendous operations; and anticipating vast and unforeseen progress in meteorology, it would be hazardous to believe that no practical use will be made of such progress.

While our knowledge and mastery of the planet we possess, and of its forces, are being steadily advanced by scientific discovery, and the researches of the pure scientist are constantly yielding practical results at first undreamed of, it is impossible to doubt that man's knowledge of himself will make equal progress. [130]
And it is not alone the physical constitution of man that will be interrogated. Everything assists the belief that this century will be among other things the century of psychical advance. We appear to be on the verge of great discoveries concerning the human mind, and especially concerning the relation of body to consciousness. Hypnotism has only during a comparatively short time been the subject of systematic observation, even in France; but at any time during the last ten years results have been achieved which, if foreseen a century ago, would certainly have produced a widespread recrudescence of belief in witchcraft. What the developed science of a hundred years hence will be capable of would certainly be a great deal more surprising if we could foresee it to-day. It is reported from the Salpetrière Hospital that a woman, under hypnosis, has had the existence of a picture on a blank sheet of paper suggested to her with such vividness that, on the suggestion being revived at a subsequent period, even after a considerable interval, she was able to detect that the "picture" was upside down, the blank paper having been actually reversed. This phenomenon is attributed to a great accentuation of the sense of vision produced by hypnotism, it being supposed that the paper, perfectly blank on ordinary observation, had really some local irregularity of colour or surface which the [131]
sharpened vision of the subject was able, unconsciously, to utilise. What secrets in the mechanism of the senses may not this fore-shadow? Without any recourse to hypnotism, as we at present understand hypnotism, impressions have, in a number of instances sufficient to exclude all possibility of collusion or error,

been conveyed from one mind to another without the use of any of the ordinary means of communication: and it is shown in experiments seriously conducted by trained observers that the faculties of thus communicating and receiving impressions can be steadily cultivated. In other words, it would appear that human consciousness possesses some sort of emanation, and although certain "ray" experiments possibly connected with the subject have not received universal acceptance, it is evident that the future is going to enlarge considerably our knowledge of the nature of mental process. At present we know nothing—and it has been said with some rashness that we must always remain in a like ignorance—of the interval between sense and consciousness. We know how the ear receives air-vibrations, how it collects and conducts them to the auditory nerves, carefully protecting itself, by the action of beautifully ordered springs and cushions, from the effects of vibrations violent enough to be dangerous to its own integrity. But even when we have followed vibrations as far [132]
as the nerve, and recognised the subtle variation of its own substance by which the nerve conducts the impression of them to the brain, we have no inkling of the means by which the phenomenon of consciousness which we call "mind" is produced. Well, now that by suggestion alone we can with perfect precision, and without the use of any air vibration whatever, cause a hypnotised person (or even a person who has at some earlier period been hypnotised but has recovered his normal state) to hear—in his mind alone—sounds which have no objective existence, just as vividly and clearly as any sounds we can physically produce, does it seem extravagant to believe that the whole mechanism of sense, nay, the dark mind-gulf beyond mechanism too, will receive full illumination from the science of the coming time? Such a discovery would, of course, throw utterly into shadow anything we have yet learned of the nature of man. It would bring us a step nearer to the knowledge of the unknown soul of him. What secrets might it not carry with it of those mysterious co-partners, mind and body, thought and brain? With this, the noblest subject that can be proposed to the intellect of man, the science of a hundred years hence will assuredly be busy, and imagination pales before the contemplation of a notion so vast. Limited as
we are by the knowledge of our own time, we cannot even conjecture whither [133]
such discoveries might lead us. All we can affirm is that the whole outlook of man, nay, the nature of man himself, might very conceivably be changed by them, and the greatest problems of the thinker may be resolved when we eat of the fruit tendered us by this tree of the knowledge of good and evil. Perhaps the soul of man may quail before the revelations in store, fearing that in the day we
eat thereof we shall surely die. [134]

---

1 *Ante*, page 7. ↑

2 That is to say, the gases which are most difficult to liquefy, and which consequently store up most energy in liquefying, viz., hydrogen, oxygen and nitrogen, as distinguished from ammonia, carbon-dioxide, chlorine, and other gases relatively easy to liquefy. ↑

3 *The Recent Development of Physical Science.* By W. C. Whetham, F.R.S., 1904. London: John Murray. ↑

4 I do not forget that a good deal of what is on record as an account of experiments in transmutation is purely mystical writing, and that when Paracelsus and some of the French alchemists describe what appear to be chemical experiments they are in reality referring to something quite different. But the learned in these matters tell me that one of their chief difficulties arises from the fact that, contemporary with the mystics, there were other investigators who, not having the key to the occult significance of the masters' writings, really devoted themselves to research, some valuable, if accidental, results of which have come down to us and are recorded in all text-books of chemistry. ↑

5 *Ante*, page 79. ↑

6 I might have "boggled" (to use one of Mr Andrew Lang's stately colloquialisms) before this suggestion, but for a remark by Dr C. W. Saleeby, which may here be quoted, to keep me in countenance. "Malaria," he writes in *Nova Medica*, Nov. 1904, "which causes more illness than any other disease, is already obsolescent. Tuberculosis, which causes more deaths than any other disease, can be disposed of, apparently, whenever the human race, now mightily smitten with internecine strife, decides that this campaign against a common foe is worth while. It takes some seconds to realise—or begin to realise—what the extinction of tuberculosis will signify in private and hospital practice. Yet the extermination of the last tubercle bacillus is an event quite certainly hidden in the womb of time—time pregnant by science." ↑

7 *Ante*, page 34. ↑

[Contents]

CHAPTER VIII

EDUCATION A HUNDRED YEARS HENCE

Allowing, as every competent thinker must allow, a full measure of validity to the contention that social developments are matters of slow growth and gradual attainment rather than of sudden and catastrophic change; admitting that even in the sphere of scientific discovery and mechanical invention changes occur much more gradually than a cursory glance at individual achievements would suggest; recognising that many of the most remarkable changes whose arrival in the past is the only possible valid guide to anticipation of similar or kindred changes in the future; it is still a condition of such anticipation that we should take account of causes likely to be operative in altering the rate at which the world will move. To allow that social improvements generally have the air of occurring almost automatically is not to conceive that they are without cause. Neither can it be believed by anyone who has studied the history of such movements in the past, or watched them in current progress, that the rate of [135] development is everywhere and at all periods the same. There have been eras of almost complete moral, and even of almost complete mechanical, stagnation in the history of the world. There have been other eras of almost violent reformation and reconstruction. To reason as if these characteristics were arbitrarily or miraculously imposed upon the physiognomy of society, to be content with laboriously unintelligent estimation of the facts without attempting to learn anything from them of their causes, is to neglect the only important lesson which either history or observation is capable of teaching. When, therefore, an enormous acceleration in a rate of progress already unprecedented in the records of society has been predicted for the next hundred years of human history, it is evident that this anticipation must have been based upon some estimate of forces calculated to be operative in producing acceleration.

So far as scientific or material progress is concerned, it is obvious enough that we shall move forward with increasing *momentum*, because every discovery and every invention tends automatically to facilitate fresh attainment, and the very growth of population must act in the same way, as must also the struggle for existence. As there are every year more men and women working on scientific [136] research and on mechanical invention, the results must be progressively greater every year; and as the rewards of success are increased by the growing demand resulting from a growing population, it is evident that the incentives to industry in this respect are proportionately liable to increase. But the ethical progress of the world is actuated by forces entirely different, and what makes for mechanical improvement may very easily be conceived—in fact has actually been conceived by one rather conspicuous prophet—to operate adversely upon the moral future of the race.

No secret, however, has been made of the present writer’s belief that our descendants a hundred years hence will have made moral progress quite as remarkable as the mechanical progress of which the anticipation is likely to be contested by no reasonably imaginative observer. This ethical improvement, gradual, and momentarily imperceptible as it may be, necessarily has causes which must now, however tentatively and however cursorily, be examined.

That these causes will be powerful, continuous in action and based upon the fundamentals of human character, is evident. That in their operation they will be opposed by other influences not less easy to foresee is equally manifest. What we have to precognise are the net results likely to be achieved by the interaction [137] of opposing forces, of which those tending to improvement are confidently believed the stronger.

The most powerful of all moral influences in the future will undoubtedly be the reform of education, not merely by the improvement of its methods in various departments, but also, and with much more importance, in the general spirit with which its objects will be conceived. But in order to affirm that this reform will occur, we must first demonstrate that the grounds upon which it is anticipated are adequate. We must, in the terms of the formula above proposed, be satisfied that they are in harmony with the fundamentals of human character.

If there be any human motive of which something approaching universality can be predicted—*quod semper, quod ubique, quod ab omnibus*—it is that of parental solicitude. No progenitor of children, however little amenable to high aspirations, is wholly free from the wish that his offspring shall grow up to be wiser, stronger, better, more prosperous than himself. The innate hopefulness of the race expressed in the arid comment that, in his own estimation, “man never is, but always to be blest,” is often discouraged by the time a man’s children are beginning to grow up, especially in these days of late marriage and deferred [138] parenthood. Realising, as most of us have realised only too acutely by the time we are forty, that we have more or less failed in the ambitions which seemed so easy of future attainment when we were twenty-five, aspiration begins to cast a

golden light upon the career of our children, and it is to the successes and the fame of our first-born that we look for consolation in the failure which, for ourselves, we no longer hope to evade. Romance, celebrity, even perhaps worldly reward, we can no longer expect for ourselves; but these dear hands that a little time ago we held while the first tottering steps of babyhood were being tried, shall return to us hereafter with the laurel in them that we have never plucked. Perhaps we shall not live to see it on our child's brow, but what of that? Our confident prevision of this glory is what we console ourselves withal: this, though we hardly know it, is our True Romance:—

"The comfortress of unsuccess,
To bid the dead good-night."

Neither in the material and the intellectual spheres alone do we aspire more nobly for our children than for ourselves. Not success and not fame limit our demand of Fate, that she repair in our children the injustice of which we ourselves cease to complain. We want them to be better men and women than we have been. To put the thing on its lowest ground (and nothing but the lowest [139] motives ever seem to be accorded the smallest validity by the more conspicuous among recent vaticinators of human action) it behoves us to make the best we can of our children's morals, if we are presently in old age likely to be dependant upon them. But for those who, like Malvolio, "think nobly of the soul," it is sufficient to rely upon the manifested predilection of every parent in order to be convinced that the education of the future will be moralised as well as rationalised through the natural emotions of man. Only the dullest and most turgid imagination will consent to believe that the horrible conditions of competitive struggle will be permitted to foster only the lower faculties, as greed, selfishness, unscrupulous cunning and subtle evasiveness, at the expense of all the finer characteristics of man. There is no cynic so base as would deliberately seek the fortune of his sons in the inculcation of chicane. Struggle must sharpen all our intellects as life grows yearly more difficult, but one by-product of this attrition will be the increased morality with which the education of each generation successively arising will be conceived.

Pausing for a moment to remark, in regard to the methods in detail by which the improvement of education will most likely be sought, that to foresee what is probable is not necessarily to endorse it as ideal, and that the object of this book [140] is not to formulate Utopia, but to predict the consequences implied by existing forces after the latter have been during a stated time in operation; and admitting that no reform ever practised within the recorded history of man has been without drawbacks inherent in its own constitution, it may be said at once that the work of instruction is capable of mechanical and instrumental improvement not less considerable than any other labour to be undertaken by ourselves and our successors. Even within a lifetime's limits all sorts of appliances for assisting the mind of the learner to apprehend the facts sought to be learnt have been invented, and our children, as we all know, are much more easily taught than we were ourselves. The *laudator temporis acti* is always pretty ready to depreciate the value of these improvements, and perhaps it is natural enough in most of us to find it difficult to believe that any plan of teaching can be better for our children than the one which produced results so pleasingly exemplified by ourselves. But at all events, it will be generally, if a little grudgingly, admitted that any form of *apparatus* capable of saving time and trouble in teaching is capable of being ranked as an improvement. Unquestionably appliances having this object will be constantly invented and used during the present century. For instance, it is hardly conceivable that something less than perfection in the [141] teaching of a foreign pronunciation by the mouth of the best teacher who can be hired for the work will content us, when perfected talking-machines presently enable us to give examples of the still better speech. Evidently a boy would learn to speak French with a purer accent by listening to a phonograph which, freed of the present tin-trumpet *timbre* and whirring, repeated the speech of the *Comédie Française*, than by hearing an ordinary master read aloud. To say this is not to suggest that professors of languages will be dispensed with; but their teaching can be thus supplemented. Similarly the use of magic-lanterns and kinetoscopic pictures is capable of improving greatly upon the blackboard and chalk still used. But the plan of education in itself is so greatly more important to be foreseen than the mechanism by which the details can be worked out, and the latter can with so very little difficulty be imagined by anyone interested in them, that the reader shall not be troubled with any discussion of this branch of the subject, but will rather be asked to concentrate his attention upon the moral and intellectual aspects of it.

Conceiving, what I have all along endeavoured to show is reasonable to conceive, that all social institutions will be governed with ever-increasing intelligence and rationality as time goes on, and that they could not possibly be [142] tolerated otherwise, it is easy to see that education as hitherto and at present

practised would never do for our grandchildren, let alone for our more advanced descendants a hundred years hence. To begin with, parents in that era would certainly consider it hopelessly and criminally unethical, if not actively immoral. Projects of reform, especially in morals, are often dismissed as visionary, because it is pointed out that no changes can take place in the social order which do not appeal directly to the self-interest of the individual. In other words, there is no mainspring of social action except aggregated selfishness. Without delaying to examine the validity of the belief, it may be said at once that its full acceptance is no obstacle to the admission of the whole case on which is founded the belief that education will be conducted chiefly with a view to its moral effect at the period I am attempting to describe. The very circumstances on which writers rely, who predict the ethical deterioration of man, are those which make the ethical reform of education inevitable. Precisely in proportion as competition tends to harden and debase, there will arise the unavoidable necessity for deliberate counter-action of this tendency, resulting, as the effect of the measures necessitated becomes felt, in the changes of commercial and political conditions already[1] predicted. If we consider at all thoughtfully the necessities of [143]
a hundred years hence, it is not difficult to foresee the general lines upon which they are likely to be met—lines not necessary to be accepted as representing a perfect or ideal state, but broadly indicating the methods which the effect of visible tendencies will by that time demand of a practical people.

Here, as everywhere else, the only safe guidance as to the practice of the future must be sought in the tendencies of the present. The tendency most forcibly in evidence during recent times is that in favour of softening the former acerbities of education. Whereas the schoolhouse of half a century ago was something like a penitentiary in the way it was conducted, the schoolhouse of to-day is managed as much like a place of recreation as it possibly can be. At all events, recreation is at least as assiduously cultivated as study, and the candidate for an under-mastership who has a good cricket record will find employment a good deal more easily than one with a double-first. If there be any complaint of public and other upper-class schools at the present time—and there is room for plenty of complaint—it is more often that games are too much insisted upon than that brains are overtaxed. There is a visible reaction in regard to this; but it is not to be regarded as a reaction in favour of the old draconic methods. On the contrary, “the growing sentimentality of the age” steadily demands amenity of [144]
treatment for the fortunate offspring of the twentieth century. The late James Payn, sanest and kindliest of men, was never tired of denouncing what he called the barbarous and indecent corporal punishments of Eton. He used to say that if a picture of an Eton boy being birched were published in the *Illustrated London News* no boy would ever be birched again, and I believe that he tried to get either Mr Latey or Mr Shorter to insert such a picture. Be this as it may, what he said was perfectly true. I shall have something to say presently on this same question of school discipline: meantime it may with perfect safety be predicted of the master’s cane a hundred years hence that it will be found only in museums, and (whether rightly or wrongly) be regarded as a relic of degrading barbarism. One reason why corporal punishment will have to be abolished is that boys and girls will certainly be educated together instead of apart. As we could hardly cane girls (and it would be of very little use if we could) we shall assuredly have to get on without caning their masculine schoolmates.

I suppose that few will contest the statement that the religious teaching practised in schools at the present time not only has very little to do with the question of morality but tends distinctly, except in Roman Catholic seminaries and some few non-conforming colleges where a special kind of education is [145]
given, to have less and less connection therewith. Whatever moral effect “schooling” has upon the adolescent is recognisably and recognisedly due to the “tone” of the school itself, that is, to public opinion among the taught, and only indirectly to anything which emanates from the teachers. Assuredly a proficient knowledge of Biblical history has no ethical effect greater than a proficient knowledge of Greek mythology (at least of so much of it as is properly selected for school use), and we have it on the authority of Mr E. H. Cooper, a very entertaining if not particularly sound writer on children, that even “Confirmation” classes are by no means uniform in promoting a religious sentiment in boys.[2]

The moral advantages of education, therefore, tend to be found in the effect of public opinion and the general “tone” of a school. It is discovered in practice that direct moral inculcation is not very successful. It is to be assumed that the ingenuity of future pædagogues will be devoted to the discovery of the best ways in which indirect moral influence can be cultivated. In view of the high importance which will evidently be attached to such influence, we may take it for granted that it is not in connection with any single branch of tuition that it will [146]
be sought for, but that it will be root and branch of the whole scheme of educational work. One very powerful assistance will be rendered to this by the

system of co-education.

It is quite certain that boys and girls will always be educated together a hundred years hence. The tendency of the sexes to become less different intellectually is a known fact of sociology.[3] It carries with it an inevitable tendency to dispense with the separation of the sexes in education. Wherever co-education has been tried its effects have been excellent. The presence of female students in medical colleges has had a markedly reformative influence on the manners and moral tone of medical student life, not long ago the *opprobrium* of civilisation. The advantages to a parent of being able to send his sons and his daughters to one place of instruction, and to the children themselves of the companionship and maintenance of family relations thus afforded, are equally obvious. In one other respect, which can only be touched upon lightly here, the system of joint education must be enormously beneficial, at all events to boys, and greatly beneficial to their sisters. Every competent schoolmaster is acquainted with special difficulties liable to arise about the age of puberty. The monastic seclusion of the schoolboy (like that of the single men in barracks who, [147] according to Mr Kipling, “don’t grow into plaster saints”), and the glamorous mystery surrounding the opposite sex, tend to accentuate these difficulties. The habit of constant association with girls who are not his sisters relieves a boy of the exaggerated sense of sexual isolation. A boy always brought up with girls is not liable to be constantly thinking about girlhood: and in practical experience many people are aware that boys who have had the opportunity of frequent association with the girl friends of their sisters grow into purer-minded and more chivalrous men, than those who have lacked this advantage; and the thoughtful future will assuredly cultivate the system which affords it. It is quite evident, in addition, that the fatuous and unreasonable mystery with which for centuries the natural facts most liable to be important in adult life have been made inevitable subjects of unholy curiosity, will be swept away, to the great enhancement of sane and clean thought in girls as well as in boys, in young women even more than in young men: while the tragedies which knowledge can avert, hidden horrors of our own day that we are too sentimental to envisage, but that everyone must now and then have met with a hint of, will happily exist no more, or occur but rarely.

Among the indirect considerations which will assist us to the conclusion that co- [148] education is the best, will be the endeavour, everywhere apparent, to make the work of teaching agreeable to the taught. This is the keynote of the tendencies whose fruition we may look for at the end of this century. It will have been recognised that to conceive of education as a process of forcing knowledge into unwilling memories is to place the greatest possible obstacle in the way of success. Even the child whose natural faculties are joyously receptive is bound to resist more or less unconsciously teaching that is conducted on the assumption that he won’t learn if he can possibly help it. The worst child in the class sets the tone of the rest. The boy who can most successfully evade real learning, and trick his instructors well enough to escape punishment, is the hero of the place. Nothing could be much worse for morality. Public opinion in schools, useful as it is in other respects, is everywhere harmful in this particular. The pædagogue of the future will proceed on a method far more rational.

In its essence it is quite easy to see what method the tendency of thought is likely to develop. Here, as in so many other places, etymology can help us. If we could think, whenever we talk or make plans concerning the subject, of what education really means—a drawing-out of the natural faculties of the instructed [149] —we should always conceive more rationally of the work. There is no animal whose greatest pleasures are derived from anything else than the exercise of its faculties. Our dog, whether he jumps and tears about in glee as we take him for a walk, or sits happily by our side, his head on our knees, his wistful eyes scrutinising our face, sympathetic with every emotion, illustrates this fact. In the one case he is exercising the natural faculties of speed and vigorous agility; in the latter, the acquired and inherited faculties of mental comprehension. Shut him up in a room alone, or with an unfriendly person, and he is miserable or goes to sleep, providently accumulating energy for the next opportunity of exercise. What I am not afraid to call his mental pleasures are not less keen, if I know anything at all of dogs (who have loved many of them) than his physical pleasures; and I never had a dog in my life who would not cheerfully neglect his food to come indoors and sit with me in my library. Are children’s brains less energetic, less capable of yielding pleasure to their small proprietors than the brains of a dog? One of the mistakes that we are already beginning to find out (and consequently one of those which we may expect to have amended long before this time next century) is the tacit assumption that games are richer in pleasure than study. It isn’t the boys and girls themselves that give this tincture [150] to school-government. Plenty of them really prefer books before balls, until they go to school; where we at once proceed to show them that we regard cricket as a sort of alleviation of their hard lot, and with football console them for their

French lessons, and redress arithmetic by “rounders.” There is no reason why this should lead to any neglect of athletics. Only, athletics will be properly treated as only one of the joys of a school life that will be fulfilled of other pleasures equally absorbing.

The method which will make education agreeable instead of repulsive is part and parcel of the system on which education will be conducted, and it is only incidentally that it will subserve the concurrent sentimental tenderness which finds expression to-day in unwise use of games in themselves highly beneficial, just as elsewhere it finds expression by cultivating gluttony.[4] [151]

The true object of instruction being to show children how to think, the intellectual exercise of thinking will be always found, as it has already long ago been found where this highly unusual method has been experimented with, to give keen pleasure to the instructed.[5]

A great deal that has been said both in regard to the excessive and in part exclusive training of memory, and in regard to the propriety of reversing the general order of tuition by proceeding from concrete facts to generalised theories instead of beginning with generalisations and illustrating these by specific instances, is, for practical reasons, hardly likely to be acted upon by our descendants. To begin with, the culture of memory is not in itself an abuse; on the contrary, it is a highly necessary feature of education. What is an abuse is the substitution of remembrance for ratiocination. Teachers in the future will be [152] more anxious to develop the mind from within than to graft information upon it from without. But they certainly will foster the faculty called memory—or to speak more exactly, they will refrain from destroying that faculty in the way that present-day education destroys it. For as a matter of fact, the memory of a young child who has never been taught anything is invariably good, being both copious and retentive. One often hears it said that children quickly forget; but it is also the case that they very quickly remember again. An Anglo-Indian friend told me a somewhat pleasing anecdote which (though of course it does not prove) illustrates a general fact of which anyone can find proofs for himself by a little observation. Having taken home for a year’s leave his children, reared, like all other English children in India, amid native servants, and speaking quite correct Urdu instead of the barbarous dog-Hindustani which suffices for their elders, he was under the impression, when the “wicked day of destiny” arrived, and the family had to return from refreshment in England to labour in India, that they had completely forgotten the soft vernacular speech which formerly came much more easily from them than English. And his belief was confirmed when, the children having been promptly carried off by the adoring servants, an aged [153] bearer came to him almost in tears, complaining that “Baba Sahib” could not understand him. But the next day all the little people were chattering Urdu as easily as ever. The fact is that a child’s mind concentrates itself intensely upon whatever subject interests at a given moment, and neglects everything else. By our present method of education we do all that the most malignant ingenuity could devise to destroy both this invaluable gift of mental concentration and the accompanying faculty of memory. The new teaching will industriously cultivate both. There is no doubt that the premature and unskilful use of books as implements of instruction is extremely bad for the memory; and the employment of distasteful and inconsiderate methods of teaching is equally destructive of concentration. A hundred years hence, when it has been recognised that the easiest way to teach anything is to find out how a child can be made to *want* to learn about it, there will be no difficulty in securing attention. Children’s minds do not, as most people suppose, tire very easily. On the contrary, they are with great difficulty fatigued. Anyone who has been so imprudent as to embark on a course of tale-telling near bedtime or near a meal hour, knows that the little people are almost incapable of being satiated. And the descendants of these little [154] people will be just as insatiable of being taught, because we shall have found out how to make them want to be taught.

Herein is the whole keynote of the education of the future, moral as well as intellectual. We shall no longer treat good behaviour as if it were an artificial and unnatural abstinence from the true desires of the child or of man. We shall arrange that people, young and old, may *wish* to act rightly. The point of reform will be shifted. At present, all kinds of morality are approached on the assumption that it is requisite to persuade to an unwilling abstinence from vice, and that when the desires of the wicked have been curbed into a sort of ascetic abstemiousness prompted by fear of punishment, whether overt or implicit, a moral feat has been performed. The new morality will only be content when the subject of it would not sin if you asked him to. His moral sense will have been stoically cultivated. Obedience and the law of Thou-shalt-not will be dethroned. This law represents in the education of to-day the highest form of youthful virtue. Yet mere obedience, even where it has always been considered most valuable, namely, where it takes the shape of military discipline, has proved an

utter failure; the last two great wars proved the fact. If the lamentable doggerel which enshrines the applauded self-immolation of Casabianca have not [155] fortunately been forgotten altogether a hundred years hence, it will assuredly be quoted only as a monumental example of old-fashioned fat-headedness, even more offensive to the sense of reason than the verses themselves are to the sense of poetical taste. The Casabiancas of the next century will have been allowed—I do not say taught, because children don't need to be taught this—to think for themselves. And no great exertion will have been required. On the contrary, it is impossible to listen for many hours to what goes on in a modern school without being impressed with the ingenious arrangements that are required in order to prevent boys and girls from thinking for themselves. The notion of their doing so seems as offensive to the present race of schoolmasters as, to Mr W. S. Gilbert's sentinel,—

... "the prospect of a lot
Of dull M.P.s in close proximity
All thinking for themselves."

However, the purpose of this dissertation is not so much to point out the errors of the present as to indicate the improvements of the future: and we may be sure that the prime virtues of the scholar a hundred years hence will be reasonableness and ingenuity, not dull obedience. Thus right conduct will be inculcated, not as an expression of obedience but as the only reasonable way of [156] behaving, and the incentive to right action will be that it is also sensible action. The test of all conduct will be its results. Whatever does harm to self and others will be obviously wrong; what does good or is indifferent will be right. The standard of these things that has to be accepted all through life will be set up from the first, an enormous improvement upon the vicious system of exacting irrational obedience for the first eighteen or twenty-one years of life, and expecting this to produce reasonable self-government thereafter, which is so fruitful in the wild-oats of early adulthood. The latter could hardly be more ingeniously cultivated.

It would be extremely rash to conclude that books will not be employed as implements of instruction: but it is quite certain that they will not be employed as they now are, chiefly for the purpose of saving a schoolmaster the trouble of making his pupils think for themselves: and incidentally the abolition of this mistake will react most usefully upon memory, itself, with the exception of reasoning power, the most valuable of mental faculties. Oral teaching, accompanied in every possible place by practical illustration, will store and build up memory (as it always does when we employ it now) far more rapidly than anything else. The delight which this method of teaching confers upon the taught is enhanced by the avidity with which such subjects as chemistry, [157] practical mechanics, and even geometry when taught with apparatus instead of with figures, are received by children of every growth.

To imagine that children can ever invariably be controlled without some sort of punishments would, no doubt, be thought ridiculous Utopianism. But the greatest part of the necessity for correction will have disappeared automatically when the greatest source of youthful misbehaviour—restless superfluous activity —has been deviated into channels which will utilise it. Children whisper, fidget, or make a noise in class, simply because they are bored by the dulness of mechanical processes which we persistently use in seeking to cram information into their minds from without instead of exercising the reason that dwells within. As the education of future generations will assuredly have to be a great deal more copious than what we are content with now, it is fortunate that this reform will also be a great economiser of time. Every schoolmaster knows that an interested class progresses far more rapidly than one that is bored and consequently inattentive; and the same boy who is alive to the subtlest implications of the highly complex law of cricket, will often be found utterly incapable of applying the very simple definitions at the beginning of Euclid I., for the simple reason that cricket interests him, while Euclid doesn't. This is not [158] because the latter is "harder" than cricket, nor yet because cricket is an outdoor pleasure, while Euclid is (or rather should be) an indoor one. It is because in cricket we get him into the habit of reasoning for himself, while in geometry we only too frequently fail to do what Euclid is supposed to help us to do.

Nevertheless, after making every allowance for reduced temptations to misbehaviour resulting from the absorption of redundant mental activity, it is still to be feared that disciplinary punishment will sometimes be required. This will certainly not be corporal. The uncivilised and degrading expedient of purposely-inflicted pain is visibly on its last legs. There are still reactionary people who write to the papers in order to explain that the use of scholastic torture makes for manliness; they must be presumed to think that it would be on the whole rather good for boys to be birched at intervals, like Charles Lamb, not

as a punishment, but to keep them humble. But the next century will have outgrown such ideas. The commonest of present-day alternatives—“lines”—is equally obsolescent, the evil effect of this upon handwriting and health being already recognised. “Keeping-in” is probably the most injurious of all forms of correction, but it is only too consistent with our present plans of education to treat extra tuition as a punishment—the best possible way to make all teaching [159] hated. It is much more likely that the schoolmaster of a hundred years hence will punish refractory and inattentive pupils by keeping-out instead of keeping-in. The most detested of all chastisements will be exclusion from the pleasant exercise of learning. During the Russo-Japanese War newspaper readers noted with saturnine amusement that the artillery regiment which in St Petersburg had the maladroitness to fire a salute with a shotted gun and very nearly kill the Czar thereby, was punished by being sent to the front; while at the beginning of hostilities the exemplary conduct of the enormous Japanese army crowded in Tokio for transport was accounted for by the threat that any soldier who misbehaved himself would be left at home. It is the Japanese and not the Russian ideal of discipline that will animate the schools of the future. We shall no doubt emulate the reserve of the Confessor in the *Bab Ballads*; old heads upon young shoulders we shall not expect to find; and we shall punish when punish we must. Future advantage, even for oneself, is seldom a very powerful motive with the young of any age. But present deprivation is a chastisement easily and keenly comprehended: and the loss of intellectual status involved in exclusion from a lesson will no doubt supplement the immediate boredom very distasteful to an [160] agile mind, which is the more immediate effect. I imagine that the naughty child of the future will be punished by being shut up in a well-ventilated and well-lighted but perfectly empty room, with pockets equally empty. At the same time, by treating deprivation of it as an evident chastisement, the desirable nature of instruction will be in a very useful manner impressed upon the infant mind. Young persons much more easily believe what they find to be treated as a matter of course than what is laboriously impressed upon them by explicit inculcation. Thus the effect of rationalised education will not be, as one critic has rather rashly supposed, to make children little prigs. On the contrary, its effect will be to make them naturally and happily interested little learners—a very different thing. One of the very greatest improvements in the rationalised education will precisely be that it cannot possibly foster the awful priggishness which is a very common result of our own methods.

It has been said already that the education of the happy future will have to be much more copious than anything that is at all common nowadays. The nature of its extensions will next be discussed.

One of the most important and most moral objects of education is to impress upon the mind, as a principle not to be evaded by any contrivance whatever, the [161] fact that fixed causes (among which are personal acts of any kind) produce fixed effects—that there is no circumstance which, with sufficient knowledge, could not be traced back to pre-existing causative circumstance. No department of knowledge tends so intimately to give to the mind the impress of this fact in the course of its acquisition as physical science. And as a proficient acquaintance with physical science will be necessary to a great many occupations, when work of all kinds is performed in the intelligent manner in which we have seen reason to be convinced that it will be performed a hundred years hence, there will be a greater practical need for scientific instruction than there is now, though science is disgracefully neglected even with regard to our present necessities. As education is to be given with the object of fitting children for life as well as developing their minds, the science of health will certainly be taught; but all physical sciences will have their place on the curriculum even at the early stages, because it will have been recognised that the habit of mind which is formed by studies of this kind is not only very necessary to an efficient working life, but also very helpful as a basis of practical culture. It may be conceived that a thorough “grounding” in physical science will be thought as much an essential of all education in the future as a really good training in Latin and Greek used to [162] be considered in the past, and as many of us would like it to be considered now. Fifty years ago we believed that no true education could be given in preparation for ordinary life without as much Latin as was necessary in order to be able to write a fair copy of elegiacs, and as much Greek as was necessary in order to read Homer with comfort. A hundred years hence we shall think it necessary to be able to read a scientific thesis comprehendingly.

At a later period of school life, but still early in it, specialised instruction will no doubt be begun; and subjects connected with the evident tendency of a boy’s or a girl’s mind, and with the opportunities likely to be presented to either in forming a career, will be developed to the exclusion of subjects less immediately subservient to the object of making a useful citizen of him or her in some particular profession or branch of industry. Practical demonstrations of science, instead of being reserved for the more advanced stages of tuition, will, on the

contrary, form the groundwork; and children will be required to work practically themselves instead of merely sitting still to watch the performances (in this case apt to be regarded with little more respect than scholastic conjuring tricks) of a teacher. They will be invited to deduce laws for themselves from what occurs in practice, and where they deduce wrong ones they will not be arbitrarily [163] corrected, but assisted to make further experiments which will show where the mistake occurs, until at last the correct generalisation is reached. Only after a considerable course of practical work will they be entrusted with books in which great generalisations are to be found ready made, and these books will always be regarded as a sort of *pis aller*—a time-saving contrivance to be employed as a regrettable alternative, because it would take too long to work everything out by the golden implement of individual observation. The habit of mind thus cultivated, and the manual dexterity thus obtained, will be of priceless practical worth in after-life; and with what rapturous enjoyment will our descendants acquire knowledge which at present we force upon our children with stripes!

Along with the physical sciences mathematics will have to be greatly cultivated. But mathematics, when perceived to be ancillary to the more immediately delightful work of concrete and experimental science, will lose much terror. Many mathematical operations can moreover be demonstrated experimentally, and no opportunity of thus demonstrating them will be lost. Rightly treated, mathematics need never be dull. According to my own experience and all that I have been able to gather from the recollections of others, algebra (for instance) is never abhorred when a proper care is taken to make use of its call upon the [164] reasoning faculties; and the art of evoking this use will have been carefully developed by the educational specialists who alone will be permitted to direct so delicate and important a task as the training of the young. For school teachers will not be merely more or less erudite people employed to dispense their learning: they will be men and women who have undergone long and careful instruction in the art of pædagogy studied as a specialised faculty in itself.

After mathematics, no doubt languages occupy chief place in the righteous abhorrence of present-day school-children. I say righteous abhorrence with intention, because this department of useful learning always has the air of being purposely planned in order to secure the maximum of execration accompanied by the minimum of advantage. What languages will be taught a hundred years hence, and in what manner will they be instilled into the children of our great-great-grand-children? Any opinions upon a controversy so recent as that which a few months ago raged about the question of compulsory Greek must be more or less untrustworthy. Every man will take the view of the future of the dead languages (so called, as someone[6] sanguinely remarked, because they can never die) determined by his own view as to whether proficiency in the tongues of [165] Hellas and of Rome ought to be maintained in his own day. But for a reason probably admitting of very little controversy, it is at all events permissible to believe that the classical languages will at least not have to meet the urgent competition of a variety of current languages as subjects of useful learning. This reason is to be found in the evident tendency of a paramount tongue to extrude other tongues from practical employment in commerce; and commerce, more than anything else, will of course always determine the question of modern language study. Provided that the race which becomes paramount in the markets of the world during the course of this century possesses a reasonably philosophical, copious, precise language, and one fairly easy to acquire, it is likely that for commercial purposes it will become (to use an incorrect, but not conveniently replaceable term) universal. To the facile remark that every nation considers its own speech easy enough for foreigners to acquire, and much more satisfactory in the other respects named than any tongue which it is invited to give itself the trouble of learning, may be opposed the reply that peoples do in fact recognise, where it exists, the unsatisfactory nature of their own speech. For example, nearly every Russian whom one meets in polite or commercial circles speaks at least French, and often speaks it admirably; while in Norway, though the Scandinavian languages are none of them anything like so difficult to [166] learn as Russian, practically everyone speaks English. The case of Japan is even more illustrative; for apart from the fact that enough of some European language to enable one to travel with perfect comfort is always to be found current in the Mikado's empire, it is the case that even for domestic use the Japanese have a popular language, printed in newspapers and in some books alongside of the more literary Chinese idæographs, and frequently used to elucidate the latter.[7]

Thus it is quite easy to believe that the paramount language of commerce will impose itself upon at least the business population of the whole world. As the substitution of modern languages for the dead languages is advocated solely on utilitarian grounds, which practically means that it is advocated because to know [167] a couple or more foreign languages is useful in trade; and as no one has ever seriously pretended that French, German or any other modern language can

compare with Greek and Latin as intellectual gymnastics and as training in the precise expression of one's thoughts; it may be assumed that, on the ground of competitive usefulness, the latter will not need to be dispensed with. Whether the study of them will be abandoned on the ground that the time they require can be better employed in some study other than that of languages is another and more difficult question, the resolution of which depends upon the view we take of the literary tendencies probably existing after another century. If we believe that our descendants will have effected so many improvements in the shape of labour-saving contrivances as to afford a large increase of leisure for everyone, as compared with what the present time enjoys, we shall probably [168] expect the languages which enshrine the greatest literature of the world to remain a subject of study. If we believe in the growing intellectuality of man, we shall be strengthened in the same expectation. If, on the other hand, we think that the progress of our race will exhibit itself in the shape of greedy utilitarianism and of idiotic and self-destructive immorality, we shall naturally conclude that no one will be fool enough to trouble himself with Homer or the Oresteian trilogy, the laments of Sappho or the philosophy of Plato. Seeing what great men have taken this somewhat despondent view of the future, it would perhaps be immodest to express any other opinion on the subject.

In any event, we may safely believe that whatever languages are taught will not be handled in the manner now current. Mr Andrew Lang has, in more than one place, described his own "floundering" into Homer—a plunge certainly attended with the happiest results. A method of teaching alien languages which founds itself upon an imitation of the natural picking-up of the mother tongue by babies has been suggested, perhaps without sufficient consideration of the vast expenditure of time necessary to the process, and certainly without sufficient allowance for the fact that it would be impossible to afford the same incessant practice which enables children to learn the language of their fathers and [169] mothers so easily. But there is no reason why we should perpetuate the discouraging preponderance of grammatical and etymological study which caused the late H. D. Traill to say of certain professors that

> "They heard with a smile of the flowers of style
> For they recognised nothing but roots!"

In fact, here as elsewhere, the persistent demand that schooling be made agreeable will have the best possible effect in facilitating instruction. It is as literature that all languages—including the native language of the scholars—will be taught; and they will be taught far more easily than we have any example to assist us in imagining. Where a foreign language pronounced with a different accent and intonation from that of the learner is studied, no doubt (as already mentioned) talking machines will be employed: and in addition, pupils will be required to read and speak the language aloud on all possible occasions, in order to exercise the organs of speech in the alien manner.[8] [170]

It is a trite saying, and one that need not be dwelt upon here, that history ought not to be taught as if its sole purpose were to store the memory with the deeds and misdeeds of kings and the progress of various wars. It will certainly be studied hereafter as a vast lesson in sociology and politics, as an illustration of the science of human dynamics. It is perhaps not superfluous to remark that brilliant examples of the new historiography have shown that the difference is not, in its result, so great as some critics imagine. But the deductions from the facts of history are the important matter: and the way in which history will be used a hundred years hence will be in instructing the future governors of the world how to use their citizenship wisely. Among other things expected of the schoolmaster of the future will be that he implant in his scholars an ardent desire to do their part in determining the polity of the state they live in, and the sacred duty of the ballot will certainly be taught with relation to whatever methods of utilising the popular vote may by that time have become current.

Moreover, history, like languages, is capable of being taught as literature; and the protest against the prevalent notion that high civilisation involves the decadence of beauty in any form implies belief in all the arts as subjects of cultivation in the schools of the future. It need not be supposed that the unreasonable waste of time entailed by the present method of teaching such a [171] subject as drawing, and our curious neglect of sculpture and modelling, will be perpetuated. As we can already see the dawn of new ideas on both these subjects the tendency of the future in regard to them is not difficult to conceive, nor need space be consumed in discussing them in detail. Literature and poetry (the latter, I need hardly say, no longer made merely hateful as the subject of the fatuous torture called "learning by heart") with *belles-lettres*, drawing, painting, and sculpture, will no doubt be taught in an elementary way to all children, and the study of them developed further where a natural appetite demands it. In reply to the very natural question, "How can an art be taught?" it is only needful

to say that minds exercised by being made to think about such subjects, are quite certain to exhibit special predilections in one place and special aversions in another, and that the ascertainment of these predilections and aversions will everywhere be made the subject of painstaking thought. While nobody seriously pretends nowadays that a taste for literature or the arts can be inoculated upon a child's understanding, I imagine that few will question the belief that a natural bent for any one of them can be assisted in its development, and that taste, while it is incapable of being artificially implanted, certainly is susceptible of being [172] guided and assisted. The defect of routine teaching in æsthetics at present is the defect of all our systems of education. We try to do a scholar's thinking for him. We laboriously show him how to use a pencil and how to copy drawings and pictures; and sometimes (though this kind of instruction is usually retailed by the ingenious writers who endeavour to instruct the adult public through the Press) we even go to the trouble of telling him the kind of pictures he ought to admire (usually forgetting that in the house of Art there are many mansions, and that a disgust for the early Dutch masters does not necessarily imply an incapacity for appreciating Velasquez); but, whether in adolescence or maturity, we never seem to arrive at the point of trying to get people to think critically for themselves. We shall reform altogether the processes of artistic education in the course of this century.

The training of eye and hand will certainly not be neglected. If only because learning any kind of handicraft gives the keenest enjoyment to children, we may be sure that manual instruction will be given, and that the effect of it will be of great value, not only recreative but also practical. Our mechanics will not have to inaugurate the wage-earning period of their lives by the elementary acquisition of the use of tools. Their future occupation will have been foreseen, and both by scientific understanding of the processes they are to subserve, and [173] by manual practice of the exact work they are to perform, they will be prepared for intelligent craftsmanship; the glorious fact that real anxiety to find out the best possible method of attaining the best possible results makes every craft, however humble, not merely delightful but also noble, being automatically grasped, so that work, like learning, will be a thing of joy and a source, to the worker, of lifelong self-respect.

Thus in every department of education the result of the training administered intelligently, and with almost infinite long-sightedness and subtlety during school-days, will be to form character, not by repression of any natural predilection, but by cultivation of mental and moral impulses to good. We shall never be content with an obedient abstention from misconduct, but shall unrestingly contrive that the *desire* to act rightly as well as wisely be implanted in the mind, until wisdom, righteousness and forethought have been stamped upon the character with so indelible an imprint that it would do violence to the whole contour of the mind to act in defiance of them. A people thus trained will be capable of all the reforms predicted of society a hundred years hence. Not by any of the unimaginable cataclysms by which dreamers have expected Utopia to be established, ready-made, on a basis of unreformed obedience to the will of [174] fantastic lawgivers, but by the steady growth of national morality will progress,

> "Moving as beauteous order that controls
> With growing sway the growing life of man,"

establish, on the basis of a perfect harmony between the nature of the units and the institutions of society, the rationalised, moralised, and still progressive state of the world looked for by all who contemplate logically and with ordered faith the capabilities of their kind a hundred years hence. [175]

---

1 *Ante*, Chapter III. ↑

2 *The Twentieth Century Child.* Chapter III. ↑

3 Spencer: *Study of Sociology.* Chapter XV. ↑

4 Having properly decided that it is well for children to be fed plainly while at school, parents take the greatest pleasure in alleviating this plainness by "tuck baskets" during term, and the most wicked and immoral palate-tickling during holidays. Indeed an excessive appetite seems to be regarded even by quite sensible people as rather an ornament to the juvenile character. Mr Cooper, whose charming book, *The Twentieth Century Child*, has already been referred to, describes with what I am afraid is approval the incident of a boy whom he brought away from school for a pleasure-trip just after lunch, and who cheerfully devoured a second lunch in the company of his friend. Assuredly our descendants will make no such mistakes as this. ↑

5 Tyndall "On the Importance of the Study of Physics as a Branch of Education," a lecture at the Royal Institution: quoted by Herbert Spencer in his *Education, Intellectual, Moral and Physical*, a work which, though not very practical, contains a mass of very suggestive matter on a subject which no one else, so far as I am aware, has approached in quite the same spirit. As this book has been reprinted at so low a price as sixpence, there is no excuse for any parent who is unacquainted with its absolutely invaluable teachings. ↑

6 I think Mr Andrew Lang. ↑

7 Should we ever have a “universal” language, is it altogether chimerical to imagine that it might be an idæographic one? Provided that some simple code of idæographic writing were invented to denote the very limited number of concrete notions essential to commercial correspondence, no one who has had occasion to study Chinese, even in the most cursory manner, would think it at all a severe effort of the imagination to conceive of an idæographic notation as being used for business correspondence. In Chinese, the unit of expression is an idea. Words which relate to kindred subjects include, in their idæographs, the sign for the connecting link. Thus the idæograph for “agriculture” is made up of the sign for “strength” and for “a field.” Consequently, although the Japanese language when spoken sounds so entirely unlike Chinese that a person knowing neither can distinguish one from the other when heard across the width of a street, the Japanese can read Chinese books without difficulty, and one form of printing can be read by the Chinese of the North and those of the South, although the spoken dialects differ so much that “pidgin” English is often used by the two as a means of spoken communication. An idæographic medium of commercial writing (not of course so archaic nor so cumbersome as Chinese, but philosophically devised for the purpose) would release the student from all difficulties of speech and accent; he would always name the signs to himself in his own language. ↑

8 A method, it may be added, which can very usefully be practised now. Those of us who “rub-up” our French or German a little before a summer holiday by reading a novel or two, would always find the results of this rubbing-up process to be greatly more effective, when presently utilised abroad, if we would read always *aloud* instead of in silence according to the usual procedure. ↑

[Contents]

CHAPTER IX

RELIGION: THE FINE ARTS: LITERATURE

A good many people contemplate the future of the world with an alarmed feeling that vast material progress and enlarged knowledge of the visible and tangible universe are likely to be accompanied by intellectual developments dangerous to the religious spirit in mankind. But to consider thus is to overlook the manifest trend of human thought at the present time. Of the two influences named, material progress and enlarged information about the universe, the former is probably much more directly liable to affect religious feeling adversely than the latter. Epochs of high civilisation and great luxury have often accompanied a general tendency to scepticism, and these conditions are also perhaps (and for the same reasons) not highly favourable to the highest developments of poetry. There have been periods of scientific discovery which have coincided with the spread of irreligion. During the second half of the nineteenth century there was, for instance, no doubt a great increase of popular scepticism arising out of [176] popular deductions (or supposed deductions) from science. Religion unquestionably lost ground in the sense that dogmatic irreligion became rather fashionable. When the people began to learn that geological research had entirely upset the Biblical chronology, and that biological research had proved the development of animal life by evolutionary processes not compatible with a literal acceptance of the account of the creation in Genesis; when knowledge of the developments of language proved that the various tongues of mankind could not possibly have been the subject of a sudden, cataclysmal “confusion” at Babel or elsewhere, and when it became common knowledge that the sun and stars were not suddenly produced for the convenience of man, but were, on the contrary, for the most part much older, as suns and stars, than the earth itself; it is not surprising that minds untrained in philosophical deduction leaped towards atheism, although, of course, none of these discoveries has any more to do with religion, as religion, than, say, chemistry has to do with music. Unless one takes a highly anthropomorphic view of the subject they are not even inimical to revelation. Of course it is open to anyone who chooses, to say that if the statements in the Bible, said to be inspired, are incorrect, the Creator (and Inspirer) either did not know how He had done His work, or told untruths about [177] it; and consequently that scientific discovery has disproved revelation. But that is what I have called a highly anthropomorphic argument, and it may safely be left to the apologists to demolish. Assuredly it is not a sort of argument likely to be met with in the cultured and logical future. But it was an argument which commended itself very widely to the uncultured and illogical past, and great efforts were made to deal with it. These efforts were really inimical to religious faith. Religion having been declared to rest upon the irrefragable rock of Holy Scripture, there appeared to many excellent people an urgent necessity that science should be set right, that the theory of Evolution (by which was meant, for these thinkers, Darwinism) must be disproved: otherwise all faith must go by the board, and the world must descend into pure materialism. The Biblical criticism produced in Germany, and apparently received in the very heart of the

Christian camp, seemed to plain men not merely to assail this irrefragable rock but to strike at the roots of religion itself. Atheism, having become unfashionable, was exchanged from an “agnosticism” of which the popular conception was not a great deal more philosophical. The whole question of religion was conceived to hang together. The Bible was the Word of God: if the Bible could not stand, God must fall. And the stability of the Bible was [178] considered to rest upon scientific accuracy. A miscellaneous collection of writings, certainly of great, but of variously computed antiquity, was to be absolutely right (which no other documents of anything like the same age have ever been) on scientific facts; otherwise it could not be retained as a text-book of the churches. The latter (sometimes themselves claiming inspiration) had declared the Bible to be directly inspired: and by some people inspiration was taken to imply literal and detailed truth, though literal and detailed truth would certainly have made the collection utterly incomprehensible by the persons who have used it during all but the last comparatively insignificant portion of its existence, and to most persons even then. Evidently such a conception of the Bible, accompanied by the opinion that religion could only exist on the basis of the Bible, was dangerous to popular religion in proportion as the opinions here summarised met with public support.

Hardly less dangerous was the endeavour of some apologists to assist the difficulty of belief by attenuating the minimum required of it. The exposure of their rather circular arguments—basing Faith on the inspired Bible, and the inspiration of the Bible on its internal evidence—titillated in the untrained thinker who had rejected (as he was encouraged to reject) the claim of the Church to be the repository of inspired tradition, a sense of his own logical [179] acuteness. With a warm glow of self-approval he abandoned the ancient shibboleths and left off going to church, being convinced that no really well-informed intelligence could tolerate the mutual contradiction of science and religion. With no more ability to understand the arguments which supported the one than the philosophy which lay at the root of the other, and quite unaware that religious belief is capable of development and is as much a product of evolution as any material phenomenon, he considered according to temperament that religion was either a mischievous invention calculated to clog the progress of the world, or a pardonable aberration of amiable minds seeking consolation in superstition of one sort or another. The religiously-minded thinker of the same calibre welcomed with enthusiasm the antagonisms of scientific schools discovered for him by the less wary of his teachers, and decided that Darwin was wrong, that Huxley was following false scents, and that science would have to revise all its later conclusions. In neither case (naturally) was

> ... “divine philosophy,
> Not harsh and crabbèd as dull fools suppose,
> But musical as is Apollo’s lute,”

called into the assize. “Mistakes of Moses,” to be either proved or justified, were [180] popularly supposed to be the touchstone of religion’s fate. Meanwhile, though the combatants in the popular arena were quite unaware of it, the true thinkers were realising vast depths which science had left still unexplored, and the very investigations undertaken to account for the beginnings of life on this planet were proving the belief in the spontaneous generation of life a figment. Whatever effect science may have had upon myth, it was doing nothing to assail the ultimate mystery which is the basic fact of religion.

By degrees, too, the philosophical untenableness of materialism began to be popularised, and although it is a great deal easier to accept (or decline) scientific discoveries without understanding the evidence for or against them than to grasp such abstract considerations as the subjectivity of phenomena, popular scepticism began to be directed into new channels. If we could only know phenomena we really know nothing; and it was just as likely that the most absurd myths of the hagiologist might be true as that they might be false—since one could know nothing. Towards the end of the century there is no doubt that among the masses of the people the incomprehensibleness of things in general had the effect of popularising a certain tolerance of Christianity among the class which, a little earlier, had been repudiating it altogether; and if church-going, [181] Sabbath-keeping and other formal acts of religion continued to be mentioned by the clergy and their adherents as the subject of lamentable negligence, the habits thus deplored arose, less and less from conviction and more and more from taste. People stayed away from church not because they rejected Christianity but because church-going bored them. If the clergy saw their congregations dwindle they had themselves to thank for it. The atrocious dulness of nearly all sermons drove away more churchmen than were lured from their pews by militant irreligion. There is not the smallest reason to believe that “free thought” propaganda had any really important part in producing the indifference denounced by the churches. The simple fact is that a growing appetite for

amusements, athletic and other, and an intolerance of the boredom inflicted by preachers too indolent or too imperfectly educated to make their discourses tolerable by an active mind, robbed the churches of their visitors. A good preacher never lacked a crowded congregation even in the middle of a week-day in the city of London; nor are such congregations lacking now.

No doubt the form of education generally adopted in non-Catholic countries has been a great cause of indifferentism. The fostering of parental indolence by [182]
States which profess to relieve it of the duty of religious as well as the expense of other teaching, cannot tend to promote religious education. To take our own country for an example, fathers, who would make it a duty to instil as well as they were able the principles of their own faith into the minds of their children if the board schools were not supposed to teach Christianity, doubtless neglect that task in the existing conditions, a fact which makes it quite easy to understand why congregations are so largely made up of elderly people, while boys and girls, not young enough to be haled unwillingly to the parental pew, and young men and maidens, young wives and husbands “educated” on the prevailing system, tend more and more to amuse themselves, not in irreligion but in indifference. The squabbles of the sects have made it impossible to invest Christianity in board schools, unless the law be flagrantly violated, with any of the importance necessary to the foundation of a genuinely religious spirit; and the very children find that religion is treated as a thing of much less importance than sums or a good handwriting. No one struggles and wrangles about the right way to do long division. Long division, therefore, is a settled thing and important. But everybody quarrels and snarls as to who shall teach his particular kind of religion. Religion, therefore, is a doubtful sort of thing, about which even [183]
grown-up people do not agree. It cannot be of much importance. If you ask father about it, he says it is the teacher’s business to answer you. And in school, it has to be attended to at a certain time so as not to interfere with the real business of the day. Clearly it doesn’t much matter; and the child resolves, as soon as it is old enough, to escape from the weekly boredom of sitting still for two hours in a stuffy church or chapel, saying the same things over and over again, and listening to a dull man in a sort of elevated and ornamented witness-box talking in a patronising tone about things not easy to understand, and not in the least practically useful when heard.

Of course this is not the only sort of influence which has been at work to produce a result likely to affect the attitude of the present century towards the question. If the facts are as I have stated them (which I do not think anyone will dispute) we see one very good reason why the younger generation is just now somewhat irreligious. I do not believe it is nearly as irreligious as many good people (on both sides) think. But I do believe that we, at all events, have as a nation been doing every thing we can to make it so. There is no surer way of preventing a thing’s being done than for the State to make a show of doing it and then neglect it. If the school boards had not assumed the duty of teaching children [184]
Christianity, parents would have attended to the matter, and probably done it a great deal better than the boards could possibly have done it, even in the best conditions. And if anyone says that you can’t teach Christianity, the reply is, that in the sort of conditions which exist in England at the present time, the religious spirit is not favoured unless religion *is* taught. I said at the beginning that the sort of life we lead now, and that we are likely to go on living during the next hundred years, is probably more unfavourable to the spirit than any directly irreligious influence of science or discovery. People who are crowded into towns, where they are out of constant touch with Nature and the immensities of space, and lead a hurried, busy existence unfavourable to deep thought and mysticism, are much less liable to yearn for some explanation of the vast incomprehensible universe, the profound misgivings of the soul, than people who have other opportunities, who know the massive face of solitude and have lain under the inscrutable stars. The very frequency of terrible experience, when death stalks in the streets and a funeral procession is so common a sight that men hardly turn their unbared heads to look upon it, blunts the sense of awe; and in the cheap Press the alleged humorist finds it a choice subject for joking. A hundred years hence, though I hope our humorous Press won’t be quite so ghastly, still [185]
more of us will have lived always in cities, and been rarely intimate with Nature. Unless, therefore, some new influences supervene, it is likely that the new age will be even less religiously inclined than the age we live in. Is it probable that such an influence will arise? Or will the next century have turned its face altogether from faith and given up in despair the world-old riddle of the universe?

Assuredly, with the increase, impossible to be denied, of conditions unfavourable to church-going, the influence which could arrest the tendencies of thought at present supposed to exist must be a powerful one. But in computing the exact potency which it would require to possess we must take an accurate view of the tendencies themselves. Now, although dogmatic religion has to a certain extent

lost ground, and though formal observances are somewhat neglected, it would be a fallacy to consider that morality is in consequence retrograding. The steady growth of such things as teetotalism; the revolt of the public conscience against tame stag hunting and against what was aptly called “murderous millinery”; the support afforded to the societies for the Protection of Children and for the Prevention of Cruelty to Animals; the generous responses made to any appeal for public subscriptions to meet any great disaster; the remarkable way in which the [186] working people, out of their miserable poverty, help each other in time of strikes; the waves of public indignation which the exposure of any great injustice is able to arouse; all show that the world is by no means retrograde in respect of morals. What is often called the growing sentimentality of the age, which opens all pockets at the call of want, and doubtless sometimes leads to ridiculous exhibitions of mistaken feeling, is a proof that the ethical sense of the people is by no means blunt; and it shows a constant tendency to become keener. It is mysticism rather than morality which is chiefly lacking to a re-development of the religious spirit. And although the opinions of the mass of the people are likely to be influenced at all times more by the results at which what are called leaders of thought arrive than by the reasons which lead up to those conclusions, it is rational to expect that with the improved and much more thoroughly disseminated education which the necessities of the coming century are going to enforce upon us, will make the people more accessible to philosophical reasoning than they have ever been since Socrates. Consequently, the general attitude of the world a hundred years hence towards mysticism will depend greatly upon the conclusions of eminent thinkers. These conclusions will require time in order to exercise their influence; but it seems probable that the influence [187] will be towards and not away from mysticism.

An attempt to foresee the probable position, as an institution, of religion in the future therefore demands the consideration of what net result is likely to be deduced from science and philosophy by the improved average intelligence of this century. I speak expressly of religion as an institution, intending thereby to limit the inquiry to an attempt to determine the popular view of religion; the pretence to anticipate the opinions of the great philosophers that this century will no doubt produce being a little too presumptuous even for the present writer, who may not be considered in any event to have fallen into many errors resulting from excessive modesty.

We can only come within reasonable limits of safety and consistency in such an inquiry by allowing here, as I have allowed all through, for a great increase in general intelligence. Probably the mass of the population will be less greatly removed in reflective and reasoning powers from the greatest minds than at present; because the changes which have been predicted are likely to have more effect in raising the general standard of intelligence than in producing individual and exceptional minds of very great calibre.

No doubt the people will be in closer touch with advanced thinkers than now. [188] But I do not see any reason for supposing that the latter can be conspicuously greater than the thinkers of past time, from Plato to Herbert Spencer. Consequently it is impossible to restrict the inquiry to strictly popular developments. We must ask what direction abstract thought is likely to take: and it certainly does not seem that the influence of recent discoveries in physics—especially those which have produced the new theory of the constitution of the atom—can tend to materialism. With atoms resolved by the latest science into electrons, which have been declared in a passage already cited to be not merely carriers of electrical charge but the electrical charges themselves, the objectivity of matter has assuredly not received any new support. And if speculation as to the beginning of things (always the kind of speculation most important to philosophy, where philosophy is made the handmaid of religion) is relieved of the necessity of accounting for the creation of matter, and only has to concern itself with the creation of force, we evidently approach the more abstract conception of a “Something not ourselves” which is admittedly the philosophical necessity most favourable to spiritual religion.

But for many people natural religion is a poor alternative for revelation, and if we interrogate probability as to the future of a faith in directly-revealed religion [189] we approach a much more difficult question. The verbal inspiration of Scripture appears to be no longer regarded as a necessity of this faith; and with its final abandonment we shall no doubt enter upon a period of much more abstract thought and of vaguer belief, but (as I think) also a far more spiritual attitude towards the Unseen. From the moment when faith is relieved of all danger from the critical discrediting of any particular set of documents, it is of course freed from certain great dangers. Probably the Christian of the year 2000 will have abandoned all dependence upon the authenticity of the original sources of information, and will be quite ready to let what used to be regarded as the foundations of belief take their place with other mythologies. But this position

need not be regarded as irreligious; possibly it need not be considered un-Christian. The hospitality which all truly religious thought begins to extend, not merely to uncanonical scriptures but to the best religious thought of all ages, will strengthen rather than weaken the spiritual attitude; and, however we may probe into the sciences of life and of the universe, the awful mysteries which lie beyond the sphere of science will always tempt man to speculate and to aspire. Always we shall yearn towards the eternities which preceded and the eternities [190] which must follow the little interval that we call Time. Always beside the grave that has closed upon what we have loved, despair will lure us on to seek consolation in a faith which promises re-union beyond the bourn. Always the manifold injustice of Fate will make aspiration inevitable. Always the uplifting spectacle of the stars, the immensities of ocean and infinite mysteries of the soul of man will make us welcome the spiritual teaching which can throw gleams of mystic illumination upon the riddles of the universe and justify the ways of God to man. We may not always see our way to find efficacy in ritual incense; we may not long continue to ask direct interventions of the Deity in prayers which we know in a literal sense to be unthinkable and profane; we may cease the impertinence of offering suggestions to the Maker of the world on the subject of next week's weather; and yet when we uplift our hearts in aspiration and beg that we may divine more spiritually the nature of the Creator, and learn to love our neighbour more effectually and with a better enlightenment, we may still pray and know that our prayer is answered. If we cease to think that wicked men descend into some chastisement of which fire and flames are the abandoned symbols, we may still realise that none can act against the moral intuitions of his [191] nature without mutilating his own soul: and if this soul of man be immortal, its punishment is thus eternal also, and can be cancelled only by the act of divine mercy which we shall still call man's redemption. We begin to know something of the mind's independence of the body where (in phenomena of which evidence seems to be accumulating) mind can speak to mind by other means than the senses: and everything which points that way cuts fresh ground from under the notion that bodily death is the end of us. Although the philosophical theory of immortality does not need this evidence, faith is assisted by it. On the great ideas which are the support and justification of religion there seems no reason to suppose that the discoveries of the next hundred years are likely to throw discredit.

To sum up, then, I believe that the effect of improved education will be to conserve rather than to destroy religion; but I do not believe that religion will be a historical so much as a philosophical conception. The present great obstacle to religious feeling in non-Catholic countries, namely the pretence of the State to "teach religion" as if it were a science or an art, will have been removed some while before this time next century, and individual effort will be cultivated in this, as in certain other respects, instead of being repressed. The Bible will be read for its morals, its poetry, its literature; and the aspiration to conceive the [192] Divine will continue to take the shape of some kind of public worship probably much unlike anything which we now practise, and totally divorced from any faith in miracles and verbal inspiration. In religion men will seek their consolation against the buffeting and injustice of destiny, and in a more reasoned notion of immortality dry their eyes before the poignant spectacle of Death.

The whole tendency of the modern mind is to become more spiritually imaginative. We are often scornfully told that this is an age of hysteria, when the mere fact is that it is an age of imagination. The highly civilised life of our day[1] naturally exalts intelligence in comparison with mere activity of body; mind gains ascendency over muscle. It is much more important to worldly success just now that a man should be able to think accurately than that he should be able to lift great weights, endure great physical fatigues or fight satisfactorily. Consequently, there is a great premium upon intelligence, and only a much smaller premium upon bodily strength; and this condition of affairs is likely to become accentuated as the present century develops. With increase of intellectual agility we obtain increase of subtlety and intuition, and of those finer perceptive and critical faculties which make expression of the emotions [193] important and interesting. It has often been argued that epochs of high civilisation are unfavourable to poetry and the fine arts, and a well-known passage of Macaulay argues the point at some length. Whether such an epoch as that of a hundred years hence be probably fertile in art or no, assuredly appreciation of the fine arts will be widespread and acute. Of course you can never account for the extraordinary phenomenon called genius, and while it is no doubt true that genius, like everything else, is the product of its age, yet genius consistently transcends its age. The number of minds in a thousand able to bring a reasonable degree of competent appreciation to the writings of Shakespeare is much greater now than when Shakespeare wrote. There never was a time when a great writer, or a great painter (despite what happened to Whistler) was in less danger of public neglect than the present. And the next century will be yet more critical than this. Every one of the fine arts will be more generally and more

subtly appreciated than now. The existing masterpieces of antiquity will be even more reverently enjoyed than now, and the lessons they embody will be more completely assimilated. It remains to be answered, whether the next century will be fertile in new masterpieces of literature and art. [194]

There has been, in my opinion, too great a readiness on the part of most writers to assume that high civilisation necessarily creates epochs of ugliness. No doubt railways, factories and other civilised and civilising conveniences do not, in the natural course of things, tend to assume forms gratifying to the æsthetician. The present tendency of domestic architecture, for instance, shows an abject sort of spirit by basing any effort which it may make for comeliness on an attempt to imitate the picturesqueness of the past rather than to form new and beautiful styles adapted to modern requirements. Because old red-brick, timbered rough-cast, and the quaintly-shaped buildings of old time please the eye by contrast more than by inherent beauty, unintelligent builders just now think they can redeem dwelling-houses from plain ugliness by imitating these peculiarities, and they are encouraged in this course by the people who are to live in such houses and by the exploiters of estate development. But such fine examples as the new Westminster Cathedral show that the spirit of beauty has not left our architects. The growing intelligence of the new age ought, at all events, to develop, as its resources will reward, originality. And the developed æstheticism of the age will demand beautiful buildings, not slavishly copied from the antique, but created by the imagination of the modern. Reverence for natural beauty, already manifest in [195] the revolt against advertisement-boards in juxtaposition with notable scenery and even along the sides of railways (where one would have thought that a little more ugliness could do no great harm) will no doubt be accentuated when the unviolated virginities of Nature have become fewer; and a steady growth of public taste is evidenced even now by the success of the better sort of street advertisements and the failure of the uglier kind, as demonstrated by the steady abandonment of the latter. The most fashionable artists no longer think it beneath them to design wall-posters. If the advertisers who pay their large fees find it profitable to purchase art in an expensive market, it must be because popular taste is better than it used to be; and even if the cult of the photograph and the process block in illustrated newspapers, to the detriment of drawings and wood engravings, be cited as evidence in the other direction, we have a right to quote in rebuttal of this the rather violent efforts of the more intelligent class of amateurs to secure a recognition of selective and manipulated photography as an art. Moreover, just as some critics have argued that it is better for the people to read the atrocious letterpress of the popular papers than not to read anything, it can also presumably be contended that it is better for the people to look at photographs reproduced by “process” than not to look at any [196] pictures at all, though, in reality, it is doubtful whether bad pictures and inferior “literature” are not much worse and much more degrading to popular taste than none. That we really do care for pictures even in England (however little critical ability we may possess to distinguish good pictures from bad) is evidenced by the crowds which throng the Royal Academy. It would be better if they thronged the National Gallery; but even the Royal Academy is evidence: and the success of the sixpenny-admission plan on the days when it is adopted, and the large attendance at Burlington House on Bank Holidays, prove that the taste for pictures is shared even by the least educated part of the public. Thus there is no reason to be found in present tendencies for apprehending a decay of æstheticism as a result of material progress. Probably even the cheap papers will eventually improve, both in their reading-matter and in their illustrations, when it grows less profitable than it is at present to print the worst attainable examples of both.

Of course it would be very easy to argue that the tendency of all this is rather to develop a somewhat higher standard of mediocrity than to produce brilliant examples of art in any manifestation. Beauty, up to a certain point, can be bought. The demand will evoke the supply. But the highest manifestations of the [197] beautiful must be the spontaneous product of subtle brains and lissom fingers working for Art’s sake. Yet it is also not very difficult to show that circumstances affect production even of the highest. An example may be found in the extraordinary merit of modern French sculpture, as compared with the wretched work produced in England. In the Paris Salon, which may be said to correspond with our Royal Academy, sculpture is shown in a manner which renders the huddled cloak-room full of mediocre marble and third-rate work in clay at Burlington House almost too painful to be ludicrous. However meritorious the work of an English statuary, he would get no chance—does get no chance—in the Academy exhibition: and there is every justification for the opinion that it is not bad work which in this country produces official neglect, nor good work which in France has for many years led to the loving care with which sculpture is shown in Paris; but on the contrary, that the real opportunity which a French sculptor obtains has been just as instrumental in fostering the art there as our own utter neglect to appreciate sculpture of genius has been in stifling the art

here. The French treatment of sculpture has not merely raised the standard of average production. It has fostered actual genius. Even so the opportunities which the social conditions of a hundred years hence will afford to art will [198] assuredly promote the artistic conditions favourable to the development and fostering of genius, whenever genius, in its shy, fairy-like way, contrives to be born, no man knows how. A general power of appreciating masterpieces has never been alleged to be unfavourable to their production. What is unfavourable to it in a highly civilised age is the hurry and preoccupation which leave no time for the appreciative faculties to employ themselves. It has been very well said that the feature most inimical to art in American civilisation is the absence of a "leisure class." If there be any validity in the conclusions for which I have been trying to win acceptance[2] in the earlier chapters of this work, the new age will be an age of greatly increased leisure in all ranks, and this condition ought to favour art in every way as highly as the improvement in the nature as well as in the extent of education must also favour it. And in this there will be both action and reaction—increased leisure and improved appreciation tending to foster genius, genius in the glorious perfection of its work generously returning the benefit by cultivating and refining the æsthetic sense of the new age.

Similarly in literature we may hope that the atrocious consequences of instruction applied to a vast number of minds which no attempt is made to [199] educate will be only temporary. Popular "literature" and journalism at the present time might well strike with despair the most hopeful heart. But when we remember that no attempt whatever is being made to educate the faculty of imagination, and that we stubbornly restrict all teaching to a vehement effort to cram as many facts as possible into the mind of the scholar, with no endeavour at all to improve the qualities of that mind itself; and when we grant, as I think any reasonably intelligent prevision of the future must grant, that all this will before many decades have to give place to really educational processes: it seems evident that the future will gradually fling aside in deserved contempt the basely illiterate products of the printing press which enrich popular publishers and newspaper proprietors to-day, redeem poetry from its present practical neglect, and revive and enrich the *belles lettres*, which, even in the latter part of the nineteenth century and these latter years of the dawning twentieth century, have contrived to appear in masterpieces for which readers, fit, if few, have never ceased to exist. One result of this will be to end, and end for ever, the idiotic and reactionary policy of "limited editions" for beautiful books, by which alone, in many cases, the production of such books has been made possible. As [200] the public for fine literature decently printed becomes gradually larger, there will no longer be any object in accentuating popular ignorance by withholding from the greatest part of the public the opportunity to possess and to enjoy the best work in letters that the age is producing, and it will be possible for the poet of delicate imagination, the essayist of subtle insight, and the story-teller of restrained and modest genius, to be as well paid as the inventors of nightmare horrors and the biographers of impossibly ingenious detectives apparently are to-day.

There remains to be considered the much less difficult problem of the sort of progress likely to be made in the mechanical implements of the fine arts. Some conceivable developments in what may be called the mechanism of literature have been discussed in the chapter on journalism, and just as it was there predicted that the forms of language hallowed by tradition and made classic by antiquity and intrinsic beauty must always continue to be employed, so in the arts it is impossible to believe that the classical methods of expression can ever become obsolete. But to say this is not to imply that new processes are incapable of being applied to the arts. Nothing which the future may evolve as a modelling substance can conceivably render obsolete clay or make marble antiquated; but [201] innovation is always possible and may always in the right hands yield new tributes of loveliness. Prejudice is difficult to overcome where art is in question. But as was recently seen in the invention of solid oil paints, new media are quite capable of creating new modes of expression, and daring as is the flight of imagination required by such a notion, may it not be conceived that the new methods of intercommunication between mind and mind, which may develop out of the new psychology of our own age, might furnish the medium of a new literature?

In music it does not seem necessary to surmise that the classical gamut must be the last word of melodic thought. The barrier between East and West in regard to musical expression—a barrier as yet so firm as to make us feel that "never the twain can meet"—is precisely of this nature. A remark by an Indian scholar educated in England, and as well versed in Western as in Eastern art, is pregnant of promise. He said to a friend of the present writer, "There is no doubt that in every form of invention, in every development of intellect, you surpass us, save in one. Your music is poor and mean, compared with the music of the East."

Now to any English ear the music of Asia is as yet a mere snarl of incomprehensible cacophonies, destitute alike of melody, harmony or rhythm. But that it has laws of its own, intricate, involved and subtle, no one can doubt. I remember, one night, finding my way into a Chinese lodging-house in an Australian city. From one of the cubicles with which it was filled came what seemed to me “a rueful noise and a ghastful”—a noise as if some more than usually vocal tom-cat were being severely ill-used. [202]

From time to time the noise ceased, to be succeeded by energetic disputations in the thin nasal and guttural tones of South China, themselves, I knew, graduated in pitch, as all Chinese talk requires to be in order to be understood. Making my way to the source of these sounds, I found four young Chinamen. One of them was engaged in an unabashed bathing of his lower limbs. Other two were squatting on the floor to enjoy the music of the fourth, who sat on a high packing-case, holding a book in his toes, and performing on an instrument something like a violin. From time to time one of the others would interrupt, criticising the executant, and the book would then be referred to with energy and something as much like excitement as one ever sees a Chinaman display. The musician would extract a few notes from the instrument, clearly in defence of his rendering. Then the tumult would die down while the wailing of the smitten strings went on again. [203]

Now it cannot be impossible to fathom the obscurities of Oriental music: and it is quite possible that they may, in the future, yield new harmonies and melodies as yet undreamed-of to the West; for the difference is mainly, if I understand aright what Orientals say of it, a difference of scale. No doubt the conventions are all different. I have often observed in India that music considered to possess a jovial character is a shrill wailing in slow time; whereas funereal music always sounds a lively air. Western civilisation finds no difficulty in comprehending the decorative art of India and the Far East, nor in highly appreciating it. May not Eastern music have gifts for us as yet undreamed-of?

But of course painting has a much more direct appeal to the emotions than music, and it is not at all difficult to imagine—nay, it is hardly possible to doubt—that a new manner in painting will from time to time develop, arriving out of newly-invented implements and materials.

Doubtless improved methods of reproduction will multiply the numbers of those who can enjoy the masterpieces of the new age and of the old, just as in music it will unquestionably be possible to repeat satisfactorily an indefinite number of times any sounds that have once existed. Neither will any of the arts permanently suffer by the mechanical improvements applied to them—though the first employment of the latter will doubtless often have results which will be, to the artist, rather terrible. [204] [205]

---

1 Over-civilised, if one please, but I do not admit for an instant that man can be over-civilised. ↑

2 *Ante*, Chapter III. ↑

[Contents]

CHAPTER X

THE AGE OF ECONOMIES

The next century will certainly be a frugal age in the sense of planetary frugality. With a greatly-increased call on the resources of the world entailed by the vast increase of population it will be absolutely necessary for us to “make the most of what we here do spend.” And with the more humane and gentler notions which will prevail it is also certain that the new age will be an age of cheapness. Of course, cheapness is a purely relative matter. The suit of clothes which would be very cheap at seven guineas in the United States would be very dear at that price here, not merely because by reason of the tariff clothes and other things are expensive in America, but also because wages are higher there than in England. In spite of the enormous growth of population since, say, the accession of Queen Victoria, the standard of comfort is much higher now than then, and prices are lower, because production has increased more quickly than population. Comforts are cheaper, wages are higher. But the standard of comfort will be higher still a hundred years hence. Workmen will earn a greater share of the commodities of life, and whether their pay be higher, computed as money, or lower, makes no difference to the question of cheapness. If wages are low commodities will be low-priced: that is all. [206]

And probably this is the turn that events will take, though, even then, the monetary earnings of the worker will probably be much higher than they are nowadays. It is doubtful whether so clumsy a contrivance as metallic currencies, of intrinsic values corresponding with their titles, can survive at all; but of course everything will be computed in terms of some currency or other—perhaps of an obsolete currency. We are apt to think that the steady value of gold can be counted upon to remain a constant factor of economics. But only a very small part of the real business of the world is even now transacted with actual gold. Much the greatest part is transacted in paper—that is by the simple balancing of debits against credits in various clearing-houses.

Of course, if there were any reason to suppose that State Socialism would be the political basis of future institutions, currency of intrinsic value (which practically means, even now, only gold currency) would be easily dispensed with, because [207] almost every transaction would be effected by means of orders on the national treasury, the State owning practically everything. Some visionaries have long included the abolition of money in their schemes for the immediate economic improvement of the race. But the disuse of a currency is not really a means to any end. It is only an effect which may or may not arise out of certain alterations in commercial method. There are signs that the people are already growing tired of the extravagance attached to the system of State, and even of municipal, trading: and this fact makes socialism improbable. Constant complaints are heard about such things as municipal tramways and municipal gasworks, and the proposal to transfer the entire working of telephones to the Government has been fiercely opposed. Where the post-office works telephones side by side with a telephone company, as in London, there is no indication that the public prefers the Government service before the private service; and it is admitted that tramways privately owned work more cheaply and yield better returns on their capital than municipal tramways. Any interference of the State in matters that could practically be left to private enterprise provokes incessant complaint. When continued and developed, however, this interference has a vicious habit of extending itself into fresh fields. Having first undertaken the education of the [208] people the State was not long in carrying that system to its natural limit by relieving parents of school fees. Now, free meals for poor children, or meals sold below cost, are gradually becoming the fashion; what is the use of reading out lessons to children who are too hungry to listen? So the State must feed as well as educate. From this to the free clothing of school children is a very short step. But once the unavoidable sequence of such things is recognised, public opinion begins to revolt, asking where, if we go on at this rate, we are likely to stop, so long as there is any parental duty that the State has omitted to assume. We perceive that, unless the process is arrested, the begetter of children will have no obligations left, and the awful effects of relieving every member of the public of all responsibility being at length recognised, there is sure to be a reaction. It is certainly not beyond the wit of man to contrive that it shall be impossible for parents to leave their children untaught, without Government taking upon itself the function of schoolmaster. A hundred years hence I hope that it will long have been unnecessary to use force at all to compel parents to educate their children: and by that time the folly of our (perhaps temporarily unavoidable) expedients will be laughed at, and the fatuity of a minimum standard of proficiency, which [209] inevitably becomes the maximum standard also, will be wondered at. In the matter here selected as the most convenient for illustration, and in other matters where State powers, or powers devolved by the State, are now employed in enterprises which do not properly fall into the province of Governments, the abuses and wastefulness of governmental interference are already acting as the best possible object-lessons against further interferences of the kind which makes for socialism.

But of all the restraining influences inimical to socialism, none will be anything like so powerful in the present century as the new anxiety with which the people will safeguard their own self-respect. It must be borne in mind, and cannot be too often repeated, that before many decades, systems of education will be valued chiefly in proportion as they tend to develop and establish character in the individual. And with the recognition of the great truth that character is much the most important thing in the world, there will grow up a great jealousy of anything which tends to damage the public sense of individual responsibility. This jealousy cannot but be adverse to socialism, whose ideal is to relieve the individual of all responsibilities and to throw them upon committees.

Not that the value of organisation and combination for various objects will at all [210] be lost sight of. But we shall perceive that voluntary combination is a form of self-government vastly more friendly to the preservation of self-respect than legislative action, and also a form much less likely to be oppressive. It will be seen, for instance, that it is more desirable for working men to fix, through their trade-unions, the hours of labour in various industries, arranging to meet exceptional circumstances where the latter arise, than for Parliament to decree

that nobody shall work more than eight hours a day. Neither is the panacea of compulsory arbitration in trade disputes likely to be a feature of future politics, because we shall certainly not be long before we perceive that, while it is no doubt quite easy to compel employers and employed to submit their respective cases to a tribunal appointed by law, there is no known way in which the award of such a tribunal can be enforced, and if there were, the effect of its employment would be almost intolerably injurious to the commerce of the country. What will happen a hundred years hence is that trade disputes will have disappeared, because all the workers will be practically their own employers.

Consequently free contract and not socialism will be the basis of the political system of a hundred years hence, and the standard of comfort will be adjusted in [211] the same way as everything else. But in order that this standard may be as high as the advanced humanity of the new age will certainly demand for a population vastly increased, it will be necessary that all the resources of the planet be made the most of. That motive power, one of the most important, if not the most important of all these resources, should be economically produced is, as has already been said, an absolute essential. When we make the most of the sources of power, and are able to apply power in convenient and portable ways to all sorts of work at present done by hand, one of the greatest economies conceivable will have been effected. Probably muscle, as an element of workmanship, will become quite obsolete, though muscular strength will be developed by athletics as a recreation and a safeguard to the health of the race. Here again self-respect will be sedulously nurtured, for nothing fosters it so much as a man's sense of his inherent bodily power. All sorts of wastefully laborious methods of labour will be superseded, in the same way as the steam hammer has superseded the sledge hammer. With the perfect development of power-production achieved, a great deal of the dirtiness of manufacture will vanish: and moreover, a use will have been discovered for every by-product of every manufacture. We are hideously wasteful as yet: and wastefulness makes [212] for dirt. One perceives this at once on comparing a factory where the by-products are of a nature to be utilised directly, with one where these products are of small value. A goldsmith's shop is a clean place compared with the gasworks of even a modern town: but these again are clean compared with what they used to be before the various chemical uses of coal-tar and gas-liquor were discovered.

In the planning of machinery, notwithstanding the fact that power will be obtained at a minimum of expense, all contrivances which economise force will be highly valued. We have been increasingly valuing them ever since steam first became important as a source of motive power. Early machines in the Patents' Museum at South Kensington exhibit the most extraordinary recklessness in the waste of power. Considering the feebleness of the motive force available, one would have expected that every means would be sought to minimise friction. But instead, the force was transmitted by contrivances which, to a modern eye, seemed deliberately contrived to introduce as much friction as possible. Every year brings out fresh inventions for the avoidance of friction: and still we are but upon the very threshold of the subject. It was only in 1904 that a party of railway engineers was entertained by a patentee who wished to show them the saving in [213] coal per train-mile which can be saved by a new bearing for passenger coaches, and the superior smoothness (which is of course a factor in the economy) of their running. Hardly any vehicle except a bicycle or a trotting buggy is yet constructed with any serious attempt to save friction at the axles. The number of industrial machines to which ball-bearings might be applied with great economy of power is enormous. But ball-bearings are very little used. It is probably considered as yet that the saving in coal would not pay for the working expenses connected with them and with other improvements. But as machinery is further improved economies at present merely theoretical will become practical and remunerative. In a hundred years' time we shall certainly be able to make generally profitable the use of many devices as yet applicable only to delicate and exceptional machines, and shall be able to use much power which at present runs to waste. Every time a locomotive is stopped there is a great waste of power in the operation of the brakes, because it is not worth while to adopt any contrivance for utilising it. It disappears, as heat, and is lost. Many similar wastages could be cited, and engineers would scoff at the citation, on the ground that the loss is not worth saving. But it will be worth saving a hundred years hence. We shall not be able to afford any waste. The world will have to be [214] worked, as we say, "for all it is worth."

Of course all sorts of other wastes will be avoided through the natural progress of discovery and the natural development of thought. Illness is a waste. Illness will be much less common in a hundred years' time. A man who eats and consumes the world's products without contributing to them will be too expensive a luxury for the new age to indulge itself with: and the present excuse for a "leisure" class—already scorned in America—that a rich and leisured class

fosters and patronises the arts, will be absurd. All classes will foster and patronise the arts. For, just as we shall see that idleness is waste (and even more injurious to the idler than to his fellows), so we shall also see that overwork is a waste, because the legitimate purpose of human endeavour is not wealth, but happiness. When all work, all will be able to play.

Planetary economy will be a determining factor in the change of diet which the coming century must inevitably witness. Such a wasteful food as animal flesh cannot survive: and even apart from the moral necessity which will compel mankind, for its own preservation, to abandon the use of alcohol, the direct and indirect wastefulness of alcohol will make it impossible for beverages containing it to be tolerated. Very likely tobacco will follow it. We are already in sight of [215] legislation to restrain the use of tobacco by the young. It will probably be unnecessary for the law to prohibit its use by adults. The frugal adult of the new age will abandon it unbidden, the change taking place as smoothly and silently as the process from the universal drunkenness of our great-grandfathers to the relative sobriety of ourselves, a process of which it is surprising that anyone can fail to perceive that the natural end must be the total disuse of alcoholic drinks. All things work their way to their natural conclusion, and there is no more fertile source of sociological blindness than the fallacy which treats certain phenomena of society as static, whereas all phenomena of society are really in the dynamic state, and always must be so.

In such matters as the exhaustion of the soil, and the reckless waste of wood, our present practice will certainly be reformed. There will be great improvements in agricultural chemistry, necessitated by the disappearance of animal manure. The obsolescence of the horse is already in sight; probably we ourselves shall see the day when the horse will cease to be employed except in the organised material of war: and as soon as we cease to eat animals we shall cease to herd cattle, sheep and poultry. But some means will have to be found for returning to the soil the materials we take out of it. Of course the idiotic wastefulness of many systems of sewage disposal, and the dangers, [216] inconveniences and degrading occupations associated with existing alternatives, will be rectified. By improved agricultural methods, lands at present unutilised will be brought under cultivation: and the wasteful and selfish reservation of game preserves, deer forests and excessive pleasure-grounds will have to be abolished—not by legislative enactment, but probably by spontaneous social developments; by the natural development, in short, of economy in the world’s possessions. A hundred years hence we shall cease to behave as though the resources of the planet were illimitable and could be wasted at will. In the succession of the ages the spendthrift will have given birth to the miser, reversing the usual order of generations. No doubt the attention concentrated upon agriculture as a consequence of the greatly increased use of vegetable and cereal foods will have, as one of its consequences, the discovery of new means for improving all sorts of crops—means of which even the wonderful achievements of the scientific agriculture of the present day do not contain even the first germs. We shall also, perhaps, find means for avoiding the terrible losses and wastage entailed by climatic accidents. At all events, irrigation will be perfected, and probably we shall be able by acclimatisation and modification to find uses for crops that will flourish during that portion of the year when, in [217] temperate climates, the land at present lies idle. This will both stimulate and further necessitate the improvements in agricultural chemistry already mentioned.

As the combustions of solids will no longer be a general method of obtaining heat, we shall greatly economise wood; and the wickedly mischievous word “inexhaustible” will not be applied to timber regions like the Rocky Mountain district of Canada. Arboriculture will become a more practical art than it as yet shows any signs of being; and along with careful afforestation will go skilled improvement in tree-growing. We shall replace all the trees we use by better trees, better cultivated. Even so, however, there will have to be devised great economies in the use of wood—economies like the recent invention of a method by which, instead of being wastefully sawn into planks, a tree-trunk can be cut up spirally, so that almost the whole of it may be used. In many places where wood is now employed in the arts, metals will doubtless be used instead, their greater neatness and durability making it advisable thus to substitute them, for reasons of convenience as well as economy; and probably new alloys, into which the lighter metals, as aluminium, will enter, may give us increased strength without increased weight, which will again be an economy, because it will save power. But even so, the world’s expenditure of wood will continue to be [218] enormous.

War has been alluded to above. War is too wasteful, as well as too imbecilely uncivilised, to survive this century. It may be well to inquire as to the manner in which its abolition is most likely to be brought about. We may take it for granted

that no sudden political or revolutionary movement will abolish the physical conflict of peoples. “All the arts which brutalise the practical polemist” will not be abandoned at a moment’s notice on the bidding of any potentate or combination of potentates. To conceive of them as thus abandoned is to overlook the whole nature of political change. It is absurd (as Herbert Spencer remarks) to assume “that out of a community morally imperfect and intellectually imperfect, there may in some way be had legislative regulation that is not proportionately imperfect.” But it would be equally absurd to believe that the moral and intellectual advance which our present tendencies show to be gradually taking place—an advance certain to be greatly accelerated during the middle half of the next hundred years—can fail to put a stop to war as a political device.

War will probably not be dispensed with in response to any great and sudden revolt of the world’s conscience against the bloodshed and other evils much worse than bloodshed which it entails—of which indeed it actually consists. The [219]
world knows quite well already that war is wicked, wasteful and silly: if it were possible for a suddenly-exasperated realisation of this to take an instantaneous effect, we could and should similarly abolish numerous other evils which we show every disposition to tolerate for some time yet. The fact that single families are able to hold wealth in enormous excess of the maximum amount which it can possibly be good for the community that individuals should hold, is such an evil. The “Yellow” journalism of America and England is another evil just about as difficult, or as easy, to abolish at a stroke as war, and not much less injurious. The manipulation of tariffs and currencies to suit the greedy aims of manufacturers, landowners and capitalists is another evil which is constantly experienced or threatened in one part of the world or another; and if as a race we were yet enlightened enough to utter that great “Peace; be still!” which must some day be breathed over the troubled waters of international diplomacy, we should be enlightened enough to rid ourselves of these other evils. But instead, the change must be gradually worked up to. It is not even at all certain that the whole world will at one given moment decide to abandon war. It is not necessarily the case that the first nation enlightened enough to lay down the sword would immediately fall under the oppression of its armed neighbours, as [220]
Bismarck prophesied, and would no doubt have practised to arrange. Nor need we assume, as so many have thought it necessary to believe, that universal peace can only follow the exhaustion of universal war, the dove winging her first flight over the shambles of Armageddon. I do not for an instant believe that the actual horrors of war are the likely or possible source of peace; on the contrary, war always tends to breed war, partly through international exasperation, partly through the unashamed and cynical self-seeking of professional warriors. Peace hath her outrages no less severe than war. It is against the preparation for war, rather than against war itself, that we shall revolt.

Of course the increased urbanity of future thought, the tenderer conscience of the future, will help the cause of peace. The world’s rulers will be more humane, less reckless than those set up by the inferior morality and intellect of the present age. It is not from the rulers, but from the ruled, however, that peace will come. It is the peoples that will refuse to be the supporters of idle, useless, profligate and dangerous millions, trained to no duty but slaughter, skilful only in the service of national crime. Every decade will see the burden of armament grow heavier. In every decade fresh efforts will be made to lift the weight of them off the rich, the governing classes, and throw it upon the poor, the [221]
governed classes. The workers will be taxed, and their taxes manipulated to their disadvantage. And they must pay in person as well as purse. There is no civilised and highly developed country in the world that can possibly escape universal military service within the next quarter of a century, unless it be the United States: and only that country if the people of the United States abandon absolutely their present dreams of empire and renounce the luxury of an effective Foreign Office. As for ourselves, it is most likely universal naval service that we shall have to endure. And the rulers of the nations will play the chess of diplomacy, using the peoples as their pawns, until the pawns, grown wiser than the bishops, and more agile than the knights, reach the eighth square of intellect and become sovereign in themselves. It is not by high diplomacy that war will be abandoned, but by the will of the workers. Only a very careless and unthoughtful observer of the last fifteen years’ history can have failed to note the steady growth of international solidarity in labour questions. The trade societies of different nations frequently contribute to each other’s strike-funds: they constantly communicate and confer, and they do so with increasing frequency and effectiveness every time there is any special advantage to be seen in joint [222]
action against the common enemy—greed. Conceive for an instant what is going to be the effect of this when working men and women, infinitely the most important and most worthy part of the race, are no longer degraded by stupid restrictions of education, no longer brought up on the insane system of striving only for a stuffed memory instead of for a developed character, and have learned

to think about their political duties instead of only transacting them without thought, without any possible opportunity of learning how to think. The whole mass of workers throughout the world will come to an understanding. They have no possible conflicting interests which can compare in importance with the interests which, for their class, are identical all the world over. Already the improved morality of the peoples will have yielded improved governments, more enlightened parliaments, wiser statesmanship. The administrative organ will only need to be properly stimulated by the solid agreement of workers throughout civilisation. There is never the least sign of international or racial jealousy among working men in their international relations, and what, by reason of the clash of international interests and the danger of national aggression diplomatists could not accomplish, the irresistible volition of the unanimous peoples will force upon the cabinets of the world. It will come about by degrees. The preparations for it will be long visible, long misunderstood. And [223]
we shall usefully tinker at the question, often stave off little dangers of war by arbitrations, treaties of mutual understanding, peace conferences and the like; and though probably no great war necessary to reconcile the conflicting destinies of peoples was ever prevented by such means, we shall avoid many fights which might have arisen out of the vain notions of *prestige*, dignity, and national self-sufficiency. But once means have been found for the destruction of the machinery of war, the worst danger of war will have been got rid of: and then the practice we shall have had in settling disputes peacefully will be of the greatest service to us.

When the armies and the navies of the world are disbanded there will be a condition of affairs which it is highly necessary to consider. In all nations entitled to rank as world-powers there is an enormous military class. When the armies go home for the last time, and magazine rifles and machine guns become museum objects and nothing more; when it is no longer conceived to be the greatest service a man can render to his country to organise clubs wherein men may inexpensively learn how to shoot, so as to be able to kill each other with a creditable precision when the chance comes; then there will arise the problem of how to employ these disbanded drones: and to some this problem has appeared [224]
to present acute difficulties on account of the labour-problem involved.

But to apprehend anything beyond the most transient embarrassments from this cause is surely to misconceive the whole subject of economics. The men at present withdrawn from productive labour by employment, either transiently (as in countries where conscription is used), or more or less permanently (as in England), have to be fed, clothed and housed in any event; and they can only be thus supplied with the commodities of life by the labour of other men. What the term of their military service happens to be is immaterial to the subject. Whether there are standing armies and navies with long or short service, and a reserve; or armies and navies served for three years by successive drafts; the amount of labour withdrawn in any community is at any one period the same in that community. The return to civil life of the volunteer armies employed in the United States during the Civil War and the war of the deliverance of Cuba did not produce troublesome economic conditions; and only those persons who think that a society is enriched by the circulation of money spent in wasteful expenditure like the fireworks and banquets consumed in celebrating an event like the visit of a foreign potentate, or commemorating more or less irrelevantly the failure of “Gunpowder treason and plot,” can imagine that a nation would be [225]
impoverished by the vast accession to its productive power yielded by the abolition of armaments. Similarly, to think that the suppression of Woolwich arsenal and the closing of Krupp’s gun factory would be an industrial calamity instead of an enormous saving of national money, is to adopt the uninstructed view of politics which conceives of governments as self-supported and self-created institutions whose expenditure is a gift to the people; instead of as being organisations paid by the people out of earnings which would otherwise be enjoyed by themselves. This sort of conception, fatuous as it appears when once reduced to logical terms, is common enough. Whenever any object of popular desire appears inaccessible we are always being told that the Government ought to provide it—as if Government were a sort of deity capable of producing wealth from somewhere outside the world. But such notions have only to be for a moment examined in order that their fallacy may become manifest and palpable; and it is equally easy to see that the wealth-producing power of the men composing armies would be a direct gift to the community of the world if armies were abolished, and that the moneys formerly, but no longer, expended upon their accoutrements, weapons and sustenance would be so much waste obviated. [226]
Here will, in fact, be one of the many economies of a hundred years hence.

It will be convenient to digress, in passing, in order to notice one very curious contention sometimes rather fancifully introduced into discussions on the subject of universal peace.

It is stated that war is an inevitable feature of national life, and that it exercises a beneficent effect upon national character—that it fosters manliness and a respect for the virile attributes of courage, steadfastness and self-respect; that nations which have abandoned the art of war sink into effeminacy, slothfulness and destructive luxury; and that the peace of the nations, if it ever comes, will be associated with a terrible deterioration of the race. As to the notion that anything can prevent the abolition of armed conflict as a means of settling the differences of peoples, we may very well be satisfied to await the issue. No one who recognises the steady growth of humanitarian feeling; no one who remembers, even to deplore, our growing sentimentalism; no one who has insight enough to perceive that progress, at an ever-increasing speed, must inevitably be accompanied by advanced intellectuality, increased self-restraint and greater wisdom, can doubt that a process so illogical, barbarous and brutalising as battle must be banished, as well by the new humanity as by the [227] economic necessities of our race. But the notion of deploring, on moral grounds, the assured coming of a reform so salutary, calls for more strenuous reprobation. One would have thought it evident, from the popular effect of the war in South Africa, that, so far from being a matter for self-congratulation, this highly necessary war was a terrible lesson in the brutalising effect of armed conflict, not alone on the men actually engaged, but also on the people who remained at home. Indeed, since it is only a comparatively small fraction of a community that can ever be personally active in military operations, the effect on the home-stayers is evidently what the upholders of war as a civilising influence must be thinking of. It would be ridiculous, and it is quite unnecessary to the argument, to deny the fine qualities of determination, of fortitude before national disaster, and of calm confidence in the prowess of the nation’s arms which, in the bulk of the English people, the Transvaal war called forth. It would be just as idle to deny the sublime exhibition of patriotism and self-abnegation which, on one side at least, was provoked by the Russo-Japanese war. But it would also be foolish not to recognise the quite evident brutalisation which has followed our war in South Africa, the remarkable increase in crimes of murderous violence, and especially of double crimes—murder and suicide— [228] which has lately occurred. The true source of these increased evils is the reflex effect of familiarity (either at first hand, or more remotely through newspaper reading and through the personal narrative of returned soldiers) with the notion of violent slaying, and the diminished sense of the sanctity of human life which accompanies the spectacle of man-slaying by wholesale held up to popular admiration, and indeed necessitated and justified by the conditions of war and the duty of patriotism. No doubt it is true (as has been finely said) that there is one thing which is worse for a nation than war, and that is that a nation should be so afraid of war as to submit to aggression rather than fight in defence of its rights. But to subscribe to this doctrine, which no rational thinker will dispute, is a very different thing from agreeing that the nations would be otherwise than strengthened and civilised by the universal abandonment of battle. Probably we are as yet some decades from the time when we shall have sufficient nobility of sentiment to be entirely agreed, without a single dissentient, in recognising the enormous service to national and international morality which Mr Gladstone rendered when he had the courage to withdraw from the conflict with the Boers after Majuba. It will be long before we are logical enough to see that the fact of this magnanimity having been basely abused does not in the least detract from [229] its moral weight and moral beneficence. But the influence of such an act cannot be without effect upon progress. It is by such acts, and the possibility of their glad acceptance by nations of sufficient moral elevation to perform them, that war will be banished.

In the meantime, while noble virtues can be displayed by nations in time of combat, and by civilians as well as soldiers, it is a new doctrine that we are asked to accept when we are told that there is anything individually elevating to the character in sitting at home while someone else goes out and fights for that home’s protection. One of the least satisfactory features of public interest in games of manly endeavour and endurance, games of danger and violent effort, like football and cricket, is that of the very greatly increased numbers who “follow” these games and watch the fortunes of selected teams in the Cup contests only a very small proportion play the games themselves. Thousands of young men hardly see a football match from September to April, though they keenly follow the admirable descriptions of them in their sporting papers. It is taking a very short-sighted view to applaud the growing interest in athletics, which, just now, we show, as a sign of our manliness. Not very much endurance is required in order to bet on the success of a favourite team: and to assist, as a [230] contributor to gate-moneys, in paying selected athletes to endure risk and violent fatigue in a game which one does not play for oneself is exactly on a level with applauding the exploits of an army to which one contributes nothing but taxes.

Moreover, this beneficent effect of actual war-in-progress could only exercise

itself during limited and distressful periods. No nation is able to be seriously at war, in modern conditions, for very long, and great periods of recuperation must intervene between war and war; the combatant nations being meanwhile subject to aggressions from keepers of the peace, because they are not in a position to fight again with a fresh and an unexhausted adversary. Consequently, any beneficent effect must be expected to be exercised chiefly in time of peace. And, in practice, it does not seem to be the case that nations in which the military standard is high and the military class is exalted above the civil class, show always in any remarkable manner the virtues supposed to be fostered by the manly art of war. No one would contend that the average German is more self-reliant and self-respecting, quicker to decide on action in a moment of stress, braver, manlier, more enduring of reverses of fortune, than the average American. Yet Germany, where military officers are held in such esteem that [231] they can behave with unrestrained arrogance and brutality towards civilians in public places without provoking any signs of popular indignation, unless when their acts are commented upon in the socialist newspapers; and can even inflict disgusting and degrading indignities upon private soldiers without being officially punished, except where they have carried brutality to the limit (and they are punished with the greatest tenderness even then): Germany, I say, ought to show the virtues of a military state at their best. Whereas in America, where there is practically no standing army, and where military titles, the residue of wars conducted almost entirely by volunteer and amateur soldiers, are so common that the very holders of them treat these titles as subjects of humorous depreciation, the people are conspicuous for manliness, for high endurance, for patience under the reverses of fortune, for temperance: and in the average of physical courage America far excels any military nation. There seems to be no reason at all for apprehending that the obsolescence of militarism will have a deleterious effect on the manhood of the race: while there are incontestable evidences that it will greatly foster the equally important virtues of gentleness, humanity, and respect for the weak. Thus, while, for reasons of sentiment and common sense, war is certain to become obsolete before the end of this century, we shall find in the release of the funds and of the [232] labour hitherto employed in the organisation of war one of the greatest economies of an age which in all things will be thrifty: and there is no reason at all to apprehend difficulty in providing for the warrior who finds his occupation gone, when we have so reorganised (as we must reorganise) our social system, that no man will live in excessive luxury on the labour of his fellows, but that all will be contributors to a common frugality. [233]

[Contents]

CHAPTER XI

THE LAW A HUNDRED YEARS HENCE

Using the figurative words, “the law,” in their widest possible sense, to mean the entire system which governs the relations of the individuals in a community with each other and with the community at large, we can easily see that in a century’s time many changes of law will have taken place. If it be true that legislative restraints are mostly necessitated by the ill-conceived energies of mankind, and that the right function of the law is to assure to each citizen the largest possible liberty that is consistent with the equal liberty of every other citizen and of all, then it will be right to believe that the great extension of general intelligence, and the equally great extension of general morality, anticipated for the next century, will render many forms of existing restraint obsolete because unnecessary. Regarding offences both against the person and against property as manifestations, for the most part, of unintelligence, we may expect that increased intelligence will lead to a diminution of their number. In applying [234] statistics to an examination of the question whether and to what extent improvements in the general standard of education have in the past diminished crime, and consequently how far crime is likely to be still further diminished in the future, we must be careful to keep in sight two considerations—first, that an increased vigilance and elaboration on the part of authority may easily make it appear that crime has failed to diminish under educational influences, when it is only the detection and punishment of crime that have been rendered more perfect; and second, that if one kind of education have not had all the salutary effects expected of it, it does not follow that a different kind will not have all this expected efficacy and more. Manifestly, legislation against crimes formerly outside the reach of the law—that creation of “new offences” which one hears rather foolishly objected to—will increase statistics of crime, if we compute crime in terms of prison-admissions; and the fact that such increase, due entirely

to legislation, has taken place concurrently with some other reform, such as the improvement of education, obviously does not entitle us to connect the increase with the reform. The latter may even be operating in exactly the opposite manner, despite the statistics. A number of new offences were created, for instance, by what is called in England the Criminal Law Amendment Act, and it [235] would be easy for a shocked observer of prison statistics to observe, in a period of years during which the administration of that useful act was being perfected, dreadful increases in the crimes which it represses; whereas the fact probably is that crime of this sort has diminished, largely through the action of the very causes which would make it appear to have been increasing. Therefore, if anyone still argues that education as a means of diminishing crime has proved a failure, it is not upon judicial statistics that he must base his contentions. Probably that argument is obsolete: but if it were not, and if it were allowed all the validity of which it is capable, it would still furnish no ground whatever from which to throw doubt upon the expectation that in a hundred years' time crime will have diminished very greatly, as a result of the improved education of the new era. For indeed, as education is at present conducted, it would be rather a remarkable thing that it should have any effect upon criminality at all. What influence increased intelligence may have in restraining one part of the population from the desire to commit crime might easily be neutralised by the effect, on another portion, of the increased craft and subtlety imparted by education. Knowledge can facilitate crime as well as deter from it. A man who has not learned to write, it has been shrewdly remarked, will not commit [236] forgery: but that is not a reason for thinking that a knowledge of writing tends to promote criminality. The man who, being (perhaps unduly) proficient in it, becomes a forger, would not necessarily have remained blameless if he had continued illiterate. He would very probably have been a thief, which does not require penmanship: but on the other hand, the increased facility of obtaining employment when one can write might just as easily have saved him from some temptations to dishonesty. It is not very rational to expect a great moral effect upon character from the mere acquisition of knowledge. But from the moment we conceive that means and methods of education in the future will be valued in proportion to their influence in developing character, and especially intelligent self-control, it is impossible to doubt that the new teaching will be among the most potent of moral influences. One benefit derived from this will be the possibility of abandoning legislative restrictions whose effect is inimical to self-control and to intelligent self-protection. It will no longer be necessary to protect the people by law from the consequences of their own foolishness, and we shall have learned that it is much better for the public to be encouraged to safeguard its own interests than to be relieved of the necessity to do so. [237]

Anticipating, therefore, that many existing forms of restraint will have become obsolete because unnecessary, we may very fairly ask ourselves whether, in an improved moral and intellectual atmosphere, it will not have been found advisable to abolish other restraints and requisitions as a directly remedial measure. The suggestion may, at the moment, appear chimerical, but so must every intelligent anticipation of a coming time appear to anyone who approaches the subject without allowing for the difference of conditions, and conceives of changes which will take place so gradually as to be almost unperceived, as if they were to occur *per saltum*, without any process of slow moral preparation. So would nearly every social condition of the present age have appeared individually to a citizen of the world of 1800, if, possessing intelligence to foresee it, he lacked the imagination necessary to foresee the accompanying and subservient conditions. That public opinion should be so shocked by the execution of capital punishment, that only the most atrocious murders are thus punished—the sentence, where there is any real extenuation at all, being habitually commuted nowadays—is a condition which would hardly have suggested itself even to the most alert imaginations in an age where small thefts were constantly punished by death. Our sense of what may be called the accidental influences of punitive measures is even yet so little developed that [238] only a small minority of the public at the present day is able to perceive that the deterrent effect of flogging, as a punishment for violent robbery, is dearly purchased at the expense of the brutalising relish with which sentences of flogging are welcomed by the public, and even on the judicial bench, where expressions of regret that the same penalty cannot be inflicted for other crimes are still common. Yet it would seem obvious enough that the sanction given to acts of violence by the deliberate adoption of hanging and flogging by the law, which is supposed to be the exemplar of public morality, must tend nearly as much to perpetuate crimes of violence as fear of these chastisements to deter. In attempting to foresee the spirit of legislation in the future it is absolutely necessary to foresee concurrently the spirit of the communities by which the legislation will be adopted. Anticipating, as we cannot fail to anticipate, a sedulous care for moral effects in education, we must anticipate an equal care in legislation. It would be unworthy of the supremely logical age which assuredly is coming, to use all possible measures in the schoolroom to foster in childhood

self-reliance and intelligent self-protection, while continuing by “grandmotherly” government of the people to remove as often as possible any need for self-reliance in the adult. The advantages attending little bits of protective law-making often blind us to their ill-effects. It is no doubt very useful to provide, as we do provide, that condensed milk, when deprived of its full proportion of cream, shall only be sold in packages notifying that deprivation. If we did not do this children would be starved by their parents’ ignorance. But the necessity for this enactment is at least in part created by the existence of a host of similar laws, the aggregate effect of which is to give a general impression that anything sold as food is good and useful unless it bears some warning to the contrary; and meantime every evasion of commercial morality which does not come under legislative restraint is naturally held to be perfectly justifiable—not at all a good thing for commercial morality. Now it would be a highly perilous measure to abolish, at a stroke, all protective legislation against adulterated or impoverished foods. We have built up a social condition in which every man thinks himself entitled to be protected against such frauds. But in a community which has been taught to take care of itself, and protect itself against frauds by its own intelligence, such protections would be retrograde and injurious. The aim of legislatures in the next century will be to foster all kinds of self-reliance. They will perceive that even the high importance of a reform which can be more [239] or less easily enforced by law does not compensate for the bad effect of thus [240] enforcing it, if it could be maintained by the spontaneous vigilance of a wisely-nurtured public; and the degrading effect of superfluous law will be more dreaded than the temporary dangers against which the law might protect the citizens.

Nevertheless, it is inevitable that, during a period more or less extended, material progress will be accompanied by numerous legal enactments such as a perfect state would dispense with, and possibly the end of all of them will not have been reached even in a century’s time. How invention tends to promote legislation has recently been noticeable in the new laws affecting automobile traffic on roads. In a perfect state it would doubtless be unnecessary to provide legal machinery to compel the owners of powerful and rapid vehicles to respect the rights of their fellow-citizens and to abstain from running away without identifying themselves when they had caused an accident. In proportion as the moral condition of the next century approximates to perfection, such ordinances as the motor-car laws will be unnecessary. But for a long time new laws will always be coming into necessity as a result of new inventions. For instance, when, as was suggested in an earlier chapter, business is carried on largely through the medium of recording telephones, wirelessly actuated, special laws [241] will have to be devised to protect trade against the various kinds of fraud which this method of transaction would otherwise facilitate, and some methods will have to be devised for giving legal force to arrangements made by telephony, akin to the methods which now give legal force to written contracts. Similarly, various by-laws will have to be enacted to protect the public against the accidents incidental to the various methods of rapid transit that will have come into use. Probably it will no longer be necessary, and it will have been perceived to be injurious, to protect travellers against their own rashness.

It is a well-known phenomenon that periods of material prosperity and high wages are fruitful in crime. Probably increased consumption of alcohol in prosperous times is the sole cause of this. There can be no direct connection between wealth and criminality; the bulk of the criminal population is, on the contrary, poor. It would be idle to speculate as to whether the next century will or will not continue to legislate against intoxicants, because it is morally certain that intoxicants will have been legislated out of existence already, without waiting for the period when it would no longer be necessary to abolish them forcibly. For at present, and in the more immediate future, there is no ground whatever for anticipating that the legislative hand will be withheld wherever [242] law-making appears the simplest and most obvious method of getting rid of any crying evil: and there can be no doubt that the abuse of alcohol is an evil of precisely the sort that legislature will be active in suppressing. Some changes in the method of government will have to take place before Parliament can legislate against alcohol: but that it will so legislate before the middle of this century is morally certain. In what country the alcohol law is first likely to be passed is immaterial. Every country which adopts it will thereby assist in forcing the same measure upon other countries, because, with international travel constantly becoming cheaper and more easy, it is certain that numerous people who object to being deprived of stimulants and intoxicants in one country will migrate to others where their appetite can have full play, and will intensify the drink problem in those countries until these, too, are forced, or will think themselves forced, to legislate in self-protection. Thus such laws will become universal. No doubt this condition will be reached gradually, measures of restriction preceding measures of prohibition. But the end will be the same, and it will be forced upon the world as much by the increased evils inflicted by

alcohol on nerves increasingly susceptible to its influence, as by any other consideration. Anyone who has taken the trouble to observe the nervous and [243] physical condition of men and women in the average, during even so short a period as the last quarter of a century, must have been impressed by the marked increase of neurotic states, not merely in exceptional individuals, but in all the people. The neurotic temperament is much more adversely affected by alcohol than any other; and we are all growing more neurotic. All the conditions of modern life tend that way: and it is not alcohol alone that will have to go, but all sorts of habit-inducing drugs, such as morphine, cocaine, and the rest, all of which, like alcohol itself, will soon be so restricted in regard to their sale that their abuse will be rendered practically impossible, and their use restricted to a purely medical employment. It is even quite possible, and I have already ventured to predict,[1] that when the progress of neurotism has worked itself out, even such mild exhilarants as tea and coffee will have to be made the subjects of legal restriction. There exist many individuals at the present moment upon whom coffee acts as a stimulant nearly as powerful as alcohol, moderately employed, upon the rest of us—that is to say, they experience the same mild exhilaration after a cup of strong coffee as a moderate man does after a glass of burgundy or a whisky-and-soda. These effects are no more injurious, at present, [244] than those of a moderate use of wine or spirits: but they can become perilous, and may develop in all sorts of ways, when the nervous organisation becomes more delicate. Thus, the abolition of alcoholic beverages, at present the fad of a minority not always very respectable in the methods of its propaganda, will presently be an indispensable feature of social progress.

Unless all criminologists are wrong in their deductions, something like fifty per cent. of all crime will be got rid of when alcohol no longer exists to cause crime. There are further ameliorative influences certain to be at work which will tend to reduce the sorts of crime chiefly troublesome at present. Adopting the familiar division of crime into (*a*) offences against the person and (*b*) offences against property, it is very easy to see that what may be called private crime (as distinguished from crime against the body politic) will diminish automatically. When the extremes of wealth and poverty have become as much less marked as I have endeavoured to show that they must become, it is evident that the temptation to offences of greed will be greatly diminished. A large proportion of all these crimes arises out of poverty alone, or out of poverty coupled with stupidity. A man who has not enough intelligence to earn is very likely to steal in order to provide for himself; and one who is equipped by the knowledge of a [245] trade is consequently not so liable to be dishonest as one who is less hopefully situated. He is also likely to be more intelligent, and consequently better qualified to perceive that the balance of comfort is on the side of the honest worker and not on the side of the burglar or thief. Anyone who has had occasion to observe the proceedings of criminal courts must have noticed the frequency with which the description “labourer” is adopted by the offenders charged. “Labourer” means an unskilled worker—a man who has learned no trade, and brings nothing to his work but thews and sinews. It is much less common to find a trade claimed: one rarely sees a thief or burglar described on the charge sheet as “John Doe, carpenter,” or “Richard Roe, gas-fitter.” They do not even profess to have a trade. Of course where a man’s business is such as to lend itself to criminal pursuits, the case is different: one finds banknote forgers described as “engravers” and “lithographers,” and makers of counterfeit money as “die sinkers.” But in the average of crime—at least crime of the more stupid sorts—it is the tradeless man who is nearly always charged. It is impossible to resist the inference that poverty is a determining cause in most crimes of greed. In a hundred years’ time the spread of technical education will have thinned the [246] ranks of the unskilled. At the same time the inducements to honesty and steady industry will have been enormously increased through the universality of the profit-sharing system; and the position of the steady worker will have become so greatly more attractive than that of the casual thief, that only the utmost stupidity can tempt anyone to the latter’s course of life. Self-respecting labour for a share in the profits of labour, instead of mechanical toil for wages that do not bear any relation to profits nor to anything else except the fluctuations of the labour-market, will so elevate the average of industrial character that it will be rare for workmen to drift into crime. At the same time, and similarly, the restraint placed upon undue accumulation of wealth will diminish temptation to crimes of greed at the other extremity of social life. It will no longer be worth anyone’s while to organise colossal schemes of dishonest company-promoting. Thus, crimes against property are certain to become relatively infrequent, because the greatest temptations to them will have been removed.

Apart from the largely preponderating number of cases in which offences against the person—assaults and the like—arise now out of intoxication, the tendency to crimes of violence will also diminish as the temper of society grows [247] milder. An age so much advanced in sentimentality as to revolt against the cruelty of breeding horses for traction and cattle for food is not likely to be

fruitful in offences of violence. These offences, where associated neither with drink nor robbery, probably arise more often from jealousy between the sexes than anything else. It is unfortunately impossible to suggest that sexual jealousy can be wholly eliminated from human nature. But no doubt its violent exhibition will have been educated out of us to a large measure. Other personal offences, as rape, criminal assault and various criminal vices will doubtless diminish in frequency as a consequence of general moral improvement. In short, the work of the policeman will be greatly eased in the course of this century, and no doubt many functions at present relegated to the police, such as the direction of street traffic, the care of vagrant dogs, and the like, will be performed by officials of a different character. Even these duties will be far less onerous than they now are, when we have become intelligent enough to see that the best way for every man to secure his own freedom and comfort is to respect the freedom and the rights of others.

It remains an open question whether at some time during this century it may not be temporarily needful for the State to undertake the restraint of offences against the intellect, such as the publication of false or grossly exaggerated [248] news, and of matter calculated to encourage vice, as betting. No doubt the balance of advantage is in favour of the entire freedom of the Press; but it cannot be denied that this freedom is at present greatly abused. It would be easy to name a dozen types of periodicals whose forcible suppression would be an enormous gain to the public; and in an age so increasingly prone to look to the governing body for assistance in every conceivable matter no one can deny the probability of some legislative steps being taken, when the public first begins to concern itself seriously with public morals. But this possibility is much nearer at hand than the end of this century; at the latter period public opinion will probably be well able to take care of itself, and any laws of the kind I have suggested will, like numerous other forms of legislation, including many now operative, have fallen into desuetude because there will be no temptation to the misdemeanours they are, or may be, framed to repress.

The question of the form which the repression of crime will take a hundred years hence can only be answered if we first endeavour to see what the developments of penology, or the science of punishment, are likely to be during the next hundred years. Naturally, they will have the same tendencies as the society which produces them. We may safely anticipate that the more savage [249] punishments, as death, flogging and painful labour will be eliminated, together with all punishments that are not believed to be reformatory in their character. And even the relatively mild penalty of long imprisonment may to the gentler mind of a new age appear unduly vindictive.

Punishment will be regarded as a diminishingly necessary evil; and our “object all sublime” will not be to make it fit the particular crime for which it is awarded, but to make it diminish crime as a whole. Punition as a moral force will be judged according to its effect in two different directions, namely, its force as a means of reforming the convicted individual by preventing his relapse into crime, and its force as a means of deterring other persons from committing the same crimes at all; and of these two the second will be considered greatly the more important in an age that will be logical as well as mild; because it is obviously a greater object to produce an effect upon the minds of a possibly great number than to produce it upon the mind of one culprit. Consequently, although a benevolent solicitude for the reformation of the detected offender will not be excluded from the consideration of future penologists, the deterring from crime of the tempted classes will be much more demanded. As to this, it cannot be questioned that improvements in detection and in legal procedure [250] (eliminating the chances of escape for the guilty without endangering the freedom of the innocent) are capable of accomplishing a great deal more than could possibly be looked for from any alteration in the nature of the punishment used. Experience shows that hitherto a ferocious punishment not very certainly applied does not deter anything like so much as comparatively mild punishment with very little chance of escape. Coining, for instance, is less common now than when coiners were slowly pressed to death under weights, *if detected*; and the diminution of this crime has not been due to fear of the punishment now long abandoned; neither was that penalty removed from our system of criminal law because it had done its work and stamped out counterfeiting. On the contrary, improvements in the minting of real money, by rendering the detection of counterfeits easy, may be said to have almost eliminated the offence in question, and this result is all the more remarkable when we remember that, owing to the appreciation of gold, real silver shillings, half-crowns and other pieces just as good in assay as the royal mintage could be coined by counterfeiters at a handsome profit.

Our very proper anxiety to avoid every possible chance of committing and punishing the innocent doubtless enables many guilty persons to escape every [251]

year; and probably quite half the prisoners acquitted at every assize are really guilty in some degree. The jurisprudence of a hundred years hence will certainly have been so much improved that innocent persons will rarely be accused at all, and that guilty ones will not be able to escape on technical grounds: and with improved detective methods the chances of escape in any given case will be greatly diminished. What punishments are inflicted will be of a reformatory character, and no doubt provisional release, freed from the many crying scandals of the ticket-of-leave system, will play a great part in scientific penology. Recidivism will, of course, be the subject of much sharper punishment. In the meantime, the study of mental science in its relation to crime will have made great strides, and if the views of our own age in regard to heredity should be maintained, a very great source of crime will probably be got rid of altogether, because men and women with just that mental twist which leads to crime will, by one device or another, be absolutely prevented from propagating their race.[2] [252]

It is impossible to work out here the various methods of individual reform applicable to convicts of various sorts, because the nature of these methods must necessarily depend, to a great extent, upon the conditions of a society of which only the most salient and extreme peculiarities can be foreseen even by the most imaginative. But all evidence seems to suggest that actual crime will have become much diminished in amount, while the necessity for dealing with what may be called technical crimes—misdemeanours, and offences against regulations made for the convenience of society rather than for the defence of life and morals—will probably have been reduced to a minimum, partly by the intelligence of the population, and partly through the fact that the minor offences will have ceased to be dealt with by law, and will be sufficiently repressed by natural causes. Not only, therefore, will the amount of necessary restraint become less, through the diminution of crime and of temptation to crime, but the employment of legal restraint will be less demanded, the latter being recognised as, when avoidable, dangerous to public morals. And, while [253] criminal law will be less active, civil litigation will also probably be much less heavy. The same causes which will tend to make us more careful to avoid committing offences against the common right of others, will make us more scrupulous to perform contracts. And as a consequence of the improved morality which there seems every reason to anticipate, a hundred years hence, it will no doubt have become possible to execute a reform which many thinkers have desiderated as an element of perfected polity. It is hardly necessary here to recapitulate the arguments in favour of the contention that the cost of civil suits should be borne, as the cost of criminal prosecutions is always supposed to be borne, by the State. That the man who brings successfully an action at law, or successfully defends one, should be able to do so only at an expense to himself, is against public policy: and there are even now numerous cases every year in which even the unsuccessful party in a lawsuit is really doing the public a service. In a perfect state of public morality he would always be doing so: and in a hundred years' time he will certainly be more often worthy of public thanks than he is now—he will be less often seeking to impose or defend a wrong. As matters stand, it is notorious that the grant of costs following the judgment in a civil suit is only a partial relief to the successful suitor. He has to pay his solicitor [254] more than his solicitor can obtain leave from the taxing master to collect from the other side; while if (as not infrequently happens) the other side cannot pay, the costs awarded by the Court have to be borne by the winner of the suit. It is a frequent reply of dishonest defendants, when threatened with legal proceedings, that they "will meet the plaintiff in the Bankruptcy Court." On the other hand, a man will often submit to oppression rather than be subjected to the expense of even a successful defence. Every litigant who maintains his right, whether as plaintiff or defendant, renders very much the same service to the public which we often hear applauded on the part of persons who "come forward to prosecute" in criminal or misdemeanour cases. He is assisting to make probity profitable and evasion dangerous; in other words, he is subserving public morality and helping to repress dishonesty. It would be much to the public advantage that his costs should be borne by the public purse, and borne generously, every expense legitimately incurred being allowed him. Logically, he ought also to receive a sufficient, and even a fairly liberal, *solatium* for his trouble and loss of time: and an honest loser ought to be able to receive a certificate from the court entitling him to the same amenities, the withholding of which would constitute a deterrent penalty against factious litigation. But it may [255] be urged on practical grounds that to make the path of the litigant too easy would lead to too much invocation of the law, and that the full recognition of the public usefulness of litigants must be postponed to the millennium—which age of ideal perfection will not occur (it may be thought necessary to concede) a hundred years hence. And it is not difficult to imagine means by which the public can be protected against the factious and unnecessary litigation to which, in the absence of some safeguard, we should certainly be exposed. The plaintiff might be required to obtain some sort of *fiat*, such as is required now before a suit of

criminal libel can be prosecuted: and there would be no hardship in the litigant who failed to obtain the *fiat* being left to bear his own expenses up to the time of failure, though, in the event of his success, he would of course have them repaid. The legal machinery for obtaining permission to sue need not be made too complicated: it must not be allowed to develop into a sort of preliminary trial. Probably some sort of arrangement as the above will be instituted a hundred years hence, and all law-costs borne by the State, except in the case of obvious dishonesty or bad faith; the trouble and loss of time necessarily incurred exercising a restraining influence upon the litigious.

In regard to the general machinery of the law it would be tedious to attempt to [256]
foresee all the reforms of which the growing complexity of human affairs will certainly impose the necessity upon us. The clumsiness of a system by which important civil cases have to be tried three times, in ways differing in detail, before a final decision is reached, needs no insisting upon: and there is a manifest inconsistency in the fact that an action about a matter worth £101 can be twice appealed, while a man tried for his life, or something even more important than life, has no appeal at all against an adverse verdict, except to a secret tribunal of Civil Service clerks—for in the "commutation" of sentences the Crown stands for the Home Secretary, and the Home Secretary is necessarily obliged to depend upon his assistants, who in their turn may very possibly have to derive their information from officials whose credit would be damaged if some fact favourable to the prisoner came out. To admit this inconsistency is not by any means equivalent to admitting the necessity for courts of criminal appeal: and anyone who knows the methods of criminal jurisprudence in the United States must recognise that such courts are capable of abuse highly dangerous to public morality, so dependent upon respect for law. But with the great increase in scrupulosity and in the mildness of public temper which the tendencies of human development clearly vaticinate for the next century, it seems impossible [257]
to doubt that some method will be adopted by which criminal trials can be reviewed, even though the class of cases in which the necessity for review is most often mentioned now will no doubt have disappeared with the abolition of capital punishment. And it does not seem likely to be beyond the ingenuity of the coming time to discover some means by which civil cases can be settled in one trial, instead of requiring three, without danger to the justice of any individual suit.

It is sometimes questioned whether trial by jury will continue a feature of modern civilisation. The remark of a legal cynic that "the man with a good case is always safe with a judge, while the man with a bad case has always a chance with a jury," is sufficiently sound to make it a question whether juries are worth the trouble given to the members of them, and the vast amount of additional labour which their employment inflicts on the courts of which they are a feature. The conditions which make trial by jury "the blest *palladium* of our liberties" have passed away in civilised countries, and to a great extent in Ireland. It is no doubt characteristic of the British people that we should so long as this have retained the use of juries in civil suits, though even here there are many cases (especially in divorce and libel) where the average common sense of a jury is [258]
really helpful to the judge, and constitutes a check upon his prejudice or impatience. There was a time when the jury was a genuine safeguard against oppression in private as well as Crown cases, and it is like us, as a nation, to have retained them when their usefulness in this respect was happily obsolete. But it seems to the writer pretty certain that in civil trials juries will have been dispensed with long before the end of this century, and this dispensation will probably be the stepping-stone to a system whereby criminal causes will be tried by a bench of judges, instead of by a judge and jury. The whole tendency of modern conditions (in which must be included our growing, and highly discreditable, individual impatience of the trouble of jury-service) seems to point to this.[3]

Reforms of judicial procedure of course constitute only a relatively small part of [259]
the legislative work which will have been accomplished by the end of the century. Apart from the work of gradually remodelling the law with the idea (which nowhere seems to suggest itself to present-day legislators) of making it act beneficially upon public character, there will no doubt be a vast amount of work for the various parliaments of the world in codifying existing statute- and common-law systems, which in all communities have fallen into complexity and confusion of a degree which makes them highly unsatisfactory instruments of social protection: and there will also be a great amount of constructive legislation, particularly in regard to the tenure of land, to the simplification of conveyancing, to a more intelligent machinery of contracts, to the equitable handling of such accidental or conditional sources of wealth as we call "unearned increment" and the discovery of unexpected minerals, to the useful limitation of inheritance, and to other matters too numerous to be safely named. And in order that these great works may be accomplished, it is quite certain

that, not only in England, but in all those States where really free parliaments exist, great reforms will have been found necessary, and will have become so much a part of the machinery of legislation and administration a hundred years hence, that our descendants will hardly be able to realise how Government was [260] ever carried on without them. Indeed, it is by the difficulty of administering anything at all by parliamentary methods—every year more evidently breaking down—rather than by the desire to undertake large schemes of legislation, that statesmen will in a very short time be forced to initiate the changes whose full development will have become time-honoured by the end of this century. The organisation of political opposition in parliaments has reached a point which makes it evident that before long the minority in parliaments will have become a nonentity. The minority, in fact, has already, here and in other countries (of which the Austro-Hungarian empire is, at the moment, the most noticeable example), become so powerful for obstruction of business that, by a sort of paradox, its power is on the eve of complete destruction. At St Stephen's the effect of obstruction working in this manner is plainly visible. Whatever party is in power will always, so long as the existing system continues, be obliged to silence the opposition by the force of parliamentary machine; and whatever party is in power will always be accused of tyranny and autocracy by the other party. In practice there is no method by which any important government measure can be passed through the House of Commons except by force. It is a mere farce to make a show of debating the details in committee. Naturally the [261] Opposition, when it does not want the measure passed at all, will delay its passage to the last possible moment, and will make its enactment impossible unless a term is set to the deliberations of committee of the whole house. Whether the time granted by the Government be long or short makes no difference: it is impossible to pass any serious and complex bill except by the closure. In other words, the Government (which practically means the Civil Service officials and parliamentary draftsmen employed by the particular department concerned with the bill—the Home Office, the Local Government Board Office, the Exchequer, or what not) must triumph. Even the suggestions of individual supporters of the administration in power must be ignored, unless there is a cave which might turn out the ministry altogether. In detail, therefore, we are governed, not by Parliament, but by the permanent officials, so far as really important Government measures are concerned: and it is quite evident that bills introduced by private members will very soon not be considered at all. The private member is rapidly being reduced to nothingness by the force of parliamentary development. Meantime, the waste of public time by the introduction and debating of bills which the Opposition eventually succeeds in destroying, is appalling, and of course it is aggravated by the idiotic rule which [262] destroys at the end of each session all the work which has been begun and not completed. The system, not less imbecile, in which opinion is ascertained in Parliament is another great time-waster. It is only necessary to ask for a single moment what our grandsons, or even the younger of our children, will think of a Parliament in which a vote was taken by solemnly walking through lobbies, with elaborate arrangements for counting and checking the members (when it might all be done by the simple use of an electric signal in front of each seat in the chamber) in order to perceive the miserable inadequacy of even the mechanical arrangements of all the parliaments of the world. And if even all the crass follies and mediæval stupidities of modern parliamentary arrangements were reformed, as nine-tenths of them could be by any competent board composed of a few engineers, electricians and architects, we should still be in possession of a legislative machine such as the intelligence of a hundred years hence would laugh to scorn if its restoration were suggested.

Nor is this all. The whole institution of parliaments, as a contrivance for giving effect to the will of the peoples, has long been utterly inadequate, and must be reformed from the bottom. We elect members to carry out schemes of legislation and forms of policy never fully, and sometimes not even partially, formulated, [263] upon which, even if they were set out in full detail, we could not possibly have any complete influence in giving our votes. For instance, let us suppose that, at a general election, one party wishes to increase the Navy, to abolish publicans' compensation, and to legalise marriage with a deceased wife's sister: while the other party not only objects to all these three proposals but also wishes to put a protective tariff on foodstuffs and machinery, to give Home Rule to Ireland, and to disestablish the Church of England. A Home Ruler who was also a teetotaler could not vote for either party without outraging one or other of his convictions. A believer in the support of our national supremacy who also considered that the Church ought to be disestablished would have to choose between voting against the increase of the Navy or against the Disestablishment: and the Deceased Wife's Sister Bill advocate must vote against all the proposals on the other side (all of which he may agree with) if he do not wish to assist in perpetuating what he believes to be a hardship to his fellow-countrymen, and very possibly to some of his own friends, or to himself. And any of these perplexed voters, having somehow contrived to strike a balance with his conscience, and to give a vote,

will, perhaps, in a year's, or in six years', time find that he has been the instrument of placing in power an administration which is now proceeding to [264] pass measures that he abhors. He has no redress. Nor, abandoning the extreme case of such highly-mixed policies as I have endeavoured to amuse the reader by imagining, has the voter who changes his mind, or who finds that he has been bamboozled with false promises, any means of helping to undo the harm he has helped to do. It used to be said that, on an average, parliamentary government worked well—that it carried out in a rough way the will of the people. But the peoples of a hundred years hence are going to be much more particular about matters of such high importance. They are not going to be content with a rough approximation in matters of the very highest moment when they are able to secure with perfect accuracy most of their wishes in matters of quite minor importance. They will not be satisfied to know exactly what time it is at any moment of the day (as of course they will know, all instruments for time-measuring being controlled by wireless synchronisation) and not to know exactly what their rulers are going to do about matters upon which the very fate of the country may depend. Neither will they have remained so stupid as to think that whatever one body of politicians considers right must *be* right and that whatever another body thinks right must necessarily be wrong. It is quite certain that in a [265] really intelligent age so clumsy a system as that of party government will have been relegated to oblivion.

The political machinery to replace it will be of a nature determined by causes much too complex to be foreseen, except in the merest outline, as yet; and probably it will, like most political institutions, be a development rather than an invention. The system, already talked of, by which any matter of great national importance should be made a *referendum*, the subject of a direct vote by the whole nation, is no doubt capable of ingeniously modified arrangement so as to provide for its expeditious use, without undue interference with the course of ordinary business. But obviously this device is only capable of limited application, and it could not be employed at all, without producing dangerous confusions and incongruities, except in a community whose political education had made strides almost inconceivable in the light of our present limited experience. It is difficult to see how the general legislative business of a considerable nation could be carried on unless by committees of a parliamentary character; and limited as we are by the history of political institutions arising out of states of public intelligence which will have become contemptible in comparison with the intelligence of the next century, there is a difficulty in [266] conceiving how such committees or parliaments could work out otherwise than on some sort of party system. But the analogy of progress in general may help us to a conjecture, which is here offered only for what it is worth. All progress, as we know it, is a development from the homogeneous to the heterogeneous. One form of progress consists of the development of specialism. At one time, and not so very long ago, every housewife made her own jams, pickles, perfumes, essences and condiments, which are now purchased ready made. A man of science, in Davy's time, often embraced a number of different branches as his province; whereas now even a single science is seldom completely handled by any individual professor, entomologists differentiating themselves from general biologists, and coleopterists from general entomologists. Does it not appear likely, then, that the functions of the politician and of the legislator will presently be differentiated, with great advantage to nations? In a legislature of the present time professional law-makers are numerically few, and not very highly regarded. While in a matter relatively unimportant, like coach-building, civilisation has made specialism necessary; in a matter of the highest importance, the making of a nation's laws, we continue to trust the general practitioner, and the suggestion that specialists alone should be employed in it would probably awaken a torrent [267] of objection not unmingled with execration. But specialism of all sorts will have extended its sway to such an extent a hundred years hence that the likeliest solution of the difficulties at present envisaged is that the business of law-making will be relegated to a specially qualified and specially educated class, and that parliaments, if they exist at all, will have nothing to do with it, but will concern themselves with what they are often rather contumeliously told now is not their business (though it ought to be); namely, the management of international policy. The way in which this evolution will come about is, moreover, fairly easy to imagine. At some time during the century the manifold confusions, inconsistencies and evident inconveniences of the existing *corpus* of the law are pretty sure to require drastic and laborious treatment, which can only be administered by professional experts. At the same time, the public, having awakened to the ludicrous fact that laws are passed in every session of every Parliament in the world, which, when they come to be administered, break down because they have either been so stupidly and unimaginatively conceived, or so clumsily expressed in the statutes which embody them, that practical working immediately reveals their fatal defects. A clever young lawyer once said to the present writer that he knew of no intellectual pleasure so delightful as [268] that of discovering how to circumvent the provisions of an Act of Parliament.

This diverting, if immoral, remark illustrates the faults of a social system in which laws are made chiefly by persons having little experience in the working of laws, and elected to that duty by persons having no such experience at all. Having in mind the fact that international law is already relegated practically to specialists, it requires no great effort of imagination to foresee that the Hercules that will cleanse the Augean stable of the Statute Book will be a committee of professors of law. And once the public has become familiarised with the idea, what more natural than that a similar body should be formed to provide against such legislative blunders as we were all recently laughing at, when, having provided for the restraint of habitual drunkards by placing them on what was called the black list, Parliament presently learned that it had so framed the law that no one could be black-listed except by his own consent? The development from this to a system by which laws would not merely be amended, but devised *ab ovo*, by professional legislators, is easy to foresee; and with properly-devised precautions to ensure that the laws created shall express the will of a sovereign people sufficiently educated in political duty to possess a will worthy of consideration, probably no better solution of the legislative difficulty can be imagined.

[269]

The conduct of foreign affairs is a matter much less easy to reform. If despotisms were not such desperately untrustworthy things, a good sound autocracy would probably be the best form of government for the function of conducting the affairs of one nation with another. The extraordinary diplomatic success of Russia is an evidence of this. But Russia also illustrates the drawbacks of despotism. In its management of foreign affairs Russia has (despite the habit which its departments occasionally display of acting in conflict with one another) beaten all the civilised nations. Russia has a “continuous” foreign policy. There are no changes of ministers to nullify each other’s work and to encourage the diplomatists of other nations to procrastinate and shilly-shally over negotiations in the hope that a general election will bring in a new set of statesmen, easier to deal with. And Russia can herself procrastinate, prevaricate and play all sorts of tricks, neglect her promises, ignore her pledges, and prosecute her cryptic aims, without the smallest fear of a question in Parliament to spoil her game by letting all the world into her dark and devious secrets. The more a nation becomes democratised, the less competent it is to manage its foreign policy against less democratic nations, and a truly popular Government is, in the present state of the world, about the worst conceivable instrument for that purpose. With an ever-increasing democratisation of all governments such as we are sure to witness during this century, foreign offices of the present kind will become more and more incompetent until some sort of machinery is invented in their place.

[270]

Nor will the disappearance of the ultimate resort to arms, as a possibility always threatening in the background, tend to improve matters. It will, on the contrary, make them worse. There can be no doubt that the awful fear of war, which must haunt the pillow of every statesman in our day with dreams of pitiable horror, does exercise an influence in settling controversies which, without this terror, would drag their slow length along from generation to exasperated generation. And if we try to imagine that the increased conscientiousness of a better time will help nations to deal more honourably with each other, it is to be feared that even the vast progress of the quick-moving century on which we have entered will not suffice to bind the princes to its pleasure and teach their senators wisdom. It is unfortunately in regard to honour between nation and nation that conscience develops most slowly, and many a man who would scorn to trick a fellow-citizen, or even defraud a railway company, and who would quite possibly hesitate before smuggling a box of cigars through the custom-house, will calmly advocate acts of international dishonesty and oppression abhorrent to any conscientious mind.

[271]

There can be no doubt that the most deleterious influence of our times, which encourages nations to delay and deny to each other justice and the fulfilment of solemn obligations, is the habit of waiting upon the chances of a minister’s fall, and a resulting change of policy. So long as almost any day may bring a new set of statesmen, predisposed against anything which their predecessors may have approved, diplomacy will be disfigured by ways that are dark and tricks that are vain: and the logical twentieth of the centuries may be trusted to perceive this. Consequently some method will have to be devised by which a continuous foreign policy may be made compatible with the performance of a nation’s will. And here the wiser nature of the new age will assist the constructive genius of the reformer. No doubt the habit of changing our minds on the basic principles of government about once every six years will have been eradicated. Peoples will deliberate more intelligently upon the important questions which they decide by their votes: and it will no longer be thought—or rather, we shall no longer act as if we thought—that a modification of general opinion in regard (say) to Home Rule for Ireland must necessarily carry with it a change of opinion as to whether it is desirable to extend our influence in Afghanistan. When this error is

[272]

abandoned, probably foreign affairs will no longer be made part and parcel of the work of the same set of men that is elected to manage domestic policy. It will then be possible for the people to express—as they rarely have any opportunity to express under the present system—their sovereign will in regard to international matters. And here, as everywhere, responsibility will certainly exercise an educative influence. When men intelligently realise that by their votes they are deciding the fate of their country, they will deliberate long before yielding a decision so momentous. Inasmuch as the foreign affairs of any nation are truly understood only by a very limited class, because very few people are willing to give up enough of their leisure to the studies necessary for such an understanding, it seems reasonable to think that one feature of the polity of the year 2000 may be the limitation of the right to vote on foreign affairs to men and women who have demonstrated in some sufficient manner their competence to assist in directing the action of their representatives in matters so intricate. The increased leisure with which other reforms already foreseen will endow the people will of course facilitate the acquirement of this competence, and the right [273] to vote on foreign affairs will doubtless be a coveted social distinction, subserving the perennial love of titles and the childlike pleasure of having letters after one's name. Nor need we be too much daunted in this conjecture by the whispered word "oligarchy." When oligarchy really means government by those best qualified to govern—the nature of this "bestness" being intelligently determined—oligarchy will be recognised as the most satisfactory form of government: and in order to exclude objectionable one-sidedness in the method of selecting voters for the high duty of guarding the nation's honour, no doubt some method of selection by vote can be discovered, free from liability to reintroduce the baleful evil of party.

Coming now to other functions of a State, the most obvious subject for conjecture is that suggested by the tendency in recent times of governments (and following their example of municipalities) to engage in trade. The comment which gained currency over a decade ago, that we were all socialists then, is still more justified now. Will States continue their increasing practice of usurping the place of private adventurers? Will railways, canals, telephonic and teleautographic systems, street conveyances, and so forth, be owned and controlled by various public authorities, after education, some other functions, [274] including the feeding and clothing of poor children during school age, and the care of the unemployed (which States before long will certainly have embraced) have by a more enlightened polity been returned to the proper hands? The whole question of whether socialism is a probable solution of the difficulties which its advocates believe it capable of solving is here involved. Applying our familiar principle of estimating the tendencies of the future by the trend of events in the past, it seems certain that there will for a good many years immediately to come be an increase in the functions assumed by the State: but that the whole plunge into socialism will not be undertaken. For, while measures undisguisedly socialistic in character are more and more advocated and adopted, the open principle of State socialism seems to find less support every year. Whenever distress becomes prevalent, plenty of writers, for instance, loudly denounce Governments for not finding work for everyone who fails to find work for himself —so long as he is a man! (No one appears to think it the Government's duty to find work for women.) But when socialism is openly propounded, the same authors just as vehemently denounce the socialistic system to which this principle of regarding the State as the duty-bound employer of the workless [275] clearly tends. What will most likely happen is that devices, more and more socialistic, for dealing with emergencies, and inconveniences of various sorts, will be adopted and maintained until their own inconvenience and injustice have made themselves felt: and then a more reasonable age will get rid of them—better remedies having meantime been discovered—at the same time perceiving their deleterious effect upon private responsibility, and wondering why it has tolerated the old methods so long. In other words, socialistic experiments will have demonstrated their own evils before the habit of indulging in them has gone so far as to allow States to drift the whole way into socialism. It is even possible that the example of some single nation, drifting thus far, and setting up a socialistic State, may serve as a useful warning to the rest of the world, and determine the gradual abandonment of the dangerous tendencies which will have increasingly manifested themselves. For it is certain that, unless in exceptional and abnormal instances—of which the Australian Commonwealth is very likely to furnish an example—political systems will always continue to develop by evolutionary, and not by revolutionary, steps. We shall pass gradually, and by a process of construction and elimination, from one condition to another, until the very greatly improved system of government and [276] administration whose period of existence I have ventured to place at about the beginning of the next century, has become general throughout the world.

We may, for instance, very easily imagine how a more intelligent electorate will abolish some abuses, by considering the condition of the post-office department

of this and other countries. It is hardly thinkable that, during any period of the world's history, the business of carrying letters can be thrown open to anyone who chooses to undertake it. If there were nothing to be dealt with except the domestic correspondence of each nation, probably it would be a great deal better that it should be thus thrown open to competition: it is hardly likely that the vast business of international correspondence can ever be satisfactorily conducted, except by administrations acting in the name and behalf of every State. But there is not the least reason for thinking that the abuses which deface the postal department of this and every other nation will be perpetual. The British post-office contributes annually a "profit" of several millions sterling to the Exchequer. Every person who writes a letter, therefore, is taxed for doing it. In proportion to the intelligence, commercial enterprise, family affection, or professional diligence by which he is prompted to use correspondence, every one of us is compelled to contribute something more to the up-keep of the State than [277] his neighbour who is too lazy, too ignorant or too callous to trouble himself with letter-writing. No doubt it is impossible, without a loss which would amount to subsidising, in an equally objectionable manner, the users of the post-office, to conduct that department except at a profit of some sort: but it surely will not be pretended that it could not be conducted without exacting such a surplus as the post-office does annually contribute to the Budget. The vicious manner in which we treat the postal service as a sort of trading department, expected to yield the Chancellor of the Exchequer a convenient sum towards his expenditure, is illustrated by the disgraceful underpayment of the minor officials, such as postmen, small post-masters, telegraph messengers and the like. The post-office buys its labour in the cheapest market: there is but too much reason for the belief that it treats with oppressive harshness attempts on the part of its servants to better their wages by organisation: and when reproved in the House of Commons for sweating his work-people, a postmaster-general can always reply, amid applause, that he dare not embarrass his right-honourable friend the Chancellor of the Exchequer. The polity of the enlightened future will assuredly desist from penalising intelligence, enterprise, and the other commendable characteristics which tend to increase a man's correspondence; and the [278] postmaster-general who will be praised a hundred years hence will be that one who has succeeded in managing his department with the smallest possible surplus. We have only to envisage the obvious justice of this ambition to perceive the objections which attach to the adoption of trading functions by the State. Though it is very likely that railways will be nationalised in this, as they have been nationalised or subsidised in many other countries, it is quite certain that if we do nationalise them we shall be compensated by none of the advantages which make us tolerant, and even unconscious, of the abuses of the British post-office—itself in most respects one of the least imperfect of bureaucracies. The faults generally found with railways are precisely the faults of bureaucracy, and in proportion as railways become more and more united in their policy, through amalgamation and arrangements for mutual assistance, those faults constantly increase. The same will presently be found true of all governmental usurpations of private enterprise: and it cannot be doubted that in this, as in so many other respects, the functions of governments will be greatly reduced a hundred years hence.

One subject which cannot be neglected in any attempt to foresee the conditions of the law in the next century is the delicate and difficult one of marriage laws: [279] and on no subject are differences of opinion so numerous and so acute. All that seems to be generally agreed is that under the present system inconveniences and immoralities occur: and it is (of course) supposed to be a corollary that if the system were changed these inconveniences and immoralities would disappear. This is the usual method of considering social difficulties. Hardly anyone will consent to base plans for the future upon experience of the past. It is always presumed that new laws can reform abuses, without changes in the spirit of the age, which gives rise to the abuses. One class of thinkers, despairing of moral improvement, considers that, immorality being irremediable, the only thing to be done is to give it sanction; as it must exist, it must be made respectable and unscandalous. Another set of reformers would penalise immorality by forbidding the guilty party in a divorce suit to re-marry, just as there are people who would prevent the physically unfit from marrying at all. Both forget that the prohibition of legal unions is much more likely to lead to an increase of irregular connections than to produce any other effect. No doubt we could improve the physical standard of the legitimately born by the prohibition last digressively mentioned: but it would be at the expense of an increase in illegitimate births [280] accompanied by the additional disadvantage of bodily weakness. Similarly, so far from the prohibition of re-marriage restraining the immorally disposed, it is much more likely that it would encourage them: the fact that a co-respondent could not be called upon to marry the woman divorced in consequence of her guilty association with him would hardly act generally as a deterrent; while, if he had been willing to face the probable consequences of publicity, expense and inconvenience attending a liaison with a woman under coverture, the co-

respondent would not think it necessary to abandon his confederate, if he wished, and she were willing, to continue their connection after all the penalties had been suffered, merely because the law prevented a regular union. It is agreed by all jurists that the only justification for the greater severity with which matrimonial infidelity is visited on women as compared with men is the greater social degradation with which society visits women who have offended. To penalise their offence by prohibiting re-marriage would only perpetuate their degradation, and does in fact so perpetuate and increase it in countries where the condemned party in a divorce is forbidden the altar.

On the other hand, to recognise a sort of promiscuity, as some writers have suggested that we shall be obliged to do, would probably be attended by worse [281]
effects than the bold and straightforward acceptance of polygamy as a necessary remedy for the excess of feminine population, which a writer of letters to the shocked and astonished newspapers of this city recently proposed. Neither expedient is capable of being adopted: nor does there seem much likelihood that public morality can be improved by legislation, though it is certain to be much improved by the spontaneous amelioration of public sentiment. No doubt in one or two particulars the marriage laws will gradually undergo amendment. It will be realised that it is much more immoral to compel unwilling couples to live together matrimonially, than to set them free to remedy one of the most hideous of all possible mistakes. The difficulty of determining what shall be done where one party wishes for divorce, while the other does not, is greater: but on the whole it will probably be considered more conducive to morality to dissolve the marriage here, after a precautionary and experimental period of provisional separation, than to insist upon its perpetuation. That age will only be ripe for such a reform as this, which, by moral progress, has rendered intolerable the position of a libertine capable of entering into matrimony with the deliberate intention of getting out of it again when it ceases to be attractive, and in which [282]
the social estimate of a person who acted in the same manner through instability of character would be not much better. In any reform of the kind suggested, it would no doubt be arranged that pecuniary liabilities, allocated to the support and education of children, would follow the party insisting on divorce; and this also would act as a check upon dishonest contracts of marriage.

Thus, for any radical improvement in the system of matrimonial connections, we must look to a corresponding improvement in the spirit of the age, and the first step in advance will have been taken when marriage ceases to be the only legal contract which is enforced notwithstanding the ignorance of a contracting party as to the engagement entered into. The frequency of divorce petitions will be greatly diminished from the time we get rid of the idiotic and almost incredibly wicked convention by which we take every possible precaution we can think of to ensure that a girl, when she marries, shall have no possible means of knowing to what she is committing herself. No more ingenious contrivance for obtaining marital infelicity could be imagined. The next step will have been taken when it is recognised as disgraceful for parents to put pressure upon the inclinations of their children of either sex to induce them to marry, and when social execration [283]
renders such pressure impossible. Concurrently with this, or as a result of it, a third step will be some abatement of our present entire neglect of any demand for good character in a bridegroom who would be outraged if he thought that the least aspersion could be suggested concerning his bride. In other words, the greatest improvements in the status of the world with regard to matrimony will be effected when we recognise the claim of woman to be made the equal of man in knowledge, in discretion and in social rights. No legislative reform as yet ever suggested could have anything like as much effect in removing the evils under which we groan, in respect to matrimony, as this natural and inevitable development.

Naturally the improvement in the position of women in the new age will not arrive at a bound, nor will their rights in relation to marriage be unaccompanied by other rights at present withheld, and perhaps not always unreasonably withheld. On the contrary, the recognition of one set of rights will facilitate and accelerate the recognition of the other. It is generally agreed that the tendency of the sexes is to become less divergent, intellectually and morally, for reasons connected with what Spencer calls “the less early arrest of individual evolution, [284]
and the result everywhere seen throughout the organic world, of a self-preserving power inversely proportionate to the race-preserving power.”[4]

As it will have been realised, long before the advent of the next century, that the surest way to improved capacity is to be found in increased responsibility, women will not, a hundred years hence, be allowed or compelled to shirk their political obligations. We may see with half an eye that every year women are becoming more capable, and also more desirous of aiding the counsels of the public: and in some of our Colonies, as well as in some States of the American Union, they are already voting, and voting (as it turns out) with the most

wonderful intelligence and usefulness. The influence of the female vote in, for example, New Zealand has been for some time perceptible in the legislation of that highly-enlightened colony: and I never heard anyone object to the results of this influence except persons whose conduct, or the conduct which they approved in their associates, was likely to be inconvenienced by them. It is no doubt true that women are a great deal more fond of demanding that the law should do work which it would be better to leave to natural developments of public character than could be wished: but then so are men, and it is an unquestionable thing that the misdeeds which men more readily condone than [285] women are much more likely to be bad for public morality than those which women condone more freely than men. There is no particular reason for thinking at the present time (though there was ample reason for thinking a few decades ago) that women will be more prone to legislate unnecessarily, and therefore mischievously, than men: and we are in any case bound to pass through a good many years of parliament-worship before we awaken to the fact that the law cannot do everything, and that any reform which is accomplished by the spontaneous influence of public opinion is always a great deal more complete, a great deal more conducive to public self-respect, and a great deal better adjusted to the special requirements of every individual circumstance that it touches, than one which is laboriously and mechanically embodied in statutes which cannot but be imperfect, cannot possibly fail to act oppressively and unjustly in one place or another, and frequently prove to be unworkable from beginning to end. [286]

---

1 *Ante*, Chapter II. ↑

2 Against some methods of securing this object no doubt the unintelligent sentimentality of the present time would rebel; but if any inconsistency be detected in my suggestion that the next century, which is expected to be even milder than this, will accept them, it only needs to be replied that the gentleness of our descendants will be a reasonable and ordered gentleness, not a mere effect of morbid sentimentality. They will not hesitate before an apparent and temporary cruelty which is capable of preventing much greater suffering in a much greater number of persons. The crime of permitting children to be born with brains abnormally predisposed to evil of any sort will more greatly revolt an intelligent age than any conceivable measure adopted for its prevention. ↑

3 It may, perhaps, be thought that the disuse of trial by jury would be liable to perpetuate a somewhat glaring abuse of our present jurisprudence—the disproportionately severe repression of offences against property as compared with the disproportionately light repression of offences against the person. But the mere fact that the “unlearned” bench is conspicuously inept in this particular is no reason for thinking that “learned” courts would be so: and meantime, as judges, like other men, are children of their epoch, we may suppose that the increased mildness of the new age will be reflected here as elsewhere, and that extenuating circumstances will be allowed more weight in determining a sentence for larceny, and less weight in determining a sentence for assault. ↑

4 *Study of Sociology*, Chapter XV. ↑

[Contents]

CHAPTER XII

GENERAL CONCLUSIONS

“On the other hand, after observing how the processes that have brought things to their present stage are still going on, not with a decreasing rapidity indicating approach to cessation, but with an increasing rapidity that implies long continuance and immense transformations; there follows the conviction that the remote future has in store, forms of social life higher than any we have imagined: there comes a faith transcending that of the Radical, whose aim is some re-organisation admitting of comparison to organisations which exist. And while this conception of societies has naturally evolved, beginning with small and simple types which have their short existences and disappear, advancing to higher types that are larger, more complex, and longer-lived, coming to still-higher types like our own, great in size, complexity, and duration, and promising types transcending these in times after existing societies have died away—while this conception of societies implies that in the slow course of things changes [287] almost immeasurable in amount are possible, it also implies that but small amounts of such changes are possible, within “short periods”—Herbert Spencer: *The Study of Sociology*, Chapter XVI.

It has repeatedly been necessary, in the course of this survey, to stimulate the indulgence of the reader by a reminder, based upon the speed of our progress in the past and its steady acceleration in recent decades, that there is much more

danger of underestimating than of exaggerating the advances likely to have been achieved a hundred years hence. In order to guard against misconception of the manner in which these advances will be brought about, it is now advisable to mention specifically what has been once or twice hinted parenthetically, namely, the fact that the progress of the Future is certain to be produced in a way perfectly capable of being deduced from the manner of our progress in the past. One of the most fruitful causes of error in existing prognostications has been the tacit assumption that, at some vague moment in the spacious middle-distance of the coming time, sudden and cataclysmal movements of society, and also unexpected and revolutionary discoveries in science, will occur: and it is as a precaution against one aspect of this mistake that a weighty quotation from the writings of one of the sanest and most perspicuous thinkers who have ever [288] written upon that science of society which he may almost be said to have created has been recalled to the memory of the reader at the head of this chapter.

The forecast now almost concluded, imperfect and visionary as it must necessarily be, was commenced with some reflections on the rate of future progress made probable by the movements of the recent past. But nothing whatever can be deduced from what history, remote or recent, shows us, to suggest that any stable institution can be created otherwise than by steady development: it is only the speed of development which is likely to alter, and even this will only alter by a progression gaining impetus from the influence of its own components. Whether we consider material improvements effected by science and invention and the interaction of these; or social improvements effected by readjustment of the conditions of life forced upon us through the influence of intellectual and moral changes in the individual units of society making themselves felt as aggregated forces; the manner of attainment is nearly identical. It is commonly objected to this view, that whereas science and invention commonly progress in a movement characterised (so to speak) by a succession of jerks, social conditions change imperceptibly. But thus to object is to overlook the fact that, while no doubt society develops from time to time certain needs whose growth is so steady as to preclude the possibility of pointing [289] to a final moment when the satisfaction of them has become at length inevitable, yet, when this satisfaction is gained by legislative enactment, there is always a moment when the public, ripe for a given reform, takes definite possession of it. For example (to name a comparatively recent case), no doubt the desire for some method by which the public could distinguish between foreign and home-made articles of merchandise had for some time been generally felt before the passing of the Merchandise Marks Act fixed a moment at which all dubiety on the subject would vanish, by endeavouring to require that any imported object bearing marks calculated to give the impression that it had been manufactured in England should also bear a definite and correct statement as to its place of origin. Whether we consider this enactment to have been desirable or not, it is impossible to deny that there was a specific moment when it took effect. And similarly, the bill for the repression of secret commissions in business has come so near to being passed through Parliament that many people imagine it to be already law, though it is not, at the time of writing, even (in a technical sense) before the legislature. Without question, therefore, public opinion is ripe for this reform, and has with great gradualness become so: but the reform itself, when it takes place (as it may quite conceivably have taken place by the time this book is [290] printed), will occur suddenly. There will be a day when the manager of a business house could, with immunity from any overt punishment except the loss of his employment, receive a secret bribe from another house with which he was doing business on behalf of his master; and a succeeding day on which, for the same offence against commercial integrity, he could be charged before a magistrate and ultimately punished by the law. Thus the difference between scientific progress and social progress is not so great as has been sometimes imagined. And on the other hand, although to the casual observer scientific discoveries and new inventions often appear to have been attained at a single step, to a person interested in the particular branch of science, or the particular path of invention where a new achievement occurs, it is generally quite evident that the latter has been led up to by steady progress extending over a long period. The existence of unidentified constituents in atmospheric air, for instance, must have been long suspected before the isolation of argon gave, to the public eye, the impression of a sudden discovery: and astronomical disturbances have generally puzzled a great army of observers for a long time before the public is indulged by the announcement of a “new” star in the heavens.

To the reader who has been good enough to grant any validity at all to the [291] arguments by which I have sought to show that, as time goes on, there will be a decreasing tendency to attempt desired reforms by legislative process, and an increasing tendency to make the public the guardian of its own security, it will be evident that any differences which exist between the nature of scientific progress and the nature of social progress are likely to be accentuated rather

than diminished in the course of this century. A change brought about by the spontaneous activity of the people naturally occurs without the definite line of demarcation created by an Act of Parliament.

But there is one way in which the analogy between scientific and social progress will be noteworthy. It is a commonplace of industrial history that an improvement in one machine, or the introduction of some novel method of applying power, always produces, and may very often necessitate, modifications in a number of procedures not previously seen to be connected with it: and great results from little causes flow. No one foresaw, when Mr Edison discovered the differences in the electrical conductivity of carbon induced by slight variations of pressure—a discovery at first utilised only in the micro-tasimeter, the appliance used for measuring small changes in the size of objects submitted to it—that the same discovery would presently render commercially practicable the electrical [292]
transmission of speech and numerous other conveniences, themselves the progenitors of fresh inventions now in constant use. Similarly, political and social changes quite easy to foresee will undoubtedly have effects which in their entirety no one can possibly foresee. The rate of advancement cannot be calculated like a geometrical progression: all that we can hope to do is to realise more or less vaguely the acceleration which the action and interaction of anticipated (and often antagonistic) forces will produce; the general manner of the world's progress representing the resultant of their activities. What we must constantly keep in mind is the fact that changes in the institutions of society can only be stable when they are the result of corresponding changes in the temper of the age which yields them. As this temper is a thing of gradual development, we must believe that many temporary expedients will have to be tolerated by advanced thinkers since (as Spencer remarks) society can only be held together when the institutions existing, and the conceptions generally current, are in tolerable harmony. We can foresee many changes which will be in beneficent existence a hundred years hence; but it would be irrational to show impatience because these changes cannot be immediately proposed; since, being not yet in harmony with the current conceptions of the world, their immediate adoption would be mischievous instead of beneficial, and their results anarchic instead of [293]
stable. For a great many years we must go on passing laws for the regulation of social life, which we can quite easily perceive that the altered social life of a future age will not need, because they would be injurious to it. The zealous reformer who wishes, as we must all wish, to help the world in its wearied way to perfection must aim rather to assist the mind of people to demand greater reforms than it could as yet assimilate, than to procure the arrival of reforms for which society is not yet ripe, and must be content with the effort

> "... to ease the burden of the world
> Laboriously tracing what must be
> And what may yet be better."

To say this is not to deprecate the greatest possible energy in all endeavour that makes for progress. The doctrine, founded upon a perception of the impossibility of regenerating society except by utilising the natural and evolutionary movement of society itself, that nothing ought to be done except to wait upon this movement, betrays an evident confusion of thought, akin to the fallacy of the schoolmen, commonly called realism, partly adopted by Comte. "Society" is not in itself an entity separable from the units of society; a progress of society is only possible as the result of human volition progressively exercised. What we have to [294]
look for is a steady enlightenment of public ideals, issuing in the triumph of wisdom over folly, of virtue over laxity, of progress over reaction and *inertia*. Always there will be differences of opinion, exercising a salutary check upon hasty public action, and giving time for the establishment of harmony between the spirit of the age and the new institutions which mark its progress.

Naturally there will have been many changes in the material of daily life which, either because they did not fit in with any one of the divisions into which a forecast of the future naturally fell, or because the consideration of them would have obscured the exposition of matters more immediately connected with each other, it has not been possible to mention. For example, we have had occasion to debate the methods by which men and women will transact the business of trade and commerce with the aid of certain foreseen conveniences; and we have glanced at the probable future aspect of dwellings, conveyances and similar conveniences; but nothing has been said as to the clothes in which our descendants are likely to attire themselves or the enjoyment of these advantages. The latter and a few other minor subjects may perhaps be considered now, without very much mutual connection.

The clothing of men and women happens to illustrate rather appropriately the [295]
very same tendency of civilised institutions to develop by gradual, rather than violent, changes which has just been referred to. For, while a good deal is heard

about the “vagaries” of fashion, technical writers on the subject always seem to be able to predict some time in advance the movements of modish costume; and they sometimes even condescend to explain the processes of thought and observation by which their apparently inspired predictions are arrived at. Moreover, admitting, and allowing for, the extremest variations in detail, costume in civilised countries can hardly be said to have materially and intrinsically altered—cannot, that is to say, be said to have altered its fundamental characteristics—during a century, in the case of men, nor during a great many centuries in the case of women. Since the age of knee-breeches succeeded the age of doublet and hose, men have always protected their legs with “bifurcated integuments”—some sort of double tube secured to a copious bag enclosing the middle of the body—and the upper part of the trunk with a coat and waistcoat; while women have always worn bodices and petticoats of one shape or another. Neither has the loudest outcry against the irrationality of costume as a whole, nor even the ridicule showered upon single elements of it, ever had the least effect in producing revolutionary modification. *Punch* laughed [296]
in vain at crinolines; Lord Ronald Gower protests in vain against the silk “chimney-pot” hat. Will a more scientific and a more logical age replace absurd or otherwise objectionable garments by others more reasonably designed, to such an extent as to produce an entire change in the sartorial aspect of civilised peoples?

It is impossible to doubt that in some respects it will. Already sensible women decline to injure themselves and risk the injury of their possible offspring at the command of fashion. Tight-lacing and the wearing of such corsets as unnaturally compress the internal organs of the body are evidently near the end of their long reign. In a comparatively short time it is hardly possible to doubt that at least these, the most evidently injurious articles of clothing still surviving, will have joined the farthingale and the ruff in the lumber-room of the obsolete, and when what is really the more reasonable moiety of mankind is thus within easy reach of sacrificing to hygiene what was dedicated to a wholly mistaken conception of æsthetics, can we question that reforms in male dress founded upon convenience and reason will follow, even to the abandonment of the silk hat? If one were asked to suggest the various steps by which the ultimate costume of the century, whether male or female, will be arrived at, few would not boggle at the task. But the general nature of the more-or-less-perfected dress of a hundred [297]
years hence may perhaps be not unsuccessfully imagined, having in mind the considerations likely to determine it.

We may be quite certain that two characteristics will be demanded of all costume—that it shall give to all movements of the body the greatest possible freedom consistent with warmth, and that it shall be as easy as possible to put on and take off. The highly intellectual life of the next century will certainly be impatient of anything which detains it with occupations so uninteresting as the putting on and taking off of clothes from pursuits more attractive. Hence there will doubtless be a great deal of simplification of details, the greatest practical diminution in the number of single objects worn. The essentials of a satisfactory outfit will be, first, an inner garment next the skin, worn merely for cleanliness; next a middle garment for warmth, and finally an outer suit for protection. The innermost garment will no doubt be made of some fabric not much unlike the soft silky papers now made in Japan, so that it can be destroyed as soon as it is taken off. It is not in the least likely that so insanitary and degrading an occupation as that of the washerwoman can survive in a civilisation really advanced. The middle garment, completely cleansable by vacuum action and oxygenation, will of course have to be made of some vegetable fibre like cotton [298]
or flax. It will most likely be some developed form of “combination,” easy to put on and take off, fastening by means of a single knot or button, and will be just tight enough to give freedom to the movements. Its warmth will be dependent upon contained air, and it, like everything else we wear, will be highly porous; for the importance of properly ventilating the skin, perfectly well understood even now, will by that time be also acted upon. Thus far male costume and female costume will be practically identical. There is no reason to expect, however, that this identity will be carried so far as the externals of dress, because realising (as we shall of course realise) the tendency of the sexes to become less divergent in their natural and moral characteristics, we shall instinctively seek to maintain all the salutary and romantic contrast that we can. But it is not to be believed that woman, already long since emancipated from the corset, will have continued a slave to the skirt, the petticoat and other restraining garments. With underclothes practically identical with the sensible garments of men, our female descendants will no doubt wear a costume much like what Miss Rehan wore as Rosalind—a tunic and knee-skirt (probably in one) with gaiters made of some elastic material.

Deprived as we shall be of animal products, the leather boot will naturally be [299]
unavailable, and a totally different kind of foot covering will be used. But it is not

the absence of leather which will determine this change. Perfectly satisfactory boots of the present form are worn by some extreme vegetarians already, carrying consistency to its limit. With the disappearance of the horse from the streets, however—a disappearance which will doubtless be at least seventy years old by this time next century (for the motor car is fast pushing out the horse already)—the chief need for an entirely impervious foot-covering will have been obviated. Towns will be sanitary underfoot—they are disgusting now—and free from mud; while the drying appliances mentioned in an earlier chapter will clear away rain as fast as it falls. Consequently it will no longer be necessary to wear uncomfortable, unhealthy and deforming boots; the human foot will cease to be the source of discomfort it now more or less acutely is to nine people out of every ten, and we shall be much better walkers and athletes. For health will be the consideration dominating all our actions, health being a subject of careful tuition in every school: and as men and women will rarely need to use muscular strength in their work, they will gratify the natural yearning of healthy animals for exertion, in athletic sports, by no means confined to the male sex.

Whether fashion as an institution will continue to exist is doubtful, but probably [300]
it will not exhibit the extravagances, nor the capricious development which now characterise it, and "a general uniformity with infinitesimal differences," which has been defined as one of Nature's uniformities, will be perceptible in the natural development of the race.

Of course one object sought consciously or unconsciously to be attained by the use of fashions is class distinction; and similarly jewellery is probably worn much more because it is a sign of wealth than because of any intrinsic beauty which it is supposed to possess. At one time a man's occupation (and consequently his rank in society) could be ascertained by his dress; and sumptuary laws occasionally made such distinctions obligatory. It is no doubt of some law of his own time that Shakespeare was thinking[1] when he made the tribune in *Julius Cæsar* reprove the workmen for appearing on a business-day without the leather aprons which marked their trade:—

"What, know you not
Being mechanical you ought not walk,
Upon a labouring day, without the sign
Of your profession?"

Will class distinction survive the democratising influence of a century? [301]

The dress of our own time tends to obliterate the evidence of these distinctions; but a development from heterogeneity to homogeneity is a reversal of the usual law of progress, and it can hardly be called a sign of social advancement that artisans of our day generally wear, when at work, the cast-off clothes of the employing classes, bought second-hand, and for "Sunday best" often ape the fashions of the rich. In a hundred years' time assuredly no worker will be ambitious to give himself the aspect of an idler, and one may perpend the dry answer of an American to the remark that in the United States there is no leisure-class. "Oh, yes, there is," said the moralist, "only we don't call them that; we call them tramps." Everyone will take pride in his work, when work is no longer treated with the disgraceful contempt which we are only by degrees becoming ashamed of. Consequently the clothes worn at work will no doubt be, in every trade, specially designed to facilitate the exertions of the worker: and in the copious hours of leisure there will be variety, increased by the wearing of special garments for special amusements. It is difficult to believe that anyone, whatever his work, will dispense with the comfort of a complete change of dress when play-time comes: and the ingenious simplification of fastenings, and the reduced number of garments worn, will facilitate the enjoyment of this luxury. [302]
Everyone will dress for dinner—but not (one fancies) in a "swallow-tail" coat and stiff shirt. It is quite certain that all our clothes will be soft, supple, porous, light and warm a hundred years hence, and the clear-starcher will no longer have the opportunity to destroy them.

Some attempt has already been made to suggest the general domestic and architectural conveniences of the next century, but the subject of furniture has not been referred to in detail. Allowing for the fact that animal fabrics, as wool, leather, etc., will be absent, there is no particular reason why chairs, carpets and curtains should be very different from what they are now. No doubt light metallic alloys will often be used in the framework of chairs and tables instead of wood, because the tendency of civilisation is to make things lighter and less cumbersome whenever this is possible. At one time it might have been thought that upholstery, carpets and curtains would have to be dispensed with. But to a thoughtful observer there must always have been a difficulty here. A wooden chair, and even a rattan one, however cunningly shaped, is so extremely discomfortable to sit in without cushions, that it was easier to imagine that

invention would correct the unhealthiness of cushions and stuffing, than that an advanced age would consent to dispense with these luxuries. The manner in [303] which the former solution of the difficulty would be attained was actually foreseen by the present writer before the introduction of vacuum cleaning was accomplished, and several passages in an earlier chapter had to be rewritten when what had been somewhat fancifully described as a convenience of the future suddenly became an existing factor of the present: and in one or two places innovations have similarly called for changes in the text—a circumstance which, it is to be hoped, will give pause to critics disposed to condemn certain suggestions in this book as chimerical.[2] Obviously, now that we can thoroughly cleanse and free from every particle of dust by a simple mechanical process any fabric or mass of fabrics, there is no longer any reason to expect that our descendants will, on hygienic grounds, find it necessary to dispense with comforts so essential to restful leisure as easy-chairs, soft carpets and wall hangings.

On the other hand, it is quite certain that numerous inventions will enhance and beautify the luxury of an age where rational luxury will reign universally. One source of frequent discomfort to-day is the necessity of living always in rooms of [304] one size. Whether we sit alone, or entertain a number of friends, the same apartment has to serve our needs: consequently we are crowded on one day and chilly on the next. With combustion abolished as a heating device, there will be no objection against light sliding walls—a convenience long since adopted by our allies the Japanese—which would be rather dangerous nowadays and not particularly desirable, at all events in England, where we have no means of warming most rooms except a fire on one side, and no means of cooling them at all except by letting in draughts and noise through the window. No doubt when matches and fireplaces, about equally causative of conflagration, have vanished, and when we have invented methods of warming the air in houses without the horrible drying of it caused by the American pipe-stove system, houses will be much more lightly built: and it is certainly not going to be impossible to use thin, light walls without being able to hear in each room every sound that occurs in the next. Concurrently, we shall be able to change the size of rooms—a convenience greater than might be supposed by those who have not thought about the matter. In summer we shall just as easily cool our houses as we shall heat them in winter. Very few servants will be required (another great comfort); [305] and lighting arrangements will naturally be free from their present inadequacy.

Except that no one has yet troubled to think about it, there is surely no reason why bathing should be such a tedious operation as it is. Probably the speediest dresser of our own day does not consume less than a quarter of an hour over his morning tub and the operation of drying himself. A hundred years hence, people will be so avid of every moment of life, life will be so full of busy delight, that time-saving inventions will be at a huge premium. It is not because we shall be hurried in nerve-shattering anxiety, as it is often complained that we now are, but because we shall value at its true worth the refining and restful influence of leisure, that we shall be impatient of the minor tasks of every day. The bath of the next century will lave the body speedily with oxygenated water delivered with a force that will render rubbing unnecessary, and beside it will stand the drying cupboard, lined with some quickly-moving arrangement of soft brushes, and fed with highly desiccated air, from which, almost in a moment, the bather will emerge, dried, and with a skin gently stimulated, and perhaps electrified, to clothe himself quickly and pass down the lift to his breakfast, which he will eat to the accompaniment of a summary of the morning's news read out for the [306] benefit of the family, or whispered into his ears by a talking-machine.

Does this manner of beginning the day sound like a nightmare? That is only because the purpose of it has been overlooked. Not because they will be "short" of time will our descendants thus arrange their lives, but because they wish to reserve as much time as possible for culture (physical as well as intellectual) and for thought; which the better distribution of wealth and labour will facilitate; while labour itself, everywhere performed intelligently and with interest, will be no longer irksome. The working man will ply his trade with zest—working for himself and family—instead of seeking every opportunity to shirk and evade it. And, his task accomplished, he will hasten to enjoyments as elevating as labour itself.

Will man then, the critic may ask incredulously, have really been perfected in a century? Decidedly not. But unless we doubt the evidence which shows that improved institutions not only arise out of improved popular character, but also help to promote it, we cannot resist the inference that the removal of many causes of degradation must bring us nearer to perfection, to which the moral evolution of the race is slowly proceeding. There is nothing Utopian in the belief that honesty, truthfulness, respect for the rights of others, will be fostered by the [307] increased intelligence of the new age; and from the moment when this

intelligence, disseminated throughout all society, begins to make the moral improvement of the race a prime object in every social reform, in every piece of legislation (emancipating as well as restrictive) we have a right to expect the progress of morality to receive a marked impetus. “Nature, careless of the single life,” will be assisted in the perfecting of the moral type, and the dishonest man, the liar, the sensualist, and the man too stupid to be unselfish, will become with every decade less fit for survival, because the same unwisdom which is at the bottom of his faults will handicap him in the battle of life, will hinder him in the competition for the right to perpetuate his characteristics in children born of his loins. It is only those who conceive of the race as capable of remaining stationary, or moving backward, in morals, while in every other respect it moves forward with constantly-increasing momentum, who imagine that cunning and unscrupulousness are likely to be fostered by enlarged civilisation. So long as we allow the world to be exploited for the selfish advantage of a handful of millionaires, no doubt these characteristics will continue at a premium. But it is impossible to believe that the irresistible power of the mass of humanity will submit in perpetuity to be thus made the tools of a minority. If the “ruling” [308]
classes wished to maintain that *status* they should have kept the people from the schoolroom. Numbers must inevitably prevail, and the world will have reorganised itself in ways which, if we could foresee them in their entirety, [309]
would suggest an almost unthinkable perfection.

---

1 At least this was the opinion of the editors of the Clarendon Press edition of the Plays. ↑

2 While actually correcting the proof sheets I read in a London evening newspaper, *The Star*, that gramophones had been utilised in certain schools for the teaching of foreign languages, a device I had suggested in the chapter on Education as likely to be adopted in the schools of the future. ↑

[Contents]

INDEX

[Contents]

A

[Contents]

B

[Contents]

C

[Contents]

D

[Contents]

E

[Contents]

F

[Contents]

G

[Contents]

H

[Contents]

I

[Contents]

J

[Contents]

K

[Contents]

L

[Contents]

M

[Contents]

N

[Contents]

O

[Contents]

P

[Contents]

R

[Contents]

S

[Contents]

T

U

V

W

THE END

COLSTON AND COMPANY, LIMITED, PRINTERS, EDINBURGH

“All who care to make acquaintance with one of the new forces of which the twentieth century will see the victory or the defeat will do well to read ‘In Peril of Change.’”—*Westminster Gazette.*

“The essays are of high literary quality, vigorous, yet unaggressive; just in appreciation and sympathetic in treatment. One cannot overpraise such stimulating and thoughtful work as Mr Masterman’s.... It is a good thing for a man to think, but it is better still to make others think, and this is exactly what ‘In Peril of Change’ does.”—*Daily Telegraph.*

“Let everyone who wants to read quickening and suggestive ideas on modern problems and principles buy the book, for whether the reader agrees or disagrees he is compelled to think.”—*Pall Mall Gazette.* LONDON: T. FISHER UNWIN

COLOPHON

Availability

This eBook is produced by the Online Distributed Proofreading Team at www.pgdp.net.

Scans for this book are available from the Internet Archive (copy 1 (UK edition); 2, 3 (US edition)).

Related Open Library catalog page (for source): OL7102546M.

Related Open Library catalog page (for work): OL15266769W.

Encoding

The advertisement at the beginning of the book has been moved to the end.

Revision History

2015-04-08 Started.

External References

This Project Gutenberg eBook contains external references. These links may not work for you.

Corrections

The following corrections have been applied to the text:

Page	Source	Correction
24, 281	,	.
81	forseen	foreseen
89	manufac-facturer-shopkeepers	manufacturer-shopkeepers
277, 311	[*Not in source*]	,
309	,	[*Deleted*]
309	.	[*Deleted*]
310	Education	——
311	Morality	——

any copy of a Project Gutenberg™ work (any work on which the phrase “Project Gutenberg” appears, or with which the phrase “Project Gutenberg” is associated) is accessed, displayed, performed, viewed, copied or distributed:

> This eBook is for the use of anyone anywhere in the United States and most other parts of the world at no cost and with almost no restrictions whatsoever. You may copy it, give it away or re-use it under the terms of the Project Gutenberg License included with this eBook or online at www.gutenberg.org. If you are not located in the United States, you will have to check the laws of the country where you are located before using this eBook.

1.E.2. If an individual Project Gutenberg™ electronic work is derived from texts not protected by U.S. copyright law (does not contain a notice indicating that it is posted with permission of the copyright holder), the work can be copied and distributed to anyone in the United States without paying any fees or charges. If you are redistributing or providing access to a work with the phrase “Project Gutenberg” associated with or appearing on the work, you must comply either with the requirements of paragraphs 1.E.1 through 1.E.7 or obtain permission for the use of the work and the Project Gutenberg™ trademark as set forth in paragraphs 1.E.8 or 1.E.9.

1.E.3. If an individual Project Gutenberg™ electronic work is posted with the permission of the copyright holder, your use and distribution must comply with both paragraphs 1.E.1 through 1.E.7 and any additional terms imposed by the copyright holder. Additional terms will be linked to the Project Gutenberg™ License for all works posted with the permission of the copyright holder found at the beginning of this work.

1.E.4. Do not unlink or detach or remove the full Project Gutenberg™ License terms from this work, or any files containing a part of this work or any other work associated with Project Gutenberg™.

1.E.5. Do not copy, display, perform, distribute or redistribute this electronic work, or any part of this electronic work, without prominently displaying the sentence set forth in paragraph 1.E.1 with active links or immediate access to the full terms of the Project Gutenberg™ License.

1.E.6. You may convert to and distribute this work in any binary, compressed, marked up, nonproprietary or proprietary form, including any word processing or hypertext form. However, if you provide access to or distribute copies of a Project Gutenberg™ work in a format other than “Plain Vanilla ASCII” or other format used in the official version posted on the official Project Gutenberg™ website (www.gutenberg.org), you must, at no additional cost, fee or expense to the user, provide a copy, a means of exporting a copy, or a means of obtaining a copy upon request, of the work in its original “Plain Vanilla ASCII” or other form. Any alternate format must include the full Project Gutenberg™ License as specified in paragraph 1.E.1.

1.E.7. Do not charge a fee for access to, viewing, displaying, performing, copying or distributing any Project Gutenberg™ works unless you comply with paragraph 1.E.8 or 1.E.9.

1.E.8. You may charge a reasonable fee for copies of or providing access to or distributing Project Gutenberg™ electronic works provided that:

- You pay a royalty fee of 20% of the gross profits you derive from the use of Project Gutenberg™ works calculated using the method you already use to calculate your applicable taxes. The fee is owed to the owner of the Project Gutenberg™ trademark, but he has agreed to donate royalties under this paragraph to the Project Gutenberg Literary Archive Foundation. Royalty payments must be paid within 60 days following each date on which you prepare (or are legally required to prepare) your periodic tax returns. Royalty payments should be clearly marked as such and sent to the Project Gutenberg Literary Archive Foundation at the address specified in Section 4, “Information about donations to the Project Gutenberg Literary Archive Foundation.”

- You provide a full refund of any money paid by a user who notifies you in writing (or by e-mail) within 30 days of receipt that s/he does not agree to the terms of the full Project Gutenberg™ License. You must require such a user to return or destroy all copies of the works possessed in a physical medium and discontinue all use of and all access to other copies of Project Gutenberg™ works.

- You provide, in accordance with paragraph 1.F.3, a full refund of any money paid for a work or a replacement copy, if a defect in the electronic work is discovered and reported to you within 90 days of receipt of the work.

- You comply with all other terms of this agreement for free distribution of Project Gutenberg™ works.

1.E.9. If you wish to charge a fee or distribute a Project Gutenberg™ electronic work or group of works on different terms than are set forth in this agreement, you must obtain permission in writing from the Project Gutenberg Literary Archive Foundation, the manager of the Project Gutenberg™ trademark. Contact the Foundation as set forth in Section 3 below.

1.F.

1.F.1. Project Gutenberg volunteers and employees expend considerable effort to identify, do copyright research on, transcribe and proofread works not protected by U.S. copyright law in creating the Project Gutenberg™ collection. Despite these efforts, Project Gutenberg™ electronic works, and the medium on which they may be stored, may contain “Defects,” such as, but not limited to, incomplete, inaccurate or corrupt data, transcription errors, a copyright or other intellectual property infringement, a defective or damaged disk or other medium, a computer virus, or computer codes that damage or cannot be read by your equipment.

1.F.2. LIMITED WARRANTY, DISCLAIMER OF DAMAGES - Except for the “Right of Replacement or Refund” described in paragraph 1.F.3, the Project Gutenberg Literary Archive Foundation, the owner of the Project Gutenberg™ trademark, and any other party distributing a Project Gutenberg™ electronic work under this agreement, disclaim all liability to you for damages, costs and expenses, including legal fees. YOU AGREE THAT YOU HAVE NO REMEDIES FOR NEGLIGENCE, STRICT LIABILITY, BREACH OF WARRANTY OR BREACH OF CONTRACT EXCEPT THOSE PROVIDED IN PARAGRAPH 1.F.3. YOU AGREE THAT THE FOUNDATION, THE TRADEMARK OWNER, AND ANY DISTRIBUTOR UNDER THIS AGREEMENT WILL NOT BE LIABLE TO YOU FOR ACTUAL, DIRECT, INDIRECT, CONSEQUENTIAL, PUNITIVE OR INCIDENTAL DAMAGES EVEN IF YOU GIVE NOTICE OF THE POSSIBILITY OF SUCH DAMAGE.

1.F.3. LIMITED RIGHT OF REPLACEMENT OR REFUND - If you discover a defect in this electronic work within 90 days of receiving it, you can receive a refund of the money (if any) you paid for it by sending a written explanation to the person you received the work from. If you received the work on a physical medium, you must return the medium with your written explanation. The person or entity that provided you with the defective work may elect to provide a replacement copy in lieu of a refund. If you received the work electronically, the person or entity providing it to you may choose to give you a second opportunity to receive the work electronically in lieu of a refund. If the second copy is also defective, you may demand a refund in writing without further opportunities to fix the problem.

1.F.4. Except for the limited right of replacement or refund set forth in paragraph 1.F.3, this work is provided to you ‘AS-IS’, WITH NO OTHER WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PURPOSE.

1.F.5. Some states do not allow disclaimers of certain implied warranties or the exclusion or limitation of certain types of damages. If any disclaimer or limitation set forth in this agreement violates the law of the state applicable to this agreement, the agreement shall be interpreted to make the maximum disclaimer or limitation permitted by the applicable state law. The invalidity or unenforceability of any provision of this agreement shall not void the remaining provisions.

1.F.6. INDEMNITY - You agree to indemnify and hold the Foundation, the trademark owner, any agent or employee of the Foundation, anyone providing copies of Project Gutenberg™ electronic works in accordance with this agreement, and any volunteers associated with the production, promotion and distribution of Project Gutenberg™ electronic works, harmless from all liability, costs and expenses, including legal fees, that arise directly or indirectly from any of the following which you do or cause to occur: (a) distribution of this or any Project Gutenberg™ work, (b) alteration, modification, or additions or deletions to any Project Gutenberg™ work, and

(c) any Defect you cause.

Section 2. Information about the Mission of Project Gutenberg™

Project Gutenberg™ is synonymous with the free distribution of electronic works in formats readable by the widest variety of computers including obsolete, old, middle-aged and new computers. It exists because of the efforts of hundreds of volunteers and donations from people in all walks of life.

Volunteers and financial support to provide volunteers with the assistance they need are critical to reaching Project Gutenberg™'s goals and ensuring that the Project Gutenberg™ collection will remain freely available for generations to come. In 2001, the Project Gutenberg Literary Archive Foundation was created to provide a secure and permanent future for Project Gutenberg™ and future generations. To learn more about the Project Gutenberg Literary Archive Foundation and how your efforts and donations can help, see Sections 3 and 4 and the Foundation information page at www.gutenberg.org.

Section 3. Information about the Project Gutenberg Literary Archive Foundation

The Project Gutenberg Literary Archive Foundation is a non-profit 501(c)(3) educational corporation organized under the laws of the state of Mississippi and granted tax exempt status by the Internal Revenue Service. The Foundation's EIN or federal tax identification number is 64-6221541. Contributions to the Project Gutenberg Literary Archive Foundation are tax deductible to the full extent permitted by U.S. federal laws and your state's laws.

The Foundation's business office is located at 809 North 1500 West, Salt Lake City, UT 84116, (801) 596-1887. Email contact links and up to date contact information can be found at the Foundation's website and official page at www.gutenberg.org/contact

Section 4. Information about Donations to the Project Gutenberg Literary Archive Foundation

Project Gutenberg™ depends upon and cannot survive without widespread public support and donations to carry out its mission of increasing the number of public domain and licensed works that can be freely distributed in machine-readable form accessible by the widest array of equipment including outdated equipment. Many small donations ($1 to $5,000) are particularly important to maintaining tax exempt status with the IRS.

The Foundation is committed to complying with the laws regulating charities and charitable donations in all 50 states of the United States. Compliance requirements are not uniform and it takes a considerable effort, much paperwork and many fees to meet and keep up with these requirements. We do not solicit donations in locations where we have not received written confirmation of compliance. To SEND DONATIONS or determine the status of compliance for any particular state visit www.gutenberg.org/donate.

While we cannot and do not solicit contributions from states where we have not met the solicitation requirements, we know of no prohibition against accepting unsolicited donations from donors in such states who approach us with offers to donate.

International donations are gratefully accepted, but we cannot make any statements concerning tax treatment of donations received from outside the United States. U.S. laws alone swamp our small staff.

Please check the Project Gutenberg web pages for current donation methods and addresses. Donations are accepted in a number of other ways including checks, online payments and credit card donations. To donate, please visit: www.gutenberg.org/donate

Section 5. General Information About Project Gutenberg™ electronic works

Professor Michael S. Hart was the originator of the Project Gutenberg™ concept of a library of electronic works that could be freely shared with anyone. For forty years, he produced and distributed Project Gutenberg™

eBooks with only a loose network of volunteer support.

Project Gutenberg™ eBooks are often created from several printed editions, all of which are confirmed as not protected by copyright in the U.S. unless a copyright notice is included. Thus, we do not necessarily keep eBooks in compliance with any particular paper edition.

Most people start at our website which has the main PG search facility: www.gutenberg.org.

This website includes information about Project Gutenberg™, including how to make donations to the Project Gutenberg Literary Archive Foundation, how to help produce our new eBooks, and how to subscribe to our email newsletter to hear about new eBooks.