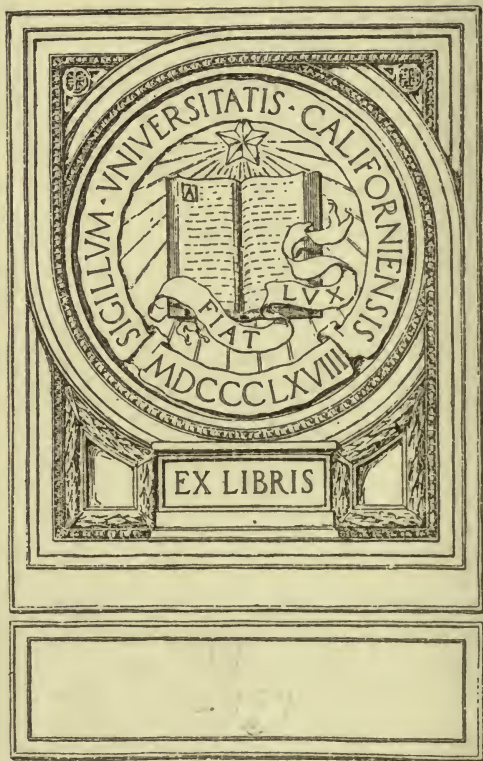


ETHICS

ARTHUR LYNCH



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ETHICS

ETHICS

AN EXPOSITION OF PRINCIPLES

By

ARTHUR LYNCH

Author of "Moods of Life," etc.



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ETHICS

AN ATTEMPT TO RECONSTRUCT

THE
CALIFORNIA

ARTICLE TO THE

THE CALIFORNIA
ARTICLE TO THE

PREFACE

THE greatest problem presented to the human mind, it seems to me, is that of ascertaining the ultimate purport of all problems. In this phrase we express the veritable meaning of Ethics.

To discover new things in the material world, to invent machines useful to mankind, to find means of counteracting or of preventing disease—these achievements are great; but of a higher cast is that of exploring in the unknown worlds of thought, of conquering new domains of intellectual interest, of increasing the power of the mind, and of standing upon some headland to obtain forward visions of life and clear illumination of the paths to tread.

* * * * *

From my earliest years questions of the sort have fascinated me, and at every period of my life they have appeared, sometimes in far-off allurements, sometimes in pressing insistence, before my mind, weaving together with the texture of my thoughts. To study in this field, to see the drift of things in an ethical sense, to throw a beam of light upon the sources and the goal of our acts—this became the dream of my inner life.

The first suggestion that offered was to seek the guidance of thinkers who had gone before; for the difficult nature of the problem has not prevented the appearance of a multitude of solutions, some possessing great authority in regard to social institutions and customs, others of high import in the famous universities of the world.

Had I found any of these solutions satisfactory I should

never have desired to write my own book; but one by one I saw that these previous works failed to answer certain tests which, once they had become formulated, seemed to me imperative. I demanded that the system of Ethics, however presented, should rest on a deep base, and that it should rise by reasonings, cogent and consecutive, to the conclusions it expressed. Judged in this manner some of them, and not the least authoritative, seemed to dwindle into sheer absurdity.

Throwing away, therefore, the guidance of the mere coasting lines, I sought for better methods; but then I seemed confronted by an almost hopeless task. So vast a tangle, so many obscure positions lay in the way, that I found it necessary at length to take an entirely new cast of thought, and to deal first of all with the psychological problems which entered at every turn into the subject of Ethics.

This diversion into the realm of psychology occupied me many years and involved the strain of intense toil, but having at length finished my work on that side I was able to return, and now with added powers, to my special study of Ethics.¹

The task I set myself now was to find in the conditions of nature itself the sanctions of an ethical system, and to exhibit the main lines which on this basis serve as a guide to human conduct. Having discovered these, I had next to show the principle of development by which standards of judgment are established and from which institutions arise.

¹ Cf. "Psychology: A New System" and "Principles of Psychology" (forthcoming). I certainly should have had no reason for writing these books had I thought that the ground had been adequately covered before. So far from this being the case, however, I found it necessary even to state the central problem of psychology afresh and to introduce a new series of considerations in order to obtain my solution. I therefore say definitely now that I have shown, for the first time, the complete analysis of reason, and I have proved that by the combination of certain Fundamental Processes every mode of thought may be built. The consequences of this theory are, of course, innumerable.

This manner of regarding ethical questions is more objective than that of previous systems, but it gains in solidity and loses nothing of what is true in spirituality on that account, for though not directly aimed at, there emanates from this work, since it is found in the meaning of the world itself, an inspiration of Idealism.

I offer it now in the hope that it will at length become interfused with our very forms of thought and serve to guide us even in delicate adjustments of human affairs. This system of Ethics has reality of life; it sets forth the doctrines of Truth, Energy, Sympathy.¹

¹ I have, in order to possess a short distinctive name, called this system the Aletheian system, from the Greek *ἀλήθεια*, truth. The first book is the forthcoming "Principles of Psychology," the second is "Ethics."

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Part I

INTRODUCTORY

After a reference to three modes of dealing with the problems of Ethics, brief notices follow of some of the famous ethical systems of the world. None of these is found satisfactory. The theory of evolution is then discussed. Then an objection of Lévy-Bruhl as to the possibility of a "legislative" science is examined. This first part clears the ground.

ETHICS

SURVEY AND CLEARANCE

INTRODUCTION

MAN has already in being born begun the most adventurous of all voyages.

To be cast on a little island in space, coming we know not whence, going we know not whither, yet certain that our acts tell not only on our own happiness but on the whole course of human affairs; that is a situation more wonderful than anything contrived in our own imagination. Within this mystery human life must be wrought out till its inevitable termination in death, and in that life are played the myriad scenes that finally resolve into the interaction between the physical universe and the human body and mind with the diverse faculties, needs, desires, passions, memories, regrets.

A good part of our lives are led, or compelled, in some fashion by forces that lie outside our ken; yet as man has developed in society he begins to find a certain order in the universe, a regularity and a method that finally suggest to him the "laws" by aid of which he predicts and to some extent controls nature.

In the moral world, in the world of aspirations and passions and ambitions, of will, of accomplishment, of conscience, of character, we feel, too, that there are great governing principles of which the laws have escaped us because the conditions are so various and so uncertain.

Yet at all times men have felt the need of guidance, even though of vague direction, and in view of the immensity and perpetual marvel of the world that sweeps about them they have felt that these principles must be sought in something not included wholly in their own immediate conditions.

In the early days of civilization the principles have been enunciated at various times and to various peoples in the form of "laws" delivered direct from the God of the universe, or purporting at least to have divine origin; and these laws have been peremptory and certain in proportion as the civilization has been primitive.

At a later date thinkers sought to find in the conditions of the universe itself, and more particularly in the general circumstances of human society, the explanations and ultimately the sanctions of these laws. And as thus, once the conditions become formulated and reasons given for the form of laws, we are entering however precariously into the domain of science, then the natural development of such systems of ethics would be towards a more comprehensive and more accurate expression of the whole matter.

The problem has been attempted again and again, for the history of ethics records the names and achievements of men so illustrious as Aristotle, Kant, and Herbert Spencer.

In the course of this exposition, however, and with a better view of the magnitude and complexity of the problem, the achievements of these great thinkers will appear but tentative, and, where not false, insufficient to the purpose; and what is said of them may be repeated but with greater force in regard to others—famous philosophers who have but offered amendments or glosses of earlier theories.

For my own part I would not have written at all had I considered it necessary to buttress my position by authority, but I have depended so little on aid from that source that the very form and manner in which I have presented my arguments may disconcert those whose brains have become saturated with the routine teachings of the schools, barren as these have been in the development of our civilization.

At no time have I sought originality for the sake of being original; I have been perhaps too submissive in receiving or in endeavouring to assimilate the works of my fore-runners, certainly more submissive, I hope, than the race of thinkers whom I shall stimulate by these new views and to whom I shall leave the task of their elaboration and their fecund applications.

This work of ethics follows the "Principles of Psychology" in a natural synthetic order, but in point of time

and in the interest of my speculations it precedes the work of psychology.

Briefly, the history of that succession is this :

From my childhood the great preoccupations of my mental and moral nature were to find the indication of some goal in life, of some purpose, and thence of a sure guidance. The meditations that followed induced me to examine with the closest attention the instrument itself, that of reason, by which I was endeavouring to explore these mysterious ways. The study of reason led me to the enunciation of the central problem of psychology, and I remained with my mind concentrated on that question until I had satisfied myself that I had solved it. Rising from that prolonged toil, I saw that I had gained something that had escaped my predecessors, and that, once in possession of those elements which I have called the Fundamental Processes, I could throw a beam of illumination on all kinds of problems that had hitherto baffled me.¹

The exposition of Ethics followed then naturally in synthetic order, for their research had been the starting point of discovery of the truths of the psychology.

* * * * *

With the entry into the domain of ethics the problem becomes even more complex, for it comprises not only the methods of other sciences, as indicated in the psychology, but a knowledge as far as is permitted to us step by step of the conclusions gained.

The central problem as it appears to me may be stated thus : Standing in the universe, regarding all its phenomena and in face of all the world of thought, to endeavour to find by the force of reason alone, if not the goal or purpose of our lives, at least great cardinal lines of guidance towards higher development, and to exhibit these as derived from a fundamental base by clear and consecutive arguments.

Evidently in order to form correct notions of man's place in the cosmos it is necessary to gain, if only in vague outline, some true conception of the cosmos itself.

¹ The complete exposition of these Fundamental Principles constitutes the main part of "Psychology: A New System," and my forthcoming "Principles of Psychology."

Our positive sciences are intended to make clear, each in its sphere, some portion of the world with which they deal; and so we see that a study of ethics involves a contemplation of the whole inorganic and organic world—that is to say, practically a survey of all the sciences illuminated by the light of psychology.

It may be objected that few ethical writers, even the greatest, have considered such matters at all, and that those especially who have been most emphatic, and whose influence has been greatest in a popular sense, have either ignored science or have fought against its right to be heard. My comment is simply that such teachers have contrived to write abundant nonsense, and that however popular their works may have been at one time, the permanent value is of no high order.

It will be remarked further that we find a certain progressive character, if not in the principles of ethics, at least in our appreciation of them as we become more and more acquainted with science and as our mental horizon broadens.

This remark is entirely justified and especially in regard to the application of the principles; but it is possible nevertheless to mark out main lines of guidance of such a character that subsequent modifications are taken within their boundaries.

In the present work I prefer to restrain the tendency to applications of too detailed a character, because in presenting a series of new notions I desire that the mind of the reader may not be confused by over-elaboration or by discussions of side issues.

In tracing the consequences of the main principles it would be facile to use the word "revolutionary," but that would not be justified; for the changes indicated, however important to ourselves at the present epoch, will be seen subsequently to have been comparatively superficial in comparison with the vast amount of hereditary capital in thought and manner which the ages have brought out for our race.

The image that comes to my mind in contemplating the new order of things in the moral world is that of the earlier navigators to whom the suggestion came that a new world of experience, of adventure and of life, might lie beyond the Pillars of Hercules.

In looking at a map representing the world as known, for example in the days of Homer, one finds that the ambit of men's explorations and imaginings, though circumscribed, seemed at that time fairly complete. With the wondering thoughts of the Unknown, of the Beyond, mingled the vague thrill of terror, less on account of physical perils than of the resistance to the rush and surge of new ideas and new emotions that threatened to flood the mind and sweep away the reason. So also has it been with every step in the moral world.

Yet the discoveries of new shores, while adding to man's possessions, did not rob him of any attributes; it gave him increased scope, higher sense of power, ampler fullness and dignity of life.

So it is in the realm of ideas. It behoves us to guide our way solely by the truth, and to press forward in expectation, in wonder, and in delight wherever possible, but above all with souls alive to the sense of a great destiny.

CHAPTER I

VALIDITY OF REASON

THE problem of ethics is itself ill-defined, and the methods of its solution have hitherto been either tentative and uncertain, or else marked simply by the expression of law without demonstration.

The subject has been approached in various ways, and under the impulsion of different motives, but in broad lines three different methods stand out in their salient features.

The first of these is authority, and in the circumstances this can hardly be otherwise than divine authority, real or imputed.

The second, which is the most popular amongst those to whom authority alone is not satisfying, is really a composite formed of the prevailing notions of the society of the time, the temperament of the philosopher, the teachings of others who have preceded, the vague aspirations of poets and seers. This may be called the academic or empirical method.

The third involves rather a searching of the conditions of the whole universe, the physical domain and the world of society in which we live; and on the basis of that searching the endeavour to draw certain conclusions, which should seem to determine our conduct, at least in the main lines, in the critical occasions of life. This may be called the scientific method.

An objection has been raised to this manner of viewing the science of ethics by an acute French thinker, Monsieur L. Lévy-Bruhl, who points out that it is the business of a science not to direct the applications that follow from certain principles, but rather to study the field, which in this case consists partly of the emotions, desires, morals, laws, so as to elucidate the nature of the reactions concerned. This aspect of the matter will be considered in a special

discussion, wherein I believe it will be shown that it is proper to speak of the science of ethics in the sense of discovery of the main lines of direction to human conduct.

The history of ethics will be briefly recalled in ensuing chapters, for this will enable us to appreciate the nature and scope of the whole question, and to recognize the complexity and the subtlety of the speculations involved, as well as to prepare our minds for the recognition of a scientific treatment, freed as far as possible from the bias, or the prejudices, or the aspirations of the philosopher, and from such influences of his environment as are not permanent.

One of the most difficult tasks in the studies of ethics is to obtain a certain objectivity of regard. What we here call ethics is inextricably interwoven with forms of religion, early education, the inculcation of various precepts, the influences of patriotism and of race, of all that helps to give a direction to the thoughts in regard to ideals and to purposes; it is therefore extremely difficult to disengage one's mind from teachings that have become incorporated into the body of one's thoughts almost as if assimilated by an organism, and which have the protection of the high-sounding names of faith, or patriotism, or duty.

There exists in many minds even a prejudice against turning the searchlight of science upon accepted beliefs; it is felt that such an act is in itself a sort of wickedness that vitiates at the beginning any possible good resulting from the examination; and the protest against such proceedings and the distrust of the result of the criticism are always greatest with those whose dogmas are uncompromising and whose faith is absolute.

Yet there should not of itself be anything irreligious in ascertaining the foundations of a religion, nor immoral in assuring to the depths of things the right foundations of our conduct. One is inclined to suspect in uneasy minds some secret laxity of faith, and some predilection even for false moralities if only these be indulgent to personal inclinations.

In this matter the man of science gives evidence of a better spirit than the believer, for he desires to see tested the theories on which he builds, and none of these is so

sacred as not to be rejected if it be found inconsistent with the facts.

Thus the theory of gravitation was readily accepted when first demonstrated, and not a star has crossed the meridian since but a confirmation has been found of the truth of the law enunciated by Newton.

The theory of Relativity, however, and some of the phenomena revealed in the study of radiation, have led physicists to consider that the law of gravitation may be found to be a particular instance of some deeper law, and that possibly it may be subject to exception in the case of atoms or their constituents and at infinitesimal distances.

The man of science does not reject such possibilities on the grounds of faith, and so far from finding experiments and tests and research reprehensible, he feels that any facts inconsistent with the old theories will lead him on to new and perhaps wonderful discoveries. The man who plumes himself on his faith, and tries to stay the march of science to within his own compass, writes himself down as a being inferior mentally and morally to the most modest and patient toiler of the laboratory.

One sometimes hears the argument, and its tacit use is more powerful than its direct statement, that though a certain doctrine may not be actually true, yet it is of so high and elevating a character, so "spiritual," that it should be maintained and taught even at the expense of adapting the truth to its needs. To such a view the whole course of this book is opposed, and in the exposition it will be abundantly evidenced that it corresponds to a pernicious and immoral state of mind.¹

Idealists seem often to forget that the great act of creation has already taken place, and that the ideal must be found in harmony with the order of the universe as it exists.

The mere imagining of ideals is therefore an otiose employment, even though it be almost universally commended.

¹ Certainly it is customary to hear men discussing the ideal world, in particular the future world, with various degrees of appreciation of æsthetic qualities or moral needs, as if a free choice existed; so much so, that the exclamation of one disputant remains in my memory as a summing up of the situation: "There's Heaven!" he exclaimed. "You've got to take it or leave it!"

The highest work of the intellect consists not in devising new worlds, or supposed appropriate conditions, but in exploring the world as it is, endeavouring to find the laws by which its phenomena are regulated, and raising our vision to the deeper contemplation of realities as they are successively revealed.

In this manner, be it noted particularly, we lose nothing of moral uplifting. An example comes to my mind that will indicate my meaning. Amongst the great adventures of my life I recall the reading of Milton's "Paradise Lost" at a time when, with enforced leisure, my mind was free to expand, to dream, to wonder. In this reading I saw in the poem many marvels that had escaped me, I recognized the wonderful artistry by which the words were chosen so as best to lend their sensuous impressions to the meaning, and I beheld and felt the wondrous flow of the verse in its full majestic sweep.

I contemplated the architectural structure of the Heaven, and Hell, and Earth, that Milton's genius had wrought out in the delicate but brilliant essence of ideas; but all this left me cold; I found the poem inspired only when, leaving this mechanical form, the poet used the epic as the instrument of the record of his own spiritual pilgrimage.

Then from the imagination of this great poet I turned to the writings of one who called poetry "a sort of ingenious nonsense," but whose own mind had within a narrow sphere commented on the poetry of the greater world.

"The thoughts that wander through eternity" begin first to grope and feel their way in the painful but sure steps of consecutive thought; and it is that close and severe reasoning, and not imagination, that makes the glory of Newton's work. But by the efforts of his genius he has given us a glimpse of the veritable architecture of the world; not of fluted columns and fretted vaults, or gold-inlaid architraves; but that subtle and dazzling concept that all this mighty mass is held together by forces, attractions or repulsions, and movements obeying simple laws.

I contemplate the sun with its photosphere of a diameter a hundred times that of the earth, with a temperature of over 6,000° centigrade at its surfaces, and spots on that surface representing craters of volcanic eruptions into which

our earth could fall like a child's ball into a furnace; and from the storms and emanations of which radiant influences are sent out that disturb our electric instruments over ninety million miles away, and give us in the Aurora Borealis visions of surpassing delicacy and splendour. How poor then in comparison appear the imaginings of a Milton, a Goethe, a Shelley. . . . Truth is the imagination of God.

If then a doctrine be found true it must be maintained for ever; if a doctrine be found false, then the account is closed. The stars in their courses fight against it; it is a false shoot that must fade away.

In the discussion therefore of these questions of ethics, I demand something more than the authority of a great name, whether of Aristotle, or Kant, or Bergson; I demand something more than fine conceptions and exalted ideals; I demand truth; I demand demonstrations led from a base that we can all accept, and proceeding point by point with inevitable arguments to the conclusion offered.

There must be rigour in argument, otherwise the argument is of little or no value. This question is indeed so important that I desire to close the chapter on that note. I shall show in "Principles of Psychology" that there is no absolute certitude in any form of reasoning; that, in fact, reason finds its origin in the limitations of our faculties.

Yet there are certain fundamental modes of thought that are immensely more certain than others. It behoves us, therefore, to base on these, and to proceed in such a manner that step by step we scrutinize and test the sanctions of our progress. It is by means such as these, and not by aspirations, intuitions, and imagination that the basis on which civilization rests has become gradually elaborated; and the actual historic record convinces me that it is greater to build even the most rudimentary structure on sure foundations in ethics, for example, than to create airy systems without demonstrations.

Now of all the sciences that depend on reasoning, the most certain and the most wonderfully developed by consecutive efforts is that of mathematics; by the aid of mathematics we predict eclipses through the centuries, and we calculate the form and strength of the girders of the great

bridges of the world. Yet in this exact science I have found in reading the works of the famous mathematicians many instances of error, either subsequently acknowledged or pointed out with proofs by others of equal eminence; and the list of names includes those of Newton, Euler, Lagrange, Laplace, and Abel.

Where these errors occurred marked the limit of their useful reasoning. Beyond that the superstructure, in as far as depending on such results, was either valueless or dangerous. We may say so much because in this case we are able to apply right standards, and the minds of mathematicians become trained to a high degree of acumen.

But in sciences where the reasoning is less subject to control, and where by virtue of the looseness of thought and of expression both writer and reader are prepared to accept inconsecutive or false statements, can the conclusions be such as to win our entire confidence and encourage us to stake our lives upon the issue?

It is the failure to answer such questions that has brought "philosophy" into disrepute, particularly amongst men trained in the exact sciences. I have heard professors of great reputation talk almost inconceivable nonsense on the very subjects which they professed. I have waded through the morass of the literature turned out on philosophy by renowned universities, and I have listened to discussions at learned societies that are supposed to cultivate thought, and I have wondered at the faculty that allowed sentences to flow with so little meaning and such lack of cogency.

With these, however, I shall not particularly deal. I shall insist on this test of rigour in examining the works of thinkers—Kant, Hegel, Bergson, Eucken—whose words are given forth to the rising generation of intellect as authoritative. It will be found that one of the services that I have rendered to the study of ethics has been to sweep away a mass of learning that has cumbered the ground, and has produced nothing to the enlightenment of the world or the development of the intellectual powers of man.

CHAPTER II

GLANCES AT THE HISTORY OF THE DEVELOPMENT OF ETHICS

Plato and Socrates

THE great Greek philosophers are the veritable sponsors of our civilization. The germ at least of almost all that we know in our modern science may be found in their speculations; and, as in their philosophy their minds were especially preoccupied with questions of morals and of ethics generally, we have in their records abundant treasures of thought on these subjects.

It is tempting to retrace the lines of development of great thought, and to linger on the great names of Socrates and Plato. The teachings of Socrates are known to us, however, principally through the writings of Plato, and Plato's pupil and successor, Aristotle, though inspired by love and admiration of his old master, does not spare his philosophy the sharpest criticisms. As between the two, it seems to me that wherever differences arise it is Aristotle who is on the side of common sense as well as of clear reason, and it is in his exposition of the subject that we first find the lines of a true scientific method.

Aristotle

Therefore I offer here a few notes, however incomplete, on the system of Aristotle; and again, as I find myself so often in close agreement with him rather than with any who have since written on this subject, I put to myself the question: Why then is it necessary to start anew? Is it not sufficient to submit whatever emendations of Aristotle are required in the light of modern science and in view of the march of civilization since his day?

I will answer with some circumspection. In the first place I find nothing bizarre in the suggestion of going back to Aristotle. The mere lapse of time gives no measure

of progress in thought, as Galileo found when, discarding the false learning that had grown up in a thousand years of ecclesiastical dominance, he went straight to the works of Archimedes and thence linked on to the main lines of the modern development of science.¹

The works of Aristotle still read surprisingly modern, for the problems of human conduct must have remained in the broad aspects the same as in his day. Many other sciences have since developed by reason of the use of instruments not known to the great Greek, such as the telescope, the thermometer, the spectroscope, and various electrical devices; while, further, the study of quantitative relations, often involving delicate and precise measurements, has been developed enormously in comparison with what contented the Greeks.

But the problem of ethics demands a manner of approach, a wide survey, and also a certain capacity of intellect and balance of character that tend to become excluded by a narrow specialization in any one branch of science.

I have shown elsewhere² that the divisions of science into compartments are artificial, and that they correspond not to the external realities, but to the limitations of our faculties. There is a science—and this is one aspect of a true psychology—that regards all these separate sciences as springing from the same matrix, and from that standpoint sees the working of their methods and comprehends their results, and relates all this to the activity of society and the place of man in the world.

Aristotle's view of science embraced the whole field, though partly for the reason that the separate studies were themselves in a rudimentary condition. His clear mind grasped the main principles at least of the sciences of the inorganic and organic worlds, and of mental operations; his education and his position in life gave him a good outlook on the social conditions and political institutions of his time;

¹ I am aware that M. Paul Painlevé refers to Copernicus rather than to Galileo as the founder of our modern conceptions, and this view is not unacceptable, but once started on this track we come to Roger Bacon, whose mind shines like a beacon in the darkness of the Middle Ages.

² Cf. "Principles of Psychology" (forthcoming).

and his well-tempered nature, with the alliance, by no means common, of acute intellect with genial disposition, secured him from undue warpings.

He lived, moreover, at a time when the most civilized of the races of the world had reached a high degree of efflorescence and in a State where the "Mediterranean smile" shone through its works of art and literature, and its conceptions of society.

That being the case, then why do we not accept Aristotle's pronouncements as final?

The answer to this question runs on the same lines as the answer given in the "Principles of Psychology" to the question of the acceptance of the "predicaments" of Aristotle as being the fundamental processes of thought from which all others could be built. The predicaments were won in the tentative efforts of a brilliant mind which had not found a deep principle of division in the task of classification.

So it is with Aristotle's pronouncements in ethics. They represent the opinions of Aristotle, and in this way they are valuable, just as it was said of Newton in the domain of mechanics that his very guesses were profound; nevertheless they do not sufficiently form a body of science whose principles can be tested and whose organism can be developed.

To come to concrete facts which show that Aristotle had not disengaged himself from the mere modes of his time: He defends slavery; he remarks, as if the point needed no explanation, that it would be absurd to take the ruler of the State always from the same family, but on the other hand he would exclude from the suffrage farmers, merchants, and artisans; he condemns tyranny and oligarchy, but he unites with these, as a bad system of government, democracy.

There are few people nowadays who would accept all these dicta, for they show the effect of the immersion of a mind in the customs and manners of an era; the temporary and accidental are merged in the perspective with the permanent and great. That very fact, however, warns us not to reject Aristotle's conclusions on the sole ground that they clash with anything that it has since become usual to accept.

I have emphasized for the moment the points in which

he runs counter most conspicuously to some of the opinions of our later time; but if the whole course of his ethical system be surveyed it would seem to be more just in balance, and particularly to be marked by better standards than that of any condition of society that has been actually realized since his day.

Aristotle divides his ethical system into three compartments, which he calls (1) Ethics, (2) Economy, (3) Politics, corresponding respectively to the rights and duties of the individual man, the man as member of a family, and the man as member of a state.

Happiness as the Goal

A sort of serene judgment, an illuminated common sense, distinguishes Aristotle's view of human life. In his Ethics he finds a guidance in a certain accordance with nature; man should freely develop his natural tendencies. Every conscious act has some purpose, and this suggests that in the summing of these acts there should be a reference to a Supreme Goal. This goal he declares to be happiness; but he proceeds to inquire as to what constitutes happiness. He refuses to find happiness expressed in mere sensual pleasures or amusements, or even in what is called virtue. Virtue in this sense is related to happiness in the manner in which the form and rule are related to acts or achievements.

Finally happiness is to be found in the perfect exercise of faculties, and the highest form of this exercise consists in intellectual activity. The conditions necessary embrace health, beauty, truth, fortune, and the society of children and friends.

Aristotle then proceeds to discuss his conception of virtue. This virtue is nearly equivalent to what we understand by good character in action; it is expressed in the habitual exercise of the best powers of the man.

Virtue may be dianoetic or ethical. This division corresponds to the play of intellect directed to a purpose (dianoetic), and, on the other hand, the habitual exhibition of what we call the good bourgeois virtues, such as temperance or moderation (ethical). Aristotle gives the higher place to the dianoetic form; and in regard to ethical virtue he offers an amendment on the system of Socrates, for he

says that whereas Socrates was content that these virtues should be esteemed, they should also be expressed in active realization.

Then boldly, even where he is expressing a sentiment of moderation, Aristotle declares that virtue is always relative—relative to the individual, the situation, the occasion—and that it forms the mean between two vices. Thus courage has its place between rashness and cowardice, and nobility of mind between insolence and servility.

The principles formulated by Aristotle are general, but with regard to their application he remarks that the alert judgment of a superior mind will be able to complete the details.

The dianoetic virtues are themselves capable of classification into those of scientific intelligence, and the “logical” virtues which are employed in the faculty of rearrangement of scientific data. The virtues of scientific intelligence are classified again into:

- (1) *Nous*, the faculty of beholding general laws.
- (2) The faculty of deducing particular truths from these general laws.

The “logical” virtues are divided into:

- (1) The art or capacity of producing something in view of a purpose. This would include invention.
- (2) Judgment, or practical intelligence. This would include the faculties that should be possessed by a judge, a critic, or a diplomatist.

Aristotle says that there are innumerable virtues, and that they must not be reduced, as Plato endeavours, to single representative virtues, such as justice, or friendship.¹

In his *Economy*, Aristotle remarks that we come here to a higher sphere, for the life of the family is superior to

¹ Anticipating a reference to modern developments, we may observe that in this point alone Aristotle gives evidence of an outlook far wider than that of modern ethical writers who have summed up the whole matter in the exposition of certain virtues, such as the Benevolence of Hutcheson, or the Sympathy of Hume or Adam Smith.

that of the individual. He treats with clear understanding and good sense of the mutual rights and duties of husband and wife, parents and children, master and slaves.

In his dealing with the question of woman, Aristotle was far in advance of his epoch; in fact it is here that he speaks at times in a manner to suggest our own George Bernard Shaw. He upholds the liberty of women, but in the main decision of the family life he declares that the man should have authority.

As to children, they have no rights, but they are sufficiently safeguarded by the duties imposed on the parents.

Slavery is necessary, for the house has need of workmen. The slave is the property of the master, but the master should remember that the slave is a man.

The third division of Aristotle's social system is that of Politics, by which must not be understood politics such as we currently know it, but rather the science and art of statesmanship.

He finds that the statesman should regard as the justification of his work not the increase of pleasures, nor even the observance of laws, nor the fostering of commerce, nor the accumulation of wealth, but the happiness of the citizens.

Here, of course, the term happiness must be interpreted in the high sense which the philosopher has already ascribed to it.

Aristotle's ideal is a good, intelligent, well-ordered, stable government. The worst state of all he declares to be anarchy. He advocates the limitation of families when the natural increase is likely to be such as to diminish the happiness which the state should afford. To this end he consents to abortion and to the exposure of sickly children.

Education holds a large place in his ideal state. As to the constitution, he says that the only sovereign should be order as directed by reason. Amongst bad forms of government are, as we have observed, tyranny, oligarchy, democracy; and amongst the good forms are royalty, aristocracy, "policy," by which he means such as would emanate from a good parliament.

When he speaks of royalty it must not be supposed that he means hereditary monarchy, such as we know it; that form he dismissed as not being worth discussion. Aristotle's royalty is that of great executive power in the hands of a

chosen man; it is well represented in the Consulate of Napoleon Bonaparte or in the Presidency of the United States. The best of forms is that of a well-ordered republic.

No proper understanding of Aristotle's system of ethics can be obtained by fastening on one feature and throwing that out of the perspective. We are shocked, let us say, by his defence of slavery, and therefore it is worth while questioning as to the steps by which he was led to such a position. It must be remembered that slavery was a regular institution in Greece, and indeed throughout the East from time immemorial, and that the custom was so deeply rooted as to survive to our own time.

Aristotle's attitude towards slavery was something like that of the good planter in "Uncle Tom's Cabin"; in these circumstances much of the hardship of the condition becomes mitigated, and the slave himself does not experience any special unhappiness on account of his dependence. Then, again, the slaves were in great part obtained through successful wars, and the custom of enslaving prisoners is still held in good repute amongst ourselves, at least during the continuance of the war.

The Greeks were greatly superior to the surrounding races in all those forms of culture which they rightly appreciated, and the "Barbarians" were in comparison not merely ignorant and uncouth, but apparently incapable of high development. They excelled only in mechanical work, and this the Greeks despised not only by natural inclination, but by virtue of the teachings of their philosophers.

We have here touched upon certain defects of the Greek character—want of wide sympathy and want of appreciation of mechanical arts. For these defects they paid with their existence, for they were prominent amongst the causes that limited their science and brought about the downfall of their state. The exclusiveness of the Greeks prevented assimilation and expansion, and even the proper organization of the forces they had at their disposal; thus they fell victims to the Romans, whose intellectual and artistic product is meagre and poor in comparison with that of their brilliant neighbours, but who by superior political organization, and finally by weight of numbers, beat them down. We have here an example of the practical effects of ethical systems.

In regard to the aversion of the Greeks to manual labour and to mechanical appliances, this sentiment prevented them from directing their ingenuity to invention, and rendered their science comparatively barren of experiment. Hence the Greeks were denied the glory of the invention of the telescope and the microscope, or the steam-engine as we know it, although the principles they had discovered brought them within measurable distance of such applications.

Dealing with proposals to limit the birth-rate, Aristotle regarded this in a scientific manner after a survey of all the considerations involved. It is almost impossible to attain in our society to such a calm, objective manner of vision; the subject, if discussed at all, is immersed in a theological atmosphere, and the forces of prejudice, and fear, and hypocrisy are invoked to cloud the real issues. This much is evident, that if free play were given to the need of procreation, and no restriction ever placed on the result, the human race would in a short time be unable to find sufficient nourishment for its continuance. Limitation is therefore inevitable, whether it be by deliberate means as provided by the system of Aristotle or in the haphazard fashion of the play of human folly, cruelty, vice, or the vast demoralization of secret practices.¹

In reference to Aristotle's disapproval of democracy, it is not sufficient to speak of the march of progress, nor to overwhelm the reason by battle-cries of prejudice or of rhetoric. It is only within the most recent times, after centuries of human efforts that have moulded our institutions and helped to form our very characters, that democratic government has been tentatively established.

The Revolution in England was not democratic in principle, and it resulted in the establishment of one hereditary monarchy, though short-lived, for another. The secession of the American colonies was not brought about as the result of a clear-cut determination which set democratic ideals in their full scope in opposition to those of monarchy.

¹ To blink these facts is neither scientific nor moral, but it is usual with those disputants who claim to proceed from high ideal principles.

Democracy dates from the French Revolution, and the ideas that spread from that unexampled outburst of great conceptions and noble aspirations have helped to give force to various democracies that have been founded since; yet even now the progress of democratic ideas in Europe is perilous and uncertain.

In the British Empire democracy is not in existence either *de jure* or *de facto*. There has been a development of democratic notions, and an establishment of many democratic institutions, but all these have been set up under the ægis of a monarchical system whose origin was the denial of all democracy, and whose forms are redolent with flagrant challenges to democratic conceptions.

In comparing Aristotle's system with the modern state, we must not be deceived by terms, we must look to the essential being of things, as, for instance, when we recognize that Cromwell under the name of Commonwealth gave the country a form of usurping royalty.

When we reflect on Aristotle's intentions we see that by his rejection of democracy he did not exclude such constitutions as those of France and the United States. They correspond indeed to his well-ordered republic. He meant rather to condemn the rule of uneducated people, ignorant of laws and destitute of the powers of conducting a government likely even to realize their own desires.

Grounds for variance from Aristotle's conceptions will appear when the rapid historical survey is completed, but I would ask the reader here to endeavour to gain a fair notion of the whole intention and the manner of vision of this great thinker, and to compare it with that of any modern statesman or writer on political and ethical subjects.

In order to disabuse the mind of mere prejudices, one should imagine Aristotle judging by his standards any of our established societies. The Greek philosopher would see in the first place—and this is extremely important—that whereas, by virtue of his vast learning, experience and active supple mind, he had been able to view society as an organism developed into all manner of co-ordinations, complexities, inter-dependences, and manifesting a vast variety of functions, the views of most modern statesmen are immersed in

the narrow grooves of party politics, and this to such a degree that it would be almost fatal to their authority to raise their minds to a greater conception.

Aristotle wishes to give free play to the development of all the human faculties and to the institutions which have been founded accordingly; but he reaches this conclusion, so contrary to our practice, that he would place at the head of this ideal structure the man of intellect, and vision, and high moral purpose.

These are not the qualifications that most certainly win favour with electors or caucuses in modern days, where considerations of "practical politics," that is to say, the play of material interests, are such as would amaze and disconcert the teacher of old.

In the whirlpool of forces in our modern life, the inversion of standards would have seemed to Aristotle grotesque; for whereas he set the highest store on intellectual work, and particularly in the realm of high scientific speculation, we find that in our modern states intellect, as intellect, wins little esteem, and enjoys no privilege or even easement, unless it be subservient to some lower need or be capable of use as expressed in money. Faraday, whom Huxley declared to have been worth even in material importance the whole of the kings of Christendom, lived his life on a pay less than that of a valet of a lord; yet Faraday was one of the fortunate beings, recognized and honoured. Such are salient instances amid thousands where Aristotle's sense of proportion and of merit would be shocked; and whenever the comparison is brought to definite terms the modern man will recognize that it is usually the Greek who upholds the higher ideal.

The influence of Aristotle has not throughout the centuries been correspondent to his greatness. Certainly his name was invoked as authoritative during the Middle Ages, but the ecclesiastics fastened with peculiar instinct on those parts of his teachings which were weak or false, and his fame served to retard the progress of thought. It was not till Galileo tested Aristotle's conception of mechanics decisively by dropping two balls of lead from the Leaning Tower of Pisa that the mere authority of the Stagyrte received a mortal blow.

The Germinal Idea of Aristotle's System

A question remains to be asked, and that is as to the "germinal idea" and the mode of reasoning that led Aristotle to the establishment of his system. The work of a great analytical mind is visible throughout its structure, but the basis from which he proceeds is not so evident.

It would seem that in his endeavour to trace out the destiny of the man as an individual, he was led to consider him in regard to all the conditions that determined his actions. The principal of these were :

The life as an individual.

The life in the family.

The life in the state.

Forming degrees of comparison of state with state, he naturally assumed that the government of Athens offered the highest example, and his rules of politics are derived by exchanging the manner in which this government, conceived as working at its best, excelled more imperfect states. This line of thought led him to be too complaisant in regard to certain incidents in the Grecian state and in the family, as, for instance, slavery, where there was nothing offered to his contemplation to bring the suggestion of incongruity.

With regard to the life of the individual, he forms again a comparison between the man of fine accomplishment and the inferior specimen, of whom the lowest example was the slave. He marks the shortcomings, mental and moral, of the lower mortal, and points out for disapproval the causes that produce these results.

Then turning to the cultured product he examines his purposes and aspirations, as, for example, in his own person, and proposes the removal of the obstructions that hinder his free development. He examines the main motives of his life, and distinguishes those that have most permanent force. In all of these he finds that satisfaction of a need is implied in order to give the necessary driving power. Hence he arrives at the recognition of happiness as a goal, and reflecting on such pursuits as yielded him the most durable happiness, he gives the palm to the intellectual activities.

In the assessment of values here he is aided by the actual condition of science, for it is obviously both more difficult and greater to formulate a general law than to give a particular instance, since the mind once in possession of the law may proceed to all or any particulars by way of application.

By such a process of thought Aristotle arrives at the distinction of the dianoetic and the ethical activities, and the subdivisions of each of these.

If this survey be compared with that offered subsequently in regard to Herbert Spencer's system it will be seen that Aristotle's method is tentative and not basic. In *Ethics* as in *Psychology*¹ he failed to attain to the deep piercing analysis that should afford him the scientific principle of his classification.

Aristotle, having thus failed to find a true objective guide, was left to the mercy of his own personal experiences, and he became unduly submissive to the immensely powerful influences of the customs of his day and of his State. Hence arise the imperfections in this system that nevertheless stands out amid the mists of centuries as one of the noblest achievements of the human race.

With this respectful salutation to the genius of the great Greek I pass on to the study of other forms of ethical philosophy.

¹ See "Psychology: A New System," and the forthcoming "Principles of Psychology."

CHAPTER III

THE STOICS AND THE EPICUREANS

THE philosophy of Aristotle never found general favour except in its unscientific aspects. This neglect was in part due to the fact that it was reasonable and that it made no special appeal to temperamental excesses.

The consideration of the history of the subject will convince the unbiased student that for an ethical system or a religion to attain great vogue it must profess some doctrine which runs counter to normal experience, and must compel certain practices and rites that form a perpetual challenge to ordinary reason.

If a doctrine be truly based, and derived by rigorous deduction from certain accepted premises, it falls into the domain of science, and it fails to show any of those supernatural attributes that most people look for in their religious beliefs. If, however, in order to mark its superiority to ordinary sense, a religious faith propounds even what at first blush seems absurd, only those individuals will be debarred who build on reason, and these are comparatively few. It is of the essence of faith to surmount such obstacles, and there is a profound truth embodied in the saying: I believe because it is impossible. In face of the incomprehensible, faith, where negation is disallowed, is indeed the only resource.

These remarks are introductory to the consideration of the ethics of the Stoic school, which dominated the minds of a powerful body both amongst the Greeks and the Romans, and which, moreover, has furnished us with some of the most inspiring examples in history.

The Stoic philosophy was ostensibly founded on a general view of nature, and linked with very imperfect and false explanations of physical phenomena. The conception of the universe was pantheistic and monistic; substance consisted

in a sort of subtle essence, or fire, which was at once matter and force.¹

The important part of the Stoic doctrine was the setting up of the ethical position that the sovereign good consisted in refusing to obey any influence except that of reason, and that reason must be conceived as abstracted from the conditions—health, pain, good or ill fortune—that usually tend to determine its judgments.²

Now there are circumstances where it is imposed as a duty to resist pain and terror and to sacrifice life in the defence of some high principle, as, for instance, when a soldier remains at his post to secure the safety of some essential force, or when a martyr suffers a cruel death rather than prove recreant to his conscience. These examples are often spectacular in the course of history, but by their educational effect they help to form our characters and convictions. Thus the Stoic ideal gains that sort of allegiance which we have noted as given to "Spirituality."

The test in both cases must be reference to nature, and if there be found a warping from the line of true development, this ideal must be discarded. Where Stoicism appears to serve is in crucial tests; but the main tenor of life is not made up of such ordeals, and it is not necessarily the case that the Stoic habit is the best training for these when they come. Stoicism places an undue strain on human nature, and thus eats up the reserves of health and elasticity of

¹ It may be remarked here that these obscure guesses of Zeno and his school may claim a certain confirmation in the most modern conception of matter. The tendency of modern physics and chemistry, as exemplified in the study of radium and its derivatives, for example, is to reduce all substance to one, the hydrogen element. The varieties that we know arise from different modes of combination within the above. The notion of matter and force ultimately coalescing has also been revived in the study of the general doctrine of Relativity, where it is assumed that the mass of an elemental particle increases with its velocity. It does not appear, however, that Zeno had in mind these developments; his system had the humbler origin of vague though ardent supposition.

² The whole question of the factors implicated in the production of Reason, the character of Reason, and the ultimate sanction of Belief, form the main part of "Psychology: A New System" and "Principles of Psychology." The outcome of that study shows the deficiency of the Stoic conception in this regard also.

spirit which may tide one over a difficult situation. Shakespeare, as the result of his experience, remarks that :

“A merry heart goes all the day,
Your sad tires in a mile-a !”

If that be true in matters of physical endurance, it is still more likely to be true in the complex and peculiar stresses of mental trials.

The Stoic endeavour defeats itself. Consider, for example, the Spartans who have presented us with noble examples of conduct, but whose character was too intolerant and limited and intellectually restricted. They made a cult of force, even of physical culture. But in the arena of force they failed to win. The genius of Themistocles was superior even on that plane to the dogged obstinacy of Eurybiades.

The feats that have been recorded of the Spartans have been surpassed by modern athletes trained in another and less exacting régime. The brightest period of the Spartans really occurred before the time of Zeno, but even then though without interesting themselves in speculative doctrines they were carrying out the practices to which are now given the title Stoic.

The Romans at their greatest were also exponents of the Stoic doctrine, and our admiration is given to their fine traits of character and to the works that they have left as monuments of toil and patience; but that admiration becomes tempered by the reflection that in a thousand years of dominance they produced no one truly great in the very arts as, for instance, of engineering, to which they devoted the best of their talents. There is but little of the divine genius of science such as we find in the Greeks from Thales to Archimedes, and in the world of literature the few names that shine are mostly those of freedmen or foreigners to their race.

The Stoics have a remote affiliation with the fakirs of India; in both the great feat of accomplishment is not to develop the natural faculties, but to harass nature with splints and bandages and to exhibit the inharmonious development of certain powers in the process. It is not well to constrain nature, it is better to question her and to submit to her guidance.

The Epicurean Philosophy

In contrast with the Stoics we have the disciples of Epicurus, though the genial Greek would have been at some pain to recognize his doctrines in the practices of so-called Epicureans. The main directions of Epicurus are indeed not far apart from those of Aristotle. He makes the chief good of life to consist in pleasure, but in his scale of pleasures he gives the highest place to intellectual pursuits.

Aristotle made happiness the goal, and he made happiness for the individual consist in the exercise of the intellectual powers. Lower pleasures were rather the guide than the end of the search.

In this regard the difference between Epicurus and Aristotle is rather one of words; the real variance must rather be sought in the modes of outlook of the two men. They both derive from Plato, Epicurus having been a disciple of Xenocrates, who was taught by Plato; but Epicurus failed to branch off into that spirit of research and splendid scientific organization which gives immortal fame to Aristotle. Hence his system of ethics is formed on fewer considerations, but fastens rather too narrowly on the aspect of motives.

The life and manners of Epicurus give no encouragement to the degradation of his doctrines into sensual indulgence; but he must accept some of the responsibility, for if the goal be pleasure, then to the sensual the goal is sensual pleasure.

Neither Zeno nor Epicurus sought widely enough, nor with sufficient scientific method, for the data of ethics; and for this reason alone one might have disregarded their systems, but their importance has been shown in the great rôle which their dogmas, or practices related to them, have played in the course of history.

The fusion of the two temperaments—Stoic and Epicurean—indicates a fine type of character.

CHAPTER IV

BRIDGING THE DARK AGES

THE Roman Empire was a kind of ethical system in practice. The Imperial system produced few thinkers, but two may be mentioned: Epictetus, a boldly sculptured character of the antique type, and Seneca, who seems almost modern, for he found the profession of the noblest sentiments compatible with flatteries of his Imperial master, Nero. This was an early example of that "admirable spirit of compromise" which plays so great a part in our own political affairs.

The Roman Empire in its dissolution left as a legacy to mankind the valuable system of laws, which form the juridic foundation of nearly all later civilizations. The Church adopted them into her formal organization, while adding various matters derived from religious sources. The value of these, from the standpoint of scientific ethics, will be referred to later; suffice it now to say that the practical result was to produce a state of affairs the most discouraging to our common humanity of any period of history.¹

Dante

During that long interval the gleams of a high intelligence here and there light up the intellectual gloom. Dante, who figures in the early fourteenth century, has a wider circle of readers now than in his lifetime. His "Divine Comedy" may be appreciated simply for its poetical value, but a great poem of genius is always at the same time a work of ethics.

Lest it should surprise the reader that I delay a moment to consider this work of art in regard to the development of ethics, I will say, in anticipation, that few of the works of formal ethics which we shall have to consider are satisfac-

¹ Jacobi, the famous mathematician, once began a lecture: "There was once a thousand years of night." It is not for nothing that this period has been styled the Dark Ages.

torily based upon science. What then remains? The impact of the general customs, conventions, current doctrines of the time upon the mind of the author, and the promulgation of his own personal opinions and aspirations. Whenever the scientific plan is lost, then the rest at its best is literature, and at its worst mere nonsense, even though pompously expressed.

The poet therefore stands on no inferior ground in respect to his credentials; he is by his nature more sympathetic and receptive, and, when truly a great poet, he rises above his personal motives and becomes a kind of living flute through which the higher voices of the time blow their message to the world, and wherein are found mingled notes of a subtler meaning and higher inspiration, coming the poet scarce knows whence, and only dimly feels why.¹

Dante based the architecture and the theatrical effects,

¹ Another question may be asked as to whether a great work of art, and especially a great poem, may not be appreciated quite apart from its "thought," whether indeed the term "thought" does not introduce something extraneous to art, and likely to vitiate true poetic appreciation. The answer to this question will be found in an analysis of the components of poetry. There is the form of the verse, and then the rhythm, the subtle movements, the cadences, and all those sensitive little pulses that give their subtle, exquisite delight; then there is the mastery of the words themselves, the blending of their sounds into harmonious sequences; but earlier than these effects there is the first conception, the intention, the movement of the whole, the evocation of emotions, the vivid painting of graphic effects.

Now the technique of the verse, abstraction being made of the meaning, resolves itself into an art comparable to that of music; but viewed in this light the effects of metres and all the other components of versification are but products of rudimentary form. A similar comparison may be made with regard to pictured effects.

There remains then the conception, the intention, the force of onward movement. Here the interest rises at once in proportion as the thought is deep, true, and winged with a seizing quality. Here we have the true poetic inspiration. Divorced from this meaning we are dealing with mere artistic toys.

In judging contemporary work the question of the toys is likely to be obtruded on account of the claims of artistic schools, the dominance of some particular mode, and the cant of the circles of authority; therefore, influenced by such standards, the values are liable to all manner of distortion as we may have seen in the history of literature.

But judging a poet of another age, writing in a foreign tongue, we find that the value of his poem depends on the value of his thought. The thought is not expressed in formal and didactic terms of exposition, but in the form, really more natural and spontaneous, in

and therefore to some extent the ethical trend, of his "Divine Comedy" upon a much older work, of the date of the eleventh century; his main glory was to have given his pictures a vivid and durable quality and to have sent throughout the world the electric touch of his genius.

Yet viewed from the ethical point of view there is a profound discord in Dante's conception from that of Aristotle. Dante deals in unrealities, and while his power of presentation is marvellous, there is something disquieting in the building up of fantastic figments. The saving grace of the poem, ideal love as represented by the passion inspired by Beatrice, is overstrained even to the point of hysteria, and repellent to the sanity of life.¹

Where Dante derives his great effects is in the brief but telling evocation of actual historical events, or in the

which the ideas come, full of their emotion and bright surprise as they light into day.

Few poets can bear such a manner of examination, and those who endure it have a deep ethical significance.

Thus it is the fashion of the present time to disparage Byron; but Byron figures in Humboldt's "Cosmos," wherein the main lines of human development are broadly marked, particularly in regard to science, and where the great expressions of poetic thought are noted. Such a reference is already a profound criticism, for the "Cosmos" is in its own way a notable work of ethics.

One other name I would add here, that of Keats, whose luminous beam of thought has been further sent than that of all others. The false or the conventional poets disappear in such a test; the true arise greater.

¹ These criticisms are not usual, I know; for it has become the habit of successive generations of *littérateurs* to plume themselves on their extravagant appreciation of the "Divine Comedy," and particularly to raise to the skies the spirituality of Dante's conception of love. It is, however, part of the endeavour of the present work to bring to these current judgments standards more deeply based than those by which they have imposed their verdicts; and incidentally to question the claims of that high-strung spirituality that strains the harmony of nature and escapes the control of truth.

Ultimately all great poetry must be true, although the poet's truth is expressed with impetus and passion, and with a wealth of associations and of sensuous images derived from the experience and visions of a receptive mind. Apart from that, poetry becomes the exercise of feats of technique, some one point of excellence being thrown into special relief; or else, to cite again Newton's much derided phrase: "a sort of ingenious nonsense." Poetry that can stand the test of time is as true and as deeply based as the differential calculus.

imagery composed of the forms that had made an actual impression on his mind.

* * * * *

Roger Bacon

Before the date of Dante a man had arisen in the Dark Ages of far greater significance than the Italian poet for the ethical progress and general civilization of the world. This was Roger Bacon (1214-1294).

The great extent of Roger Bacon's learning recalls that of Aristotle, while in some studies, especially those of physics and of chemistry, conceived in the modern manner, Bacon is superior to his famous predecessor.

Bacon deserves mention as one of the great ethical teachers because every observation of nature that produces some new truth, and helps to define the conditions under which our lives are impelled, is far more helpful to an ethical system than vague speculations and poetic forms that play on current prejudices or glorify falsities.

Copernicus helps to bridge the long gap between Roger Bacon and Galileo, and with the destruction of the mere authority of the doctrines of Aristotle, we come to the modern era; we find following rapidly one upon another Gilbert, Kepler, Descartes, Newton, Huyghens, Harvey—an eclosion of genius which proved the fertility of the principles of science which had so long been held in restraint by the power of the Church.

Another incident in the march of civilization that deserves notice, not only for itself but for the sequence of the events that led to its realization, is the discovery of America, and hence of the opening up of an era of adventure, discovery, and clearer definitions of the conditions that surround us.

Many legends have grown up regarding the origin of the ideas of Columbus, for one finds a tendency in most minds to prefer puerile tales of mystery to the greater marvels of truth. Columbus not only knew that the earth was round before he set out on his first voyage of discovery, but he had numerical measures which proved to be somewhat short of the reality. Thus it happened that when he reached the Western islands he believed that he

had reached the outlying coasts of the Indies; hence the name bestowed on the islands, the West Indies.

It was to Toscanelli that Columbus owed this knowledge, and Toscanelli had himself derived it, by the intermediary of Bacon, from Eratosthenes (born 276 B.C.), who had actually measured the circumference of the earth, though by instruments that offered no great precision.

It must be for ever insisted that the great instrument of civilization is science, for that means in its complete sense a knowledge of the conditions under which we live our life; and so it has happened that whatever progress has been effected in the world is due in a far greater degree to the patient establishment of solid positions secured by science than by the dreams of poets or the intuitions of seers; though if the contemplation be raised to all that the interpretation of nature means, there will be found enough to satisfy all intuitions and to give the flight to greater dreams.

This aspect of the matter will be seen later.

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The Modern Era. Descartes

With the development of formal science it was but natural that the old questions of ethics would be overhauled and submitted to new treatment. Descartes, a mind almost as universal as Aristotle, and far superior in clearness of vision in the world of mathematics, elaborated a sort of mechanistic view of the cosmos. With the discovery of natural laws, the notion of cause and effect was becoming more and more important, and the development of this principle led inevitably to a recognition of a general determinism at least in regard to phenomena.

Descartes accepts this position, but the forms of the old theological discussions clouded even his clear brain, and so we find him regarding the soul as a sort of entity, judge of the thoughts and repository of conscience.

This high spiritual conception was immersed, as usual with the scholastics and later the Idealists,¹ in notions of gross materialism; and as Descartes in his studies of

¹ See the discussion of Externality in "Principles of Psychology."

the brain had noted the position of the pineal gland as symmetrical between the two hemispheres, and as it was not of the same material as ordinary brain substance, he imagined that the soul occupied the pineal gland, as if sitting on a throne, and from this coign of vantage directed the thoughts to right or left.

This was a conception which had a bearing on his conclusions in regard to ethics, and it gives us another example of the manner in which scientific discoveries may impinge on ethical systems.¹

There is another point of great interest in the system of Descartes. He was, above all, a mathematician, and it was he, the first, taking a leap beyond the methods employed by the Greeks, who united into one science two disciplines which had been separately developed, viz. Geometry, which had been a study of predilection of the Greeks, and Algebra, or generalized arithmetic, which had been specially cultivated by the Arabs.

When Descartes lifted his eyes from these particular subjects to the larger scope of the cosmos, he applied the methods derived from his favourite studies. Hence in contrast to the Hebrew prophets and the mediæval poets who saw the world through mists of emotion and passion, Descartes regards it all with the eyes of an uplifted mechanic or carpenter. This example may be well kept in mind, for it will be found often repeated with appropriate changes, where a man who has achieved success in one domain of speculation turns his attention to another.

Thus, for instance, Leibnitz reduced the cosmos to the monad wherein all the potentialities of the world were contained. The mystery of this conception becomes less when we reflect that Leibnitz concentrated his attention upon the Differential Calculus and that his mind was accustomed to formulæ which contained the principle of construction of extensive geometric forms.

When Newton turned his attention to the problem of

¹ The pineal gland is the representative, in vestigial form, of a third eye; and that eye still exists externally in rudimentary form in a genus of serpents, hatteria. It is not certain that such a discovery would have disconcerted Descartes, for he was led in the logical sequence of his speculations to regard animals as automata.

tides he used the same means of study of attractions of masses which had served him in the theory of gravitation. When Thomas Young took up the same problem he considered the influences of undulations in the manner to which he had been accustomed in his researches on light. And so the list could be indefinitely extended.

The reason is that great mental energy has already been expended in developing a certain instrument of analysis, and that also when a general principle is discovered in Nature the number of its applications is very great.

And so with regard to ethical systems we shall find that in default of science these are established not on the general realities of things but on the bias, prejudices, predilections and favourite strain of mind of the system-builder.

CHAPTER V

THE RISE OF ENGLISH PHILOSOPHY

To give a connected account of the development of ethics it would be necessary to notice a thousand contributory forces and movements, but all that is here intended is to touch on certain salient features of the question so as in this way to become better acquainted with the difficulties of the problem, and also to exhibit the exposition that will follow in its proper setting.

Thus, for example, it might be considered laudable to devote a chapter to the system or the opinions of Francis Bacon. But we have now reached a stage where in searching for the work of those who have built up any great body of theory in ethics, even false theory, we must look to definite original and cogent work that has added some one definite link in a connected chain. Regarded from this point of view the work of Francis Bacon dwindles to something inconsiderable. His was an alert, active mind, ever ready to learn, to combine, to throw out hypotheses, but neither by education, nor trend of thought, nor structure and habit of generalization was Bacon's mind of a scientific cast.

His "Novum Organum" added nothing new to science. The experimental method which that book advocated had already been practised by men of greater mental calibre than Bacon, and when he himself turned his attention to research he hardly touched on experiment, but proceeded to immerse his mind in the old studies and to quote authority like a lawyer. The words of Gilbert, one of the true breed of scientific thinkers, sum up his scientific attainments: "The Lord Chancellor talks science like a Lord Chancellor."

Bacon, by virtue of his title and position, exercised far greater influence amongst those who patronized science or talked commendably of science than the men of science

themselves; but that is rather an incident of those indefinable rules and creeds and social tendencies and etiquette which bind society together.

Hutcheson

One of the first of English-speaking thinkers who attempted to set up a system of ethics was Hutcheson.

He rested on the base of Benevolence, and made this the standard of all acts. A system of this sort hardly comes within the category to which praise or dispraise can be given. It escapes criticism by its insufficiency, for there are here in evidence no deep base, no clear conceptions, no cogent arguments, no wide outlook, no attempt to investigate all the factors that may be essential among the conditions discussed.

If we return to Aristotle again, we find that a mere glance at his general system makes the body of Hutcheson's arguments appear almost ridiculous in comparison. Aristotle may occasionally reach false conclusions, but there is no part of his argument where his discussion of things is otiose; it is evidently, therefore, not possible to select one out of a thousand factors, and without analysis even of that, to say: Behold the motive power of ethics!¹

Hutcheson is mainly remarkable for having given a stimulus to the acute mind of Hume.

Hutcheson had derived from Benevolence, with which he identified virtue, a train of good qualities: Veracity, Fortitude, Activity, Industry, Sagacity.

Hume and Adam Smith

Hume, seeing Hutcheson's excellent attributes parade across the field in a manner rather too disengaged, reasoned that there must be beneath that show some general principle.

¹ The modern intellectual world can show many instances of a similar kind. Out of all the faculties of the mind (*cf.* "Principles of Psychology," where the Fundamental Processes are determined) certain philosophers select Association, and they say the consideration of this is sufficient to explain psychic phenomena. This is as absurd as if one were to say that a watch works simply by the hands turning, therefore it suffices to study the hands.

When out of a number of components which in action produce a result, the work of one only is examined, then not only is the total function unexplained but the manner of operation of that one is misconceived.

The mere analysis of that complexity does not itself discover the emotion necessary for the appreciation of these qualities, and thus as reason does not suffice, he asks for something that produces in the mind the approbation, or in other cases the blame, that we experience.

Hume eventually declares for Sympathy, and then in order to develop his system he links this Sympathy with utility, though to utility he does not give a low and material interpretation.

Adam Smith, who followed Hume, adopts Sympathy as the main source of those virtues which suffice for an ethical system, but he denies that the feeling of Sympathy is dependent on consideration of utility.

Adam Smith elaborates his argument with many instances of the value and power of Sympathy, and he has a certain intuition of a deeper psychological explanation of the origin and manner of the feeling of Sympathy than Hume possessed, but to both these philosophers, as far as their systems of ethics are concerned, a similar criticism may be applied as to Hutcheson.

Hume's chief service in the domain of psychology and of ethics is that of a critic. He is acute and keen to perceive the weakness of argument, or to carry a thesis to its logical conclusion, and so, if it be unsound, to expose its weakness; but apart from his acumen and good judgment and intellectual energy—qualities enhanced by an attractive literary style—Hume's mind had no great organic structure; he was deficient both in scientific knowledge and that method which consists in obtaining great generalizations from deep sources.

CHAPTER VI

TYPES OF GERMAN PHILOSOPHERS

Kant

HUME has a particular interest in the history of ethics, however, for in the impetus which he gave to Kant—the Königsberger declared that Hume “awoke him from his dogmatic slumber”—we find a link between British philosophy and that style of system-building of Kant, Fichte, and their disciples, which was destined to dominate the authoritative circles in English universities, and to reappear in all manner of forms in English literature, and notably in Coleridge’s speculations and in Carlyle’s “Sartor Resartus.”

To deal step by step with Kant’s philosophy, and to trace out its development in the sphere of ethics and of politics with appropriate criticisms, is not possible here on account of the voluminous character of his writings.

There is, however, another manner of applying criticism to a philosophical position, and that is by showing that something essential to its establishment or some corollary logically deduced is incompatible with a deeper law than that on which the system rests.

That is the mode of criticism which Copernicus applied though tacitly to the old cosmogony, which Galileo applied to the mechanics of Aristotle, and by which Lavoisier tested that theory of phlogiston, which, though almost meaningless, had filled the speculations of chemists for generations.

In “Psychology: A New System,” and in “Principles of Psychology,” I have shown how to reach a more fundamental base than that of Kant, and thence to conduct the arguments step by step in a manner of rigour unknown to his philosophy, and finally to bring to the test of the standards obtained certain results of his philosophic system.

In formulating his “categories” he failed to obtain a

principle of division which would assure him of a classification both necessary and complete; the categories are both defective and redundant; and even on this basis Kant fails to derive by consecutive arguments his ulterior positions of the nature of reason and will and the existence of the transcendental world. The *Kritik der reinen Vernunft* is a vast *petitio principii* in which the defects of rigorous argument are hidden to some extent by confused arrangement, lack of sequence of thought, and by the covering up of unallowable assumptions by ill-defined symbols and nebulous conceptions.¹

The Germinal Idea of Kant

In order, therefore, to discuss Kant's philosophy, I will approach the question by a novel route, and endeavour to find the "germinal idea" of his work and to retrace the inevitable development.²

Kant (1724-1804) was of Scottish descent, but he was born in the artisan class in Königsberg, and all his life he spent in that town under the Hohenzollern monarchy. These details are not unimportant in regard to his philosophy, for if a theory be not scientifically founded then it rests on the personal opinions of the author, and for the origin of these we must search amid the antecedents, physical and moral, of the individual, his constitution, his education, and the conditions under which he lives.

Given his mental and physical characteristics and his native environment, his course is in the main lines determined, except in as far as accidents may affect the form of events or cause variation of details.³

Kant imbibed from his Scottish ancestry a good character and pious disposition, and at that period this piety took the form of endless discussion of theological questions, not the

¹ As the psychological basis of the present work is referred to on various occasions it may be as well in this volume to give, though in mere outline, indications of the tenor of "Psychology: A New System" and the later work, "Principles of Psychology"; accordingly references will be found at the beginning of Part II, page 56 *et seq.*

² This method will be employed in regard to Herbert Spencer also.

³ Of this manner of discussing character and output I received the first suggestion from Bain's "John Stuart Mill: A Criticism."

less anxious and exciting that certain aspects of these were entirely unreal.

Though the opinions which had been received in trust by these disputants depended on accidents of birth, it was, nevertheless, a point of honour amongst Kant's Scottish forbears, even to the extent of cutting the throats of the opponents.

Kant himself would never have been apt to that form of defending eternal verities, for he was physically a poor and degenerate specimen. His was rather the rôle of the intellectual champion who provides the reason for the more picturesque and possibly more effective display of his vigorous brethren.

Amongst the positions discussed interminably by the theologians were those of conscience, freedom of the will, the origin of evil, and such matters which provide pabulum for controversy from generation to generation.

Kant was a studious youth, and the extent of his knowledge was great; but I cannot find that in the matter of good valid education he had either a well-organized or a well-furnished mind; his mental energy had become too greatly absorbed in such barren topics as we have noticed, and his training in positive science was defective.

With a puny body he possessed a temperament of some fortitude, and this had been strengthened by the Scottish precepts of Stoicism in action, a stoicism, by the way, which did not prevent excitement on the occasions of the daily crisis and ordeal—the arrival of his cup of coffee at a due, perhaps excessive, temperature.

Kant was physically cut off from large worlds of emotion, and as he spent his whole existence in Königsberg, and carefully safeguarded himself from adventurous exploration even of that little town, his life was one of the most monotonous and untroubled that could well be imagined.

I cannot conceive of a training more absurdly meagre for one destined to write on ethical questions, on those problems that should hold within their circumference not only the range of knowledge, but the whole gamut of emotions. Surely in the variety, the extent, and the quality of the experience, or experiments required, nothing less is

commendable than that the whole world should be regarded as the appropriate laboratory.

Super-add upon that the crushing influence of the bureaucratic régime of the dullest and most mechanical system of government in the world, and then ask, with wonder, what could this little atomy of a man, with his hysteric constitution set up in splints of stoic endurance, with his brain filled with fumes of theological disputes, with his moral nature invalid and shrivelled, and his outlook wilfully closed to the most restricted and uninspiring of surroundings; what could he have to say of illumination in that domain where human passions rage in their lurid fires or splendid aspirations, and where thoughts, emotions, hopes, fling themselves above the ocean of stress and strength towards some glimpse of divine ideals?

In a study which, however severe, involves only formal methods, as in mathematics, I grant that the great genius of a solitary thinker may overcome all obstacles, but that is not the case with ethics. Still less can it be so if the scientific base, the discovery of which is still possible in these conditions, be not truly laid, and if the arguments proceeding from the premises adopted lack both sequence and cogency.

What, then, do we actually find in the system of Kant? Precisely what we should have been led to expect; never a great comprehensive view, like that of Aristotle, of the problem that he has to treat; but disquisitions from which finally arises the famous "categorical imperative" which pure reason delivers to pure will, and which, though every motive protest, must inevitably be obeyed.

Kant was waked from his dogmatic slumber, he tells us, by Hume. While pious people among Hume's compatriots at home were worked up to violent exasperation that found outlet in mean intrigue to destroy his worldly position, Kant felt the challenge as an intellectual champion.

He does not consider the whole matter from the ground of things in complete impartiality; he desires, above all else, to demolish, or at least to foil, Hume, and he cries throughout the *Kritik* that we must save this Freedom of Will.¹

¹ I refer the reader to the forthcoming "Principles of Psychology" for the destructive criticism of the speculative part of the *Kritik*.

But just as he forces himself to find a reason independent of the indication of the senses, and invents a transcendental world where this is possible, so he finds in the same domain of his conceptions a possibility of enforcing duties divorced from motives.¹

Kant's philosophy is, in fact, emotional. He was seeking in expression a satisfaction for the emotional needs of an etiolated nature, and for his stoic doctrines. These stoic doctrines, it must be remembered, were reconcilable in his mind with that sort of servility which was the moral incense of the dutiful subject offered to the Hohenzollern God.

Kant had been terrified by the early mutterings of the French Revolution, and his mental and moral nature never recovered that shock. His writings are couched in strange, pompous, highly spiritual, but unscientific forms, the expression of the bourgeois stunned out of the petty round of his affections by some great world event of which he cannot embrace the significance, but of which the manifestations fill him with alarm. As a buttress against the wicked French Revolution Kant paraphrases into a false philosophy the ordinances of the Prussian Monarchy.²

There is an aspect of Kant's methods which it is interest-

¹ Goethe, the value of whose contributions to science the Germans have been accustomed to exaggerate beyond measure, yet saw with clear vision the absurdity of Kant's conclusions here, and laughed at him in more or less sprightly epigrams.

² This account of the transcendental philosophy departs widely from the conventional treatment, but though I have presented it in abrupt conciseness, it does not follow that it is less true on that account. I could develop the theme so as to show all the reasons by which it could be sustained; I have instead taken bold steps from point to point.

Kant's exposition is so obscure and involved that even great authorities differ widely with regard to the very translation of his phrases, and Max Müller lays ominous stress on the responsibility borne by the prepossessions. This being so, many a student has spent years of study on Kant without feeling that he possesses an instrument, or an illumination, or a body of principles, or without being sure even that he has grasped Kant.

I say therefore, and once again I rest on demonstration, that the best beginning of the reading of Kant is to study "Psychology: A New System," or the "Principles of Psychology." Then the understanding of Kant will be facilitated, for the student will perceive what Kant aimed at, and wherein he failed, and what was the meaning of his obscure searchings and tentative efforts.

ing to note, and which recalls the remarks on the attempt of Descartes to formalize the cosmos.

In all the work of the German thinker one finds a search to determine the origin of things. Kant finds that the world we know through our senses is but a representation of the real world (things in themselves), and he watches the transit, so to speak, from the world of things in themselves to the world of sense in order to note the processes. I have shown elsewhere¹ that to regard what we know of by our senses as a transformed appearance of some entity having existence is illusory. It is also illusory to suppose a form of reason that is independent of the effects of sense. I have shown that reason is conditioned by the nature of our senses and by their limitations.

The tendency of Kant, however, to seek for origins is laudable; and hence we find that the really valuable part of his speculation deals with the origin of the solar system. Kant succeeded here, because the influence of prepossessions and positions to "defend" was less, and because his conclusions could be tested by appeal to physical nature. Moreover, he contented himself with a vague outline of a system, while it was reserved for the genius of Laplace to handle the "nebular hypothesis" with real power and to give it development.

One further remark seems called for before parting from Kant.

The intelligence of the ordinary reader is disconcerted, or at least disappointed, when one by one the systems of thinkers are demolished, even the most elaborate; and the half-formed suggestion seems to arise that they cannot all be false.

There is no reason to offer for this presumed validity of any one of these, if in fact it be not valid. There is nothing in nature that makes her yield her secrets to the best of tentative efforts that are not properly directed, as if the discovery of truth were the reward of a kind of competitive examination.

In another matter where the test is decisive we may see—as, for instance, in physics, in chemistry, in medicine—that

¹ "Psychology: A New System" and "Principles of Psychology."

false doctrines may prevail for centuries and be sedulously handed down from generation to generation, and when by an appeal to nature the baselessness of these doctrines may have been shown at length, it is seen how puerile has been the argument from authority or from our sense of obedience to etiquette.

Kant's whole transcendental philosophy is baseless, and soon it will cease to encumber the entrance to the true domain. If a proposal be made to reconstruct it—and this would be proper were the system truly founded—it would be seen how absurd it was from the beginning to build on modes of thought having only the remotest relation to the vast and complex conditions of the problem prescribed.¹

Hegel

Next to Kant the figure of Hegel (1770-1831) looms large in the German philosophy, and he has the high academic distinction of being still more difficult to understand. Hegel in his youth was accounted a forward spirit; he read Rousseau, and he hailed the French Revolution. The reality terrified him, and the repentant sinner settled down eventually as a functionary of the Prussian monarchy, while filling a chair of philosophy at Berlin.

His philosophic system is not based on nature, nor supported by any lucid or cogent system of argument. In ethics he represents the current views of the Hohenzollern régime, not in the sense of reducing these to sure foundations, but by paraphrasing into philosophic language the expressions of the servile bureaucracy of his time. Hegel finds that the moral man must obey the dictates of a universal will, even against the promptings of his own conscience; and this universal will he conceives as objectively presented to each man in the laws, institutions, and customary morality of the country.

Of the validity of this slavish doctrine he offers no proof.

¹ It is finally a comforting reflection that nature never yields her secrets or exhibits the beauty of a law that explains events unless a study be undertaken of the actual phenomena and the argument be conducted point by point with complete regard for truth. She is continually directing us, for she withholds her countenance when we stray in wrong directions, but responds inevitably and at all times when we take the right path.

It is not based on science. If then a man puts forward without science a system of thought, what does it represent? Clearly nothing more than the opinions that he has gathered in all sorts of ways through personal predilections, prejudices, party cries, conventions, and all the hazardous influences steeped in the notions of his familiars. The sum total of these has but small scientific value, but Hegel's influence, or, rather, the influence of principles that can shelter under his reputation, has been considerable. Hegel's disciples consist of two classes of people: the Prussian Conservative, orthodox, clerical type; and the pantheistic, humanitarian, anti-clerical Socialists, of whom Karl Marx was the shining light.

To unite these opposing camps was a great feat, but whether of universality of doctrine or obscurity of meaning may be left to the disciples to determine.

Hegel clothed his servility in a certain arrogance of expression. He says that you cannot argue as to acceptance or non-acceptance of the State; it is given.

In some such terms for my part I would speak of the universe as it exists; but it might be philosophically urged—and the demonstration has become easier of late—that the universe and the Prussian monarchy are not convertible terms.

That monarchy represented the summit of earthly things and something more apparently to the souls of Kant and Hegel; how has the philosophic theory been judged by this test?

The answer will be given by history. Without introducing any undue political bias it may be said in regard to the late war that the great fact that will stand out in relief is that of the possibility for one man, the Kaiser Wilhelm II., devoid of great brain power or moral elevation, or energy, or courage, or splendid achievement, or service to mankind, to have gathered into his hands the power of launching tens of millions of men to slaughter. The actual killing of men is always tragic, but the auspices under which millions went to death, the ideals they upheld, the low sources of the war, and the constraint of the immense energy involved to inferior purposes—all that seems to me more terrible than tragedy; it bears the mark of ethical disgrace.

CHAPTER VII

TYPES OF ENGLISH PHILOSOPHERS

Herbert Spencer—The Germinal Idea

OMITTING the names of thinkers who have achieved celebrity in their day, but who have left little on which scientific development is possible, we come to the work of Herbert Spencer.

He seems to me the first since Aristotle who sought to lay the foundation of ethics on deep and sure considerations.

The total work of Herbert Spencer, of which the *Data of Ethics* is the crowning edifice, is so bulky that here again we must devise some special method of grappling with it.

The suggestion arises once more to seek for the "germinal idea" of this work. The principle of evolution runs through the entire body of Spencer's philosophy, and the whole work may be regarded as an exemplification of that doctrine. The principle of evolution might thus be said to be the "germinal idea." But the further question arises—by what process of thought was Spencer led to the recognition and the foundation of that principle? He nowhere explains this directly, but from a study of his writings, with particular attention to his manner of expression, and especially aided by a passage in his "*Principles of Psychology*," I think it possible to indicate the strain of reasoning.

Taking evolution to mean the way of progress to higher development, Spencer selects for comparison two types of the organic world at the different ends of the scale, man and the amœba. He then studies the essential difference between the being and the faculties of these specimens, and endeavours to express the distinctions in general terms, and to discard any that are redundant or are derivable from those finally selected.

Spencer looked on the amœba as a creature almost homogeneous in substance and uniform in function. Man, on

the other hand, is built up in a complex way of a great variety of components, and his functions are complicated, and subject to co-ordination and subordination. Hence we get guidance as to the principle of evolution.

Spencer has several different forms of enunciation of the doctrine of evolution, but they all correspond in meaning.

From "First Principles" II., XVII., § 145 (1875), I take the following: "Evolution is an integration of matter and concomitant dissipation of motion; during which the matter passes from an indefinite, incoherent homogeneity to a definite, coherent heterogeneity; and during which the retained motion undergoes a parallel transformation."

In other passages Spencer sought to implicate with his conception of evolution the notion of increasing definiteness with regard to time and space, and having once introduced this conception he returns to it again and again with insistence, so that it should be taken as forming part of the enunciation of the doctrine.

The theory of Evolution has come to be accepted among thinking people as one of the commonplaces of science, as incontestable as the law of gravitation or the theory of the circulation of the blood. The word has passed into current usage in such a way that any change from one condition to another, especially if it be thought that a higher state has been reached, is spoken of as "evolution."¹

We shall see that there are many changes of condition

¹ When M. Houlléviqgue speaks of "evolution of the sciences" the terms may be acceptable. But, for example, we find an old chemist, Glaser, writing in 1670 of his particular science: "Chemistry is the art of opening compounds by operations consisting in cutting, bruising, pulverizing, alcoholizing, scraping, sawing, precipitating, granulating, laminating, melting, liquefying, digesting, infusing, macerating, etcetera." If we compare such an account with the conceptions of a modern chemist we do not find a change from homogeneity to heterogeneity. It is common to speak of the evolution of energy; Brunhes writes of the degradation of energy; Matout, with conceptions not dissimilar, writes of the cycle of evolution. Lord Crawford has published a book on the evolution of Italian sculpture. We hear of the evolution of the golf-ball.

These examples are given to show that the term evolution, though rendered popular, has lost in the process any precise definition. In discussing Herbert Spencer's enunciation we must be both searching and circumspect, for he aims at precision, and he bases a system of philosophy on his doctrine.

that escape the description of evolution, and we shall find it difficult, starting from any given condition, to formulate any new state inevitably derived from it by the principles set out by Herbert Spencer.

The examination of this doctrine is crucial, and it demands close attention; therefore in order to make the exposition clearer I say in advance that one will find, on close scrutiny, that Spencer's conception of the essential difference of *amœba* and man is neither sufficiently precise nor complete; and that when we attempt to apply the doctrine according to his enunciation we shall find that it is not a principle of nature in the sense, for example, in which the ascertained laws of mechanics represent the cause of phenomena, but that it is at best an indication for classification, and that its usefulness in this respect is illusory on account of the lack of quantitative factors.

It will then appear that Spencer's synthetic philosophy is not founded, in the manner of necessity, on this doctrine, and therefore that what is left reduces, as in the case of Kant and Hegel, to personal predilections influenced by prevailing opinions and customs.

Let us proceed to examine the basis of the theory of evolution.

In the first place, Spencer assumes too readily the homogeneous character of the *amœba*. It was formerly the custom to speak of these creatures as structureless, but such words offer a measure not of the complexity of the organism, but of the limitations of our own observation. The more the powers of the microscope are increased and the more these minute beings are studied, the higher do they seem to rise in the scale of development.

Sir Ray Lankester, for example, speaks of the complicated structure of diatoms possessing delicate, wonderfully sculptured coats of glass-like silica. Every free living unicell has a complete organization—mouth, pharynx, renal organ, locomotive organ. With each cell there is, moreover, a nucleus endowed with wonderful properties. That is really implied in the fact of life itself. Life involves waste, hence also sustenance. The absorption of food of any kind implies some means, however rudimentary, of reception. In the *amœba* there is a selection of food. Nutrition implies

digestion, distribution, and excretion. Distribution depends on some sort of circulatory system. There must be movement, whether in regard to the organism as a whole or of the parts as between themselves; and since these processes correspond to an ordered activity, there must be response to stimulus; there must be control of the required adjustments, and there must be co-ordination. All that implies some representative of the nervous system.

The movements of unicells are not left entirely to chance. Biologists who study these low forms of life observe that certain chemical substances attract them, and they call this tendency to draw near such substances chemio-taxis. This is merely a symbol covering a fact. Chemio-taxis is not anything comparable to gravitation; it is selective, it depends on emanations from the chemical substance as stimulating the organism. There is here some affective quality or faculty of the organism involved, and it is in response to this that movements are made.

It may be questioned whether we have not here a rudimentary mind.¹ Be that as it may, it is evident that we are far away from a homogeneous amœba, and the impression becomes increased with each fresh observation that it is only the limitations of our vision that prevent us from recognizing in these creatures a marvellous complexity of structure.

Note here, too, that as a microscopic being must conduct

¹ This suggestion is the more likely to be patiently considered in proportion as the reader has studied those organisms. Atkins, whose work with Hodge on unicells is admirable, inclines to credit the unicells with something analogous to intelligence. Amongst others who have considered the psychic element in unicells may be mentioned: Métalnikow ("Archives de Zoologie Expérimentale," vol. xlix, p. 373; 1912); A. J. Stewart ("On the Physics and Physiology of Protoplasmic Staining in Plants"); W. B. Hardy ("The Physical Basis of Life," "Science Progress"; 1906); Gary N. C. Calkins ("Protozoa"); G. Bohn ("La Naissance de l'Intelligence"); H. S. Jennings ("The Behaviour of Lower Organisms"); M. F. Washburn ("The Animal Mind"); A. Binet ("The Psychical Life of Micro-Organisms"); G. C. Crampton ("Archiv für Protistenkunde," vol. xxvii.). Cf. also Professor F. Darwin's Presidential Address to the British Association, 1908.

Hering's theory of memory is based on the supposition of psychic impressions in single cells. I do not accept Hering's psychology, but it is evident from a study of memory that modifications of cells are correlated to psychic impressions.

its life in a sphere much more restricted than ours in regard to time and space, that Herbert Spencer's insistence on the criteria of higher evolution as derived from these principles is misplaced.

Here, to prevent misunderstanding, I insert the remark that I accept Spencer's position that man is higher than the amœba; I am only traversing point by point his manner of comparison and the result. Subsequently I will reconsider all these data and endeavour to obtain more satisfactory inferences.

Let us, however, examine another part of his enunciation:

“Evolution is an integration of matter and concomitant dissipation of motion——”

I am not sure that I have completely grasped Spencer's meaning here, but I may plead on my own behalf that the onus of explaining it rather rested with him, and that he has nowhere made this statement perfectly clear. Let us examine it in one or two applications.

If we have a material system of particles, say, for simplicity, a number of billiard balls at rest, and we project amongst them another which has mass, m , and velocity, v . The energy of that projectile is $\frac{1}{2}mv^2$. When it strikes one of the others—and the effect is continued—the energy of the system remains the same.¹

It is evident, therefore, that the velocity of each of these bodies must be less than the first velocity of the body first considered, and the direction of the velocities will be also various.

If we form a picture of such processes we shall see that there is a “dissipation of motion” in the sense that whereas we had originally one velocity in a given direction, we have a series of less velocities in scattered directions.

Also, if these bodies be all retained together in some way so as to make a new connected body or system, there will be an “integration of matter,” and the “dissipation of motion” will be concomitant.

Here, then, we have an example that conforms to this

¹ Thus, disregarding losses due to such causes as friction, we would have $\frac{1}{2}mv^2 = \frac{1}{2}m_1v_1^2 + \frac{1}{2}m_2v_2^2 + \dots + \frac{1}{2}m_nv_n^2 + \frac{1}{2}mv_m^2$ where m_1, m_2, \dots, m_n , are the masses and v_1, v_2, \dots, v_n the velocities of the other bodies, and v the new velocity of m .

part of the enunciation; but the relation of this to evolution is less evident. In what way could it be said that the second system shows a higher degree of evolution than the first? The process in its simplest form is that of composition or decomposition of forces, and there is no criterion for determining that any one system into which these forces can be resolved has a structural superiority, independent of any special adaptation, over another.

The question is worth pursuing a little farther, for it will be found to touch on very interesting matters.

Take the case of simple geometrical figures. It is possible to vary the form of an ellipse progressively so that it may become a circle, or, on the other hand, may become an hyperbola. But these changes are, of course, reversible. We may speak loosely of the evolution of the hyperbola from the ellipse, or vice versa, but to the change effected we cannot apply Herbert Spencer's formula.

When we consider the actual atoms of matter from which all substances, organic and inorganic, are built up, we find a theory which modern physics makes plausible; at least, that they compose a system in which there is a central nucleus round which electrons revolve. The central nucleus is supposed to be formed by hydrogen atoms. Certain atoms may be successively reduced to others by explosions which separate one by one the hydrogen atoms from the nucleus. Thus radium may in this way be reduced to lead. If the process be conceived as reversed, we have radium produced from lead by evolution. But there is here no increased heterogeneity, for the hydrogen atoms are assumed to have constant properties.

The term dissipation of motion would seem to be more fitting to the case of a hydrogen atom escaping from the nucleus at high velocity; but we may accept, by definition, the view that dissipation of motion applies to the condition previous to this event.

What we have really changed is the relation of these atoms to each other, and this is capable of being reduced to such examples as that of the billiard balls and the relations of geometrical figures to each other. In neither case can we speak of evolution with any definite meaning; nor, indeed, can we, without something extraneous to determine

the choice, say that radium is higher in the scale of evolution than lead, or vice versa. Radium may occupy a distinct position, partly on account of its literary and popular associations, but difficulties would arise on account of the place in the scale, say, of iron or gold.

These discussions may appear almost fantastical, but the onus must rest with Herbert Spencer, for he has enunciated his doctrine in that way. The truth is that he has pressed too far the laudable endeavour to find a deep base for his theory in his attempt to obtain a great principle, and in this way he has lit upon a generalization too vague to be fertile.¹

Suppose, however, that instead of taking these mechanical examples by which to test Spencer's doctrine we proceed to the union, or, as he calls it, the integration of a cell to another cell or collection of cells. Here we introduce new factors, but the question of the "concomitant dissipation of motion" becomes obscure. The velocity of approach of the cells is not what counts here, but the relations, immensely complex when expressed in terms of dynamics, of one organism to another, and the case is not covered by the vague expression, "dissipation of motion."

¹ I am the last in the world to object to a starting point on the ground of its being fundamental, for in "Psychology: A New System" and "Principles of Psychology" I insist on the necessity of finding such a base on which to build our arguments in regard to mental processes; but certain other conditions are insisted on, and they are that such arguments shall be rigorous and cogent, leading by consecutive steps to definite conclusions.

Further, I endorse Kirchoff's dictum, expressed in the epigrammatic saying: "There is only one science—mechanics," in regard to the physical world; that is to say, all happenings in the material universe would be explicable by mechanical laws if only our knowledge were sufficiently deep, wide and well organized. But it may happen at times that even in this world of things we are on more secure ground when we renounce for the moment the desire to penetrate into the ultimate constitution of molecules and the forces that control them. An engineer has sketched out the form of a girder bridge, and he wishes to calculate the sizes of the various parts. He forms an approximation to the weight of the bridge, and as this is borne by the supports at each end, he obtains a basis from which, proceeding step by step, he is able to calculate the stresses. The base here is fundamental enough to be accepted with entire surety; but if the engineer tried to obtain the weight on each support by working out a resultant of the molecular forces in the girder, he would fail altogether.

With regard to the "definitions of acts in regard to Time and Space," which was an afterthought to the original formulation but to which Spencer subsequently attached great importance, his expression seems to me very vague, and in certain cases when he makes it more clear by his applications I have found it faulty.¹

Suppose, however, we were to waive, for the purposes of argument, these criticisms of Spencer's doctrine, and endeavour sympathetically to eke out his meaning. It is true that we get a real advance in evolution when we turn from a relatively simple body—it cannot be homogeneous—performing simple functions without variation to a complex body built up of heterogeneous parts performing functions which are not only relatively more complex, but which involve in their working out greater extents of Time and Space.

In that case is the doctrine satisfying? I answer, no, for if we form a fair picture of this process of evolution we see that complexity of type depends on the co-ordination and subordination of a great many different factors; and this implies that the development of certain faculties is obtained at the expense of others or by keeping certain others in abeyance.

It is impossible, then, to say which of two near states represents the tendency to higher development unless we have in view some standard by which the higher development can be tested, as, for instance, by some purpose which the organism is destined to achieve.

In any organism there are the possibilities of a great development of powers; but, if only on account of the necessities of time, it is not possible to cultivate them all.

If any set of them be selected and developed according to an appropriate plan, we could have, in regard to that set, a result on which we all could agree as presenting a higher type. If, for example, the powers of locomotion in a hunting animal, even primitive man, were to be brought to a fine state of excellence, we would have in the arts and achieve-

¹ Note, for example, when Spencer finds that the cerebellum subserves co-ordinations in space, the cerebrum co-ordinations in time; I have in "Principles of Psychology" shown that there cannot be co-ordinations in space that are not co-ordinations in time.

ments of such a being, something that corresponded to Spencer's definitions in Time and Space.

But these particular powers may have been brought to their polish at the expense possibly of the development of the faculty of hearing, for musical sounds at least; or of seeing, for certain shades and harmonies of colour; or of fine tactual sensations; or, again, the development may impede the best exercise of the intellectual powers. Where, then, is the test by which Spencer could lead us step by step to the higher type? He has left us with a number of faculties and with certain general lines of development, but he has—and this is a very important point—given us no quantitative estimation and no final criterion.

We may obtain these guides elsewhere, but they are not contained in Spencer's formulation of the requirements of evolution.

We get no help by watching the progress of organisms in the actual world, for lapse of time does not imply advance, and we are face to face with the problem of recession or degeneration. If that degeneration be expressed in the form of allowing certain faculties to recede by disuse and by cultivating others in compensation, then this process could quite well be described in the terms of Spencer's evolution. The process of regression may not be by the direct reversal of the previous developments step by step, and the question arises as to whether in such cases the terms degeneration or regression are not question-begging epithets.

To take a very simple case, suppose that a philosopher studying the social life of London as a sort of organism has sought for some deep basis of classification, and that having observed a vast movement of people eastwards to the City he has formulated a law that expressed such a condition of things. If, then, later his attention be called to the fact of a vast movement in the opposite direction, he may content himself by saying that these represented the inverse of the law.

But if the movement were not only East and West, but North and South, and that each of these main movements had subsidiary movements in various directions, with reverse movements, all interwoven and loosely co-ordinated, and if there were no indication to show what classes of persons

were likely to obey the law or run counter to it, nor even what relative proportion existed, nor any hint of the causes or system of causes that produced the effect, then the law would certainly not be very helpful.¹

We find, then, that Spencer's doctrine of Evolution eludes us. The reason expressed in general terms is that it presents us with a system of variables, which are not defined quantitatively, nor expressed with reference to mutual relations, nor determined in regard to direction of activity; and from these data we are asked to calculate a resultant. It is no more possible to formulate a law on such a basis than it is to offer the definite solution of a problem in Algebra in which the unknowns are in greater number than the equations which serve to determine them.²

Spencer recognized, as also Aristotle and Kant before him, that an account of ethics should be based on a clear view of psychology; but Spencer professes to found his psychology also, and indeed all the successive works of his Synthetic Philosophy on the doctrine of evolution. But evidently from what we have seen there is no basis here for a complete discussion of psychology, and Spencer's Psychology is both inadequate and faulty.³

Definitely, then, I say, on the ground of such proofs as have been given, that in regard to the claims of being founded on a fundamental and true doctrine, the Synthetic Philosophy of Herbert Spencer has no more weight than the transcendental philosophy of Kant.

What, then, remains? Simply the opinions of Herbert Spencer. These certainly have great value, although, even

¹ The conception of degeneration may well be distinguished from that of simple inversion of the process of evolution. This has been shown by a distinguished Belgian biologist, Dollo, in his study of Cephalopods. Cf. an article on the subject, "L'Irréversibilité de l'Evolution," by Robert Douvillé in the "Revue Scientifique."

² The principle of evolution has not even in biology afforded any well defined system of classification. The main laws of the orthodox classification were laid down by Cuvier, who was not an evolutionist. Alfred Giard, who was a Darwinist, but one who recognized, as Darwin did, the value of the work of Lamarck, mentions three other important systems: that of Lacaze-Duthiers (based on the morphology of the adult); that of C. Semper (anatomo-embryonic); that of Huxley (purely objective). He was not satisfied with any of these; he proposed the principle of embryonic super-position.

³ I have given proof of this in "Principles of Psychology."

if his presentation of the course of evolution were correct, he nowhere shows clearly and cogently the steps of demonstration between that and his conclusions; yet throughout his writings there are a great number of acute remarks, and the deep and comprehensive manner in which he handles his subject is itself of great educational value.¹

Herbert Spencer's little work on Education will always have value, but his theories of Style are not endowed with that unerring insight that his admirers once attributed to all that flowed from the doctrine of Evolution. His "Man versus the State" is an expression of his personal strong Individualism. It contains much that is true, but it is not the product of a wide and circumspect view.

Herbert Spencer was a good bourgeois who, apart from a few idiosyncrasies and shortcomings of temperament, endowments, and experience, saw the world with sage and kindly eyes of a peace-loving citizen; but all this gives no authority to an argument wrongly based in science.

One of the most fertile of his suggestions, though it does not arise out of his formula of evolution, is that of finding a criterion of excellence of systems in the scope and "mass" of life which it favours.

Reference will be made to Spencer later when we endeavour to find the true principles, and when therefore we incorporate all that is true of all the preceding systems. For the present I say that when we come to opinion against opinion and compare Herbert Spencer with Aristotle, I find the Greek, in spite of the disadvantage of being shut off from the knowledge of modern developments, more representative of the powers and passions of man, more plastic and genial, and brightly apprehensive, and, in the main lines, more free from the warpings and bias of time and place.

It is no part of my intention to follow the course of the history of ethics, and the examination of Herbert Spencer's

¹ A great deal of the immense authority that Herbert Spencer enjoyed arose from the bulk of his works. Even intellectual opinion is on the side of big battalions of letterpress. Looking into the matter closely one finds that in all his writings, his "Principles of Psychology," for example, there is a great volume of matter which might have been relegated to separate textbooks, and certain parts of this auxiliary matter are faulty.

system renders it of little interest to deal with the speculations of others of his time, for although I have found ground for rejecting Spencer's doctrine, I recognize that he alone has attempted a solution of the problem on the basis of science.

Bentham

Bentham and the School of Utilitarians, for example, set store by the "greatest happiness of the greatest number." The phrase has become famous, but in itself it represents less a scientific treatment than a pious aspiration. Suppose that in any contingency the two terms "greatest happiness" and "greatest number" were incompatible, what then? Suppose that in a besieged town we had bread only for a limited number, and that the dreadful obligation seemed to be placed upon us of making a choice, would we feel that the burden had been removed by the suggestion of giving to each inhabitant the maximum?

As opposed to the Utilitarians we have the Idealists of various categories. I do not reject the Ideal, be it noted, I only demand to know what it is, and in view of the manner in which the term is employed I am sometimes inclined to repeat after Shelley: "One word is too often profaned for me to profane it."

Types of Literary Philosophers—Carlyle

Carlyle, in his "Sartor Resartus," loses himself in the mists of German philosophy. The origin of the main thought of the book is this: After Kant had pointed more or less vaguely to "things-in-themselves," it was inevitable that some disciple would arise who would give a definition to these unknobles.

Schelling, catching at the slogans of science, cried: "All is electricity! All is electricity!" Fichte, from the same fountain-head, arrived at a strange philosophy, in which the great act of life was *Entsagen* or Renunciation. Carlyle, who was a sentimentalist, and, in spite of his rough manners, a weak man, had seized upon this German philosophy with the *Schwärmerei* of a Gretchen, and not the less willingly that it was incomprehensible. "Sartor Resartus" expounds the doctrine of *Entsagen*. Herein it is sheer nonsense, and to cut the matter short I will simply give my opinion on the

point, for neither Fichte nor Carlyle had any other ground for their original declaration, and they were both deficient in clear luminous views and consecutive thought.

Though I say this I may remark that there are few books which I have read oftener or with greater pleasure than "Sartor Resartus," for it has the saving graces both of enthusiasm and humour.

Carlyle noting that the world we know is nothing but the appearance, or the clothing, of the things in themselves, reverses the process of contemplation and sees in our ordinary clothes the mystic representation of a deep cult. Hence such passages as that of the immortal walk down Monmouth Street (in St. Giles'), where the Jew old-clothes vendor with his three hats is regarded as a sort of pontiff with triple tiara.

Carlyle, however, was not even a consistent guide in matters of ethics, and his originality and violence of language went hand in hand with an obsequious deference to glaring shams and servility to rank and power.

Tennyson—Ruskin

Contemporary with Carlyle were those who gave poetic adornments to an aspect of life in which he stood forth as the thinker. Tennyson was the chief poet, and Ruskin the ethical educator. From the philosophic standpoint the works of both are immersed in the passing phases of their day, and they are on this account valueless, while on the literary side they are affected with a hot-house manner and a preciousness of style which make one long for a breath of fresh air.

Partly by their example, and partly from the writings of less famous mortals who, nevertheless, have exercised great popular influence, there has grown up a conventional, insincere, namby-pamby style of touching upon all questions of ethics or of morals; and high conduct and edifying teaching have been considered as inseparable from a certain manner of compromise and make-believe, intellectual limitation and moral cowardice, together with the cultivation of a sort of high-pitched hysteria.

To such moods of life the name "Spirituality" is sometimes applied, and custom then requires that every thinker

should bow down his head in reverence to such superior attributes.¹

There is much falsity hidden under these high-sounding names, and with falsity, of course, unwholesomeness. When any strain of spirituality is inconsistent with truth, or with the general ordering and balance of Nature, it marks not a high but a vicious tendency.

This point must be driven home determinedly, for the play of the forces of the cosmos is on our side.

Those who feel the need of sacrifice and long to have their intellectual and moral fibres tested and strained will, I assure them, find enough to content them in the simple assertion of truth.

¹ The Nobel Prize aims at rewarding writers of literature which gives evidence of spirituality. I am in accord if by spirituality be meant a high and splendid aspiration towards truth; but that is not the meaning usually attributed to the term.

CHAPTER VIII

THE CONTRIBUTION OF BIOLOGY

Preliminary Remarks

ARISTOTLE, though a great biologist, makes no especial play of biology in building his system of ethics. In modern times, however, many biologists talk as if an acquaintance with their particular science enabled a man forthwith to utter decisive opinions on ethics. It required the warning of Huxley, one of the greatest of all, to prevent the immediate application to human society of the morals observable among the beasts of the field. Here already we get a measure of the deficiencies in scientific method of such biologists, for in face of new and important factors they do not think it necessary to vary their solution.

Herbert Spencer's doctrine, even though found unacceptable, has not exhausted the possibilities of biology, nor even of a correct interpretation of evolution; but it is evident that we must proceed warily in this domain and seek for the grounds that give the professors the complete assurance of their wisdom. Biology has of recent years become regarded as a sort of sacred science, so much so that when an ethical teacher, a moralist, or a representative of religion hears that he is in the company of a biologist, he becomes respectful and circumspect, and speaks with extreme caution lest he should be definitely weighed in the scales and found wanting.

It is partly by chance, however, that this peculiar spiritual quality is ascribed to biology, or to its students. The conclusions of Darwin's "Origin of Species" were believed by a generation of clergymen to run counter to the teachings of the Bible, and Darwin himself and his book became the butt of their rage, their scorn, and their ridicule.

Darwin had not deliberately set out to destroy their faith; he had obeyed the promptings of his scientific curiosity

to find the solution of a century-old problem, and once launched upon that course he had small occasion to revert to the Bible. He directed his observation to nature, and in drawing his inferences from those observations, his mind was bathed not in an atmosphere of polemics, but in a mood of patient meditation.

When the conclusions were announced it was possible to verify the whole process which had led on his thought; and so it happened that Darwinism, championed by such doughty adherents as Huxley and Tyndall and Herbert Spencer, gained the day.

That victory produced a change of opinions which it would have been difficult to describe in terms of evolution, for new champions of religion opined, and again with wonderful unanimity, that Darwinism, so far from being antagonistic to the doctrine of Holy Writ, really constituted a new and irrefragable basis of faith.

During the contest, however, the minds of millions of believers all over the world had been terribly perturbed, and even after the discovery of the compatibility of this tract of science with faith the question was left unanswered as to what future ordeals might be in store from which faith was destined to rise victorious and unimpaired.

The watchful attitude therefore of the blessed with regard to biology, compact of awe as well as love, and interfused with the strong desire of propitiation, helped to endow this science with its divine attributes.¹

¹ At one time there existed a fear on the part of staid and conservative authorities lest the study of comparative anatomy should contaminate the minds of the young; and I remember the air of fortitude with which a popular preacher—note that when one introduces the word “popular” it raises at once the expectancy of defective reasoning—Joseph Cook announced that he was accustomed to gaze, unafraid, upon biological plates.

At an earlier period, in the days of Hugh Miller, a staunch champion of orthodoxy proudly declared that if the fossils were thought to weigh against his creed he would rather believe that each individual fossil had been placed in its site directly by the finger of God! “There’s fatness!” There was faith!

As a contrast, a succession of Popes for one hundred and fifty years kept the diagrams of the anatomist, Eustachius, locked up in the library of the Vatican, and so succeeded in retarding the progress of this branch of science for many generations.

It has been tacitly decided that there is no conflict between religion

The biologists accepted the situation with complacence, and occasionally emphasized their prerogatives by ascending to remote conclusions on tenuous arguments unsupported by facts.

Biology is not the only science to which has been ascribed some sacred quality. The Copernican astronomy which announced inconceivable heresies, the mechanics of Galileo which criticized the scholastic system so sharply, both partook, though in sinister guise, of that special quality. Later when the mathematics of Newton promised so much, the world thought that it had at last found the key to the inner secrets. Maupertuis believed that he had demonstrated God by his principle of Least Action, until it was shown by more expert mathematicians that what he had done was to misinterpret his formulæ.¹ Daniel Bernoulli wrote to Euler on hearing that he was discussing metaphysics and politics to admonish him to concentrate on "divine things," to wit, his problems in the differential calculus. Later Schelling cried "All is Electricity!" Then came biology; then as the next great theme, radio-activity, and now relativity. And each of those chief figures in the pageant of fashion, for that is what it amounts to, has been attended by a train of lesser cults, all brilliant, but many of dubious origin—mesmerism, hypnotism, spiritualism, vitalism, creative evolution, psycho-analysis, telepathy.

The reason why these fashions have prevailed is that and science; certainly they are entirely reconcilable on those points where they are both true.

Nowadays, however, the daring man of faith is not he who dissects an earth-worm or studies the development of an ovum, holding his creed in a domain apart, but he who deliberately studies the whole trend and meaning of veritable scientific explanations of the cosmos and invites the question: Is my creed, as I have understood it, in accordance with the conclusions here found? Such a man is heroic—and lonely.

¹ One of the most delicate little side studies of philosophy is this question of Least Action, for Maupertuis was defended by Frederick the Great, not with logic but with royal prerogative, and attacked by Voltaire with a rare compound of common sense, wit, and courage. Euler, the greatest mathematician of his time, lent his reputation to the cause of error, and Count d'Arcy, in a brief little mathematical study, jousted Maupertuis out of his philosophic saddle. I have rested a moment here, for the story is continually being repeated—the appeal to great names to support shams and to degrade science and truth.

when a discovery, or the presentation of a new principle, is offered, it bulks large in the popular imagination, for its scope is undetermined and it promises us revelations of the Unknown. Then with time it sinks into the general perspective where its bulk is small in comparison with what we had learnt of the cosmos already, and finally it becomes displaced in esteem by a new favourite.

Now nothing is further from my intention than to belittle the contribution of science to our judgment in our ethics, but I demand that it shall be science. I have already cut as with the axe of a woodman into the roots of the error of false systems, and for mere authority, even in biology, I have no respect; but standing in face of nature I feel another mood invading me, that of wonder and solicitude; I long to pierce to the secrets, but I feel how warily we must proceed, and how severely we must test; and withal I have the settled conviction that the need of founding truly and proceeding by rigorous argument is so great that better than to evolve a cycle of dazzling philosophies is it to build even one sure step from which another sincere thinker coming later may still mount.

The Special Significance of Biology

Biology has earned its right to be heard in questions of ethics, if only for the value of the phrases which have formed the battleground of ideas: "Evolution," "struggle for life," "survival of the fittest."

The struggle for life is evident around us every day, and it speaks volumes for the mental attitude that prevailed for ages amongst philosophers that its importance should not have been noticed until in our time.¹

The significance of the struggle for life was not seen,

¹ Here again we must make reference to the wonderful Greeks of old. A few fragments have come down to us of Empedocles, and the reading of these has convinced me that the ancient philosopher had grasped the principle of natural selection.

The teachings of Empedocles have been transmitted by writers who failed to grasp their import, and we know them only in fragmentary form. It seems to me very improbable, however, that a thinker who had enunciated so much as has been preserved should not have had a clear view of the principle.

Why then did not this principle make the same stir among the

at any rate in regard to ethics, until the suggestion arose of the "survival of the fittest."

This phrase brought fortune. For a couple of generations it seemed to thinkers not only to have solved the question of the variety of species, but also to have given to evolution its peculiar certainty of progress. But the more we look into the matter the more precarious seems this claim. In remote ages before man was born, gigantic creatures ruled the earth—the dinosaur, megatherium, mastodon. They have disappeared. Yes, the reply comes, but these were only the biggest or strongest, not the fittest.

Then with the development of man we find the Greeks of the age of Pericles giving a lustre to our human race of which we still feel the glory; they disappeared, and for a thousand years only a few men, and these amongst the least esteemed, had intelligence enough to keep the records they had left. Yes, the reply comes, the Greeks had intelligence, and a high sense of beauty and of art, but they were not the fittest for the conditions of life that became imposed on Europe.

In our day we hear of the "rapid multiplication of the unfit," and the faculty of working in a sweated den or sleeping five in a bed may in some cases be more serviceable than genius. Yes, once more we have the reply, but the question is not who are brightest and best, but who are fittest to endure the stress of hard conditions.

Finally, then, we ask, what is the definition of "fittest" in this formula?—and we find that there is no other test offered than that of survival. We discover then at length

Greek thinkers as with us? The reason is two-fold. In the first place there did not exist in ancient Greece a body of religious doctrine which was contradicted by this theory.

Secondly, the Greeks were, with few exceptions, little inclined to research, and they were inexpert in experiment. The importance of the Darwinian theory is in part due to the great amount of research of which it is the origin. What Darwin added to Empedocles was the work of verifying this principle in numbers of actual instances and tracing out some of the consequences. The fact that Darwin received the suggestion from the writings of Malthus on the question of over-population verifies what we have already said that any true principle of Nature, once discovered, will be found to have an unlimited number of applications.

that this principle assures us of the survival—of those who survive.

The doctrine of evolution is not entirely bound up with such considerations, but before entering more definitely upon that discussion, I wish to examine, in a preliminary way, the credentials of certain notable naturalists who pronounce upon ethics.

Thus in *L'Année Psychologique* of a few years ago I recollect that Binet took Haeckel to task on the ground that in his attacks upon orthodoxy he often introduced observations taken from biological science which had nothing to do with the question in hand. Then without entering the lists on behalf of orthodoxy, I examined the arguments of Haeckel in his treatise on Anthropogeny, and I confess that I was unable either to follow his reasoning or to understand finally what he meant by his Monism.

Certainly I had no bias in this case; I was rather inclined to be sympathetic, and I asked only to be instructed. I was impressed by the wealth of Haeckel's knowledge, but disconcerted by the loose character of his reasoning.

To be impartial I applied the same tests to orthodox works in this country, as, for example, the "Mechanism, Life and Personality" of J. S. Haldane, and "The Present Relations of Science and Religion," by T. G. Bonney. I was sincerely grieved to find to how small a degree technical science suffices to ensure clear reasoning in matters that touch on psychology or religion.

The examples are being continually repeated. A man who has received a bias, either towards or away from orthodoxy, applies himself to some science, whether biology or geology, or even logic. He becomes learned and renowned; he is authoritative. He preaches from a chair or a pulpit. If he be a natural historian of some sort he pleases us, even delights and fascinates us, by the wondrous happenings of organic nature. Then in a solemn tone, and without indicating even the nexus between his science and his conclusions, he gives forth the ideas which he has imbibed at the knees of his nurse.

It is experiences of this kind that have made me demand from the biologist clear proofs of his conclusions. From feeding tadpoles on the thyroid gland, or gazing at a

Graafian follicle under the microscope, to the discussion of the Immortality of the Soul is a leap. That leap may possibly be taken, but I wish to see it in progress.

I have examined elsewhere the claims of the physiologists, and in particular the specialists of the brain, to speak with authority on questions of psychology.¹ In that case there was no difficulty in refusing to accept mere assertions, for the great neurologists contradicted each other abundantly. We shall find a similar state of affairs in biology.²

The very term evolution, round which a battle has been raging so long, has seldom been defined, apart from Herbert Spencer's enunciation, and in the eighteenth century the meaning attached to the term was different from that which is now generally accepted. At that epoch it corresponded to the notion of preformation and successive delivery of organisms already determined. Nowadays it signifies something in the nature of successive transformations. The change of view was brought about by two theories generally regarded as mutually opposed, though this is not necessarily the case—that of Lamarck and that of Darwin.

Lamarck and Darwin

Lamarck's theory of the change of the organism in the process of adaptation to the environment dates from 1809; that of Darwin's natural selection from 1859. Darwin's disciples, having triumphed over their gainsayers, carried their victory too far, making claims for the principle of

¹ Cf. "Psychology: A New System" and the forthcoming "Principles of Psychology."

² The biologists are rather resentful of obtrusion on their domain, but it is possible to waive that point, for it is in the domain of psychology, of reason, that I find it particularly necessary to test them. A biologist spends much time, let us say, in the delicate work of artificially fecundating the ovum of a sea-urchin or in studying mutations in plants. This work is technical, and the whole effort is highly laudable.

But then the biologist, having ascertained certain facts, proceeds to draw inferences, and by dint of these inferences he reaches important conclusions. We are entitled to examine his argument either by testing his conclusions by facts or by observing whether the reasoning is consecutive and cogent in its own form. Whether he aims at stating a generalization to cover a large number of separate observations, or whether, for the basis of further observations, he proceeds to discover a principle, the biologist comes under the sway of psychology. It is here that he is often found wanting.

natural selection beyond its due, and, apart from the theories of Weismann, serious objections began to arise from within the ranks of the Darwinists themselves. At present the set of opinion is against the whole doctrine of evolution as it appeared to Darwin himself, and the forward lights are affirming positions not greatly different from those of the eighteenth century.

Let us glance at the mode of argument. All the insects in the desert are grey. . . . I can remember the delight with which as a boy I became acquainted with this fact, charmingly expounded by a Darwinist, who made it clear that the gaudy and spectacular specimens would, by being conspicuous, fall victims the more readily to their enemies. It seemed to me as if one of the old Olympic gods, the sage Saturn, for example, had come down to earth to expound to me the wonder of things and to make them simple and familiar.

Then I was prepared to learn that all the animals in the Arctic zone were white, and a deep contentment reigned. But then, later, I came across another magnificent generalization which delighted me, that of Theodore Schwann, that all organic changes were due to the presence of minute living organisms. This theory, wonderfully fertile, which Schwann, following Spallanzani, had created on the basis of very simple experiments, is not quite true, for it now appears that the ferment required is not the living organism itself, but one of its products.

If then the colour of the hair of an animal changed in the Arctic zone to white, that result was due to the action of micro-organisms. We can get over a small difficulty here, as by supposing that the germs are habitually present and that they only require certain conditions to bring them into the required activity. The conditions do not depend on the prevailing whiteness as a colour; they depend on the cold. But if they depend on the cold, then the result is inevitable when all the conditions are present, and there is no need to invoke natural selection at all.

The theory of natural selection is less simple than might be thought from the example just mentioned, for it involves the supposition of all sorts of variations, so as to arrange for the survival of the required kind which has hitherto not

been present. How do these variations arise? Darwin does not even offer an hypothesis here; he accepts the fact. By this process the problem is simply pushed back a step. But note the further difficulty that the variation is not even assumed to be sudden and complete. Now a white fox in the Arctic is doubtless less conspicuous than a reddish fox, but a reddish fox wearing the white plume of variation would be the most conspicuous of all. Yet he would require to look forward to many generations, perhaps centuries, before chance variations would completely blanch his robe, the more especially as the variations might carry him back to his original, and, by comparison, safe colour.¹

Moreover, the tendency is not for the variations to continue steadily in one direction. I remember a striking image which the biologist Yves Delage, celebrated for his work on parthenogenesis, once offered to me. He said that the variation impulse might be likened to a ball suspended by innumerable little elastic strings; it is easy to pull the ball in any direction, but the more the pull is increased, the more the resistance grows, until the ball is at length pulled back to its original position.

These are difficulties in the way of the Darwinist, but some of the disciples overcame them by the dexterous use of false reasoning. It is quite common for such arguments to be offered in good faith.

I find a striking instance of this where two brilliant men of science arrive at the explanation of the development of the colour sense by two unconnected theories. Grant Allen, in "The Colour Sense, Its Origin and Development," puts forward the theory that man has inherited his taste for bright colours from his frugivorous ancestors, who acquired it by the exercise of their sense of vision upon bright-coloured foodstuffs. We may argue quite cunningly on these lines if we assume that all the unknown or uncertain factors operate in favour of the theory. But F. Soddy, in "Matter and Energy," points out that the greatest sensitiveness to colour corresponds to those parts of the spectrum where the light energy is highest.

¹ A French savant, A. Guilliermond, has studied this mode of formation of pigment in the carrot, and the results do not support the theory of natural selection in such cases.

It would be possible to build up a theory of the evolution of colour-vision on this basis, but the considerants are quite different from those previously invoked.

Both theories cannot be correct; but it is not impossible, on this showing alone, that neither is.

A still more difficult puzzle for natural selection is that of the concordance of two lines of development of separate structures in order to produce a result of advantage to the organism.

Bell shows how in the production of the voice various functions must have been developed separately, and then accorded. Still more remarkably, Sir Ray Lankester has traced out two diverse modes of development of the organ of vision which have terminated in similar results.¹

Bergson, who writes interestingly when kept in hand by the discipline of positive science, has pointed out the concordance necessary of the lines of development in the eye; one by which the outer structure is prepared to allow the rays of light to pass in the appropriate way, the other by which a process from the central nervous system is adapted to receive the impressions conveyed.²

¹ The development of vision in molluscs and vertebrates diverged long before the complete evolution of the eye, yet the processes, though by adaptation of different structures, culminated in similar results.

² This kind of co-ordination has been in operation not only in regard to what we may call the main lines of development in the case cited, but also in regard to successive modifications. Sir Frederick Mott notes in felidæ a specialization of the fore limbs for prehension of their prey which would be less effective for their purpose without stereoscopic vision. (*Cf.* "The Progressive Evolution of the Structure and Functions of the Visual Cortex in Mammalia"—"Archives of Neurology.")

In the case of the chameleon the famous Spanish histologist, Ramon y Cajal, has found that in the central area of the retina the cones become more delicate, and each cone is connected with a separate tripolar cell, and this again with a separate ganglia cell giving off an optic fibre. It has been pointed out, as by Dr. Wilfrid Harris, that this development is correlated with a special motor adaptation which is of service in seizing prey. Monsieur Rochin-Duvigneaud, summarizing the results of Ramon y Cajal's researches, remarked on the inadequacy of Darwinism to explain them.

On the other hand, Sir F. Mott and Professor Sherrington met with no difficulty in solving the problem on Darwinian lines. The reason of these discrepancies is to be found, as already observed, in the want of definition of the principle itself. It is evident, however, that no proof is forthcoming of the production of these results by the

We have now reached a point where we are far from the authoritative biologist, who accepts evolution as the shibboleth of a dogma, and without proving the principle of natural selection, proceeds on that base to lay down the law in ethics.

I propose, therefore, to offer a rapid review of the successive steps of the principle, and to inquire what service it has rendered and may still render to ethics, and to see whether, breaking away a little from the groove into which discussions have been confined, we may get a glimpse of guiding lights :

Evolution meant in the eighteenth century a process of successive development of organisms by virtue of their own characteristics.

Speaking of these as internal factors, and the environment as constituting external factors, the first step in progress was to attach due weight to the working of these external factors.

Lamarck, in 1809, showed how the organism became

operation of natural selection, and still less is there any explanation of the mode in which "variation" offers to natural selection in so complete and appropriate a manner the required choices at the right times. Remembering that at each stage until the final co-ordination any failure to continue the process correctly would leave the organism at a positive disadvantage, we will see the absurdity of supposing that in all the individual organisms the change had been wrought out by mere chance. Even on the basis of mathematical probability, the odds would be infinity to unity.

If an intelligent visitor from Mars saw two tunnels driven through the base of Mont Cenis so as to meet, thus allowing the construction of a required railway line, he might argue that of all the tunnels which blind chance had perforated in mountains, we mortals selected that which came in handy for connecting France and Italy; but even the insistence on "natural selection" and the wide scope given to variation does not offer an explanation. On the contrary, it brings us face to face with a principle better established than natural selection, and that is the principle of determinism, or the principle of cause and effect which eliminates chance.

As showing the perplexity of mind of Darwinists, Professor (now Sir, and Ambassador at Washington) A. C. Geddes said in 1912, speaking of certain theories of bone formation advanced by Ranvier and Müller, and subsequently elaborated by Retterer and Sir W. Macewen : "If this idea of the osteoblast ultimately be proved correct it will be necessary for us to revise almost our whole conception of the causes of organic evolution, of all histories and all lineages."

This revision has since been in active progress, and some of the most progressive of the workers have emitted theories that recall those of the pre-Darwin days.

adapted to the environment by the combined play of use and disuse respectively of various functions. He over-stated his case, and particularly he ascribed too rapid an action to these influences. He was wrong in believing that acquired faculties were in large measure transmitted hereditarily.

Darwin, fifty years later, found in natural selection another mode of securing variation. Alfred Russel Wallace had arrived at similar conclusions by another path of reasoning.

Darwin's views were rejected with violence. Bishop Wilberforce said that his doctrine ran contrary to the word of God. After a furious battle the followers of Darwin, with Huxley at their head, triumphed, but the very ardour of the strife carried their victory too far.

In describing the process of natural selection, they argued with too much facility and assumed on their side all the unknown or unproved factors.

Herbert Spencer had approached the question from the philosophic standpoint, and it is to him that we owe the phrase "Survival of the fittest," and the first attempt to give a clear enunciation in scientific terms of the laws of evolution. We have seen, however, that both this enunciation and the sacramental phrase regarding the fittest tend to elude us when we endeavour to make use of them in development.

Herbert Spencer did not accept the principle of natural selection; for the mode of evolution he relied on the operations pointed out by Lamarck.

Weismann

The next important figure on the scene is that of Weismann (born 1834), the German biologist who contended that acquired faculties were not transmitted. This doctrine, if admitted, seemed to give a fatal blow not only to Lamarck but to Darwin.

Herbert Spencer entered into the lists against Weismann, but his arguments did not touch the essential. Weismann spoke with a great fund of observation at his back, and it is undoubted that he rendered a real service to science, if only by cutting away the exuberance of loose arguments of the Lamarckians and the Darwinists.

Weismann's grounds were technical. He pointed out the difference of the somatic tissues of the body and the germ cells, and he offered proofs for the assertion that they had an independent development. Weismann thus brought us back to the eighteenth century position, and, tracing out the consequences of his theory, he elaborated a theory of development.¹

Weismann had no right to assert that no mechanism existed for the reciprocal influence of the somatic and genetic tissues; all he was justified in saying was that he had not detected any such mechanism. But the removal of the generative organism in a young male influences profoundly the whole development of its somatic tissues, and this patent fact should have warned Weismann that some means of intercommunication must exist, and that the reaction should correspond. In more recent years our acquaintance with the mechanism has become more familiar, as, for example, when we recognize the influence of the ductless glands.

It was evident, however, that circumspection was needed in tracing out the consequences of the principles of Lamarck and Darwin.²

Two biologists put forward in Darwin's day suggestions that would appear of value, although not much noticed at the time. Nägeli and also Kölliker thought that the variations demanded by evolution might be produced by some internal principle. This would lessen the rôle of natural selection, although the two principles are not mutually exclusive.

¹ This theory of Weismann was too complicated, and therefore liable to suspicion. Just as the change from the Ptolemaic system to that of Copernicus was from complexity to simplicity, so it will be found often, if not invariably, in interpreting Nature.

² That the organism does become adapted by use to its environment is proved in countless instances. It is sufficient to cite the development of the muscles of the arm of the blacksmith. That acquired faculties may be hereditary is also proved, for the size of the child at birth has been influenced by the size of the uterus and by the pelvic arrangements in general; but these depend on conditions of growth that are variable according to the variation of the environment, considered in its totality.

But, on the other hand, a hunch-backed man or a one-armed man does not produce hunch-backed or one-armed children.

It should be recalled here what was said previously about the

Then Haeckel made a great stir by offering decisive proof of the course of evolution by finding that the steps of the progressive development are mirrored in the development of the foetus itself. Hence he declared that evolution was the sole explanation of comparative anatomy, embryogeny, and of natural history generally. Ontogeny offers the repetition of phylogeny, he said. Haeckel was accustomed to jump to conclusions without sufficient proof, and modern biologists regard his doctrine here as at least precarious.

Then came the era when questions were asked and experiments instituted as to the mode of reproduction of these variations on which natural selection depended. A Danish naturalist, Johannsen, made a series of observations which, represented in the form of graphic curves, showed that the species was stable, but that on both sides of a certain mean curve fluctuations occurred, but that according to the types within the species the characteristics even of these fluctuations showed regularity.

De Vries

A French naturalist, Jordan, and later the famous Dutch botanist, Hugo de Vries, carried on studies of a similar character, and, particularly in one species—*Oenothera lamarckiana*—de Vries observed variations brusque and considerable beyond the fluctuations noted by Johannsen. These he called mutations. These researches dated from about the beginning of the century, and at last evolutionists thought that the way had been cleared.

Mendel

In the meantime an Austrian monk, Gregor Mendel, about 1860, had instituted experiments on peas in order to test, in simple cases, the laws of heredity. Mendel's work

perspective of science and the relatively large importance of some new discovery. Something analogous takes place in the organic world with regard to acquired faculties. They are important to the individual, but in regard to heredity they appear as factors which are extremely small when compared with the vast accumulation of experience, efforts and developments, which have produced the individual and given stability to the type. It is like letting a drop of water fall into a pond. The drop has its influence, and it causes some immediate disturbance in its neighbourhood, but when it sinks into the whole volume of the water it may escape notice altogether.

was of extraordinary value, but it hardly attracted attention in his lifetime. Amongst distinguished biologists he could find only one reader, and his judgment was rather adverse. Mendel died disconsolate, and it was found that he had destroyed, or allowed to perish, researches on bees destined to throw light on the problem. The essential of Mendel's results is that there are certain components of the organism which become transmitted hereditarily as a whole; and that if these be conceived to be represented by particles of the generative cells, then in heredity we can compose new combinations, somewhat as chemical compounds are formed.

Mendel was "discovered" by Professor W. Bateson, of Cambridge, or at least it was he who recognized the importance of the Mendelian theory, and suggested a series of new efforts to test and develop it. Hence there has arisen great activity in this direction, particularly in England, France, and the United States.

One result was rather to revise the principle of mutations, for these are due to the effect of hybridization as foreseen on Mendelian lines.

The general tendency of the work of Daniele Rosa in Italy, of Bateson and his pupils, of Lotoy in France, and of East and Castle in the United States, is to reinforce the impression of the stability of species, and thus to offer a bar to the development of the animal world according to the evolutionist conception.

M. Caullery, of the University of Paris, who unites great biological knowledge with a philosophic mind, suggests that we cannot decide from a brief experience of the conditions of our time that there may not have been geological epochs when under other conditions "great stimulus was given to variation."

Meanwhile the phenomena of degeneration and of inversion of evolution had been studied by Dollo, Demoor and Douvillé, and the effect of this work was to show the weakness, on account of its want of clear definition, of the doctrine of evolution as a developmental principle.

Le Dantec in 1908 began a series of destructive criticisms of the doctrine of evolution. Sir Ray Lankester is the only eminent biologist who maintains Darwin's theory intact. Perrier occupied a position between these extremes.

The Organic Formula

After this examination the peculiarly sacred quality of biology in regard to ethics appears to diminish, although perhaps the doctrine gains in oracular character, for according to the desire or the authority of the questioner it gives forth different responses.

The rôle of natural selection is always important, but it is not the chief factor in determining either individual development or species.

What is it that underlies this process?

The answer: Chance, is really not a scientific answer at all, for one would still inquire what produced that particular kind of chance.

In the process of weaving, for example, the weft that comes between the threads of the warp is "selected." But what brought it between those threads?—Chance! The absurdity of the reply would leap to the eyes.

Certainly we become baffled in our explanations, but that does not prove that there are no explanations. It is only very recently in the history of mankind that the explanation has been given to us of occurrences which had puzzled the mind of man for ages. Further, it is true that when a certain explanation that has held the field becomes dethroned from the pride of place, the process is often not one of revolution, but of a better definition and adjustment of function. The mistake that has been made is to attach too much relative importance to the new theory which becomes adopted.

Another remark, not without importance, is that it is not necessarily the man of technique, the specialist, who is best qualified to offer a general explanation or theory. What has been seen in the case of natural selection itself? The great facts of biology are patent to us all, and the minutiae of the laboratory occupy a smaller proportion of the whole domain than what is known to the well-educated and observant man. Lamarck depended mainly on such easily accessible evidence, and when a specialist, as Weismann, has sought to controvert the current theory, he has been brought to erroneous conceptions by virtue of his specialism. That being so, it is laudable for a psychologist to speculate on natural selection, if only he bring his conceptions to the test.

Some years ago, in conversation with a famous Darwinist, I suggested that the solution of the difficulty would be found in the conception of a "biological formula," or organic formula, and the meaning of this I shall now explain.

I will link it on to a speculation of Bateson in his presidential address to the British Association in Australia. He thought that evolution could be regarded as the progressive development of an initial complexity, which contained of itself, from the beginning, all the scope, diversity and varieties offered by living creatures.

At first reading I thought that Bateson had given a more extended form to what I had spoken of as a "biological formula," but I find that that is not the case, and the difference is vital.

I obtained the notion of a biological formula from the study of mathematical figures. A formula is certainly not a figure, but given an appropriate formula one may successively work out the whole figure as a sort of development of what is expressed in principle already in the formula.

If from mathematics we come to mechanics we find that given certain initial data—the components of a system, the mutual relation of parts, the velocity of projection, and so forth—we can determine the movements of the system. Here we introduce something apart from the figure; we must take into account the effect of gravitation and the resistance of the air.

What is analogous to this in the biological world appears to me what Bateson has missed.

Given a living system—an organic formula—its actions are determined in part by its component and the internal forces; but we must take into account also its action on the external world, and the consequent reaction of that world upon itself. Thus the internal forces and dispositions of the organism become changed, and those again react in a new manner upon the environment; and this play of mutual action and reaction is incessant and so bound up with the life of the organism that changes are necessarily progressive; although the changes may be of such a character as gradually to have incorporated into the organisms new components, or possibly to have changed it so that none of the original constitution be left at all.

This conception is different from that of the eighteenth-century doctrine of evolution or from Bateson's, and it introduced factors which, once admitted, are seen to be essential.¹

Closely bound up with this is another observation.

The tendency in speaking of transformism, whether by Lamarck's or Darwin's principles, is to regard the environment as the sum of given external forces, and to conceive of these moulding the organism in adaptation. That is not a true conception. To express the matter by a metaphor the environment is not to be typified by a drill-sergeant directing the steps of the organism; it partakes also of the character of a commissariat officer under the orders of the organism.

The environment is modified by the organism, which exercises upon its components also a natural selection. Certainly the total force of external nature cannot be changed, but that which impinges on the organism, and especially that which is admitted to reaction upon the vital functions of the organism, can be changed. Civilized man can change the environment by building himself a dwelling-house and by laying up stores of provisions. But also, to give simple examples, the animal that closes its mouth against the entrance of certain foods, or the animal that escapes from a noxious gas, or for other reasons seeks a pure and rarefied air in the heights, changes its environments. A child which has been born blind and which afterwards acquires vision, changes its environment, and finds its brain, and hence its whole mental and physical constitution, modified by the new set of circumstances brought in by that changed environment.

Galen of old said: "Take three eggs, one of an eagle, another of a goose, and a third of a viper. . . . The eagle will soar to the higher regions of the air, the goose will betake itself to the marshy pool, and the viper will bury itself in the ground."

Here, evidently, the old and too rigid conception of modification by the environment is not sufficient; and here it will be evident that something new has been imported by the conception of the "organic formula," which in its elucida-

¹ Since writing the above I have read "L'Evolution de l'Energie Psychique" of Danysz, and therein, though expressed in another manner, I have found the nearest approach to what I have indicated above.

tion produces or affords the means of growth of the organism in constant contact with the environment, which it modifies or adapts, and so by successive progress produces the full development of that organism.

I will return at a later stage to this suggestion and link it to that of Purpose.¹

False Ethical Deductions from Biological Data

The study of biology is important in itself, not only in respect of opening an avenue to the study of a side of nature, of which we should endeavour to attain a clear view through the medium of all the sciences; the interest of biology is enhanced also by the manner in which it impinges on controversial subjects round which have been woven the affections, the prejudices, and to some extent the institutions of men.

But biology is also of importance from the fact that various corollaries which have been falsely derived from its teachings have played a part in investing bad governments and wicked systems with an air of righteousness derived from the authority of science.

Such phrases as the "struggle for life," the "survival of the fittest," wrongly interpreted and mistakenly applied, have led men, not deficient in education, to the worship of brute force, to the admiration of reactionary forms of government, and to the cult of the so-called "strong man," with here an additional touch, derived from Carlyle's sentimentality, of the "strong, silent man."

The mind of the reader will at once fly to the great European War for examples, and also for the condemnation of that conception of humanity that makes strength reside not in great intellect serving noble aspirations, but in a stockish disregard for every interest except that of self, and a brutal overbearing of all that might stand in the way of a personal or national aggrandizement exemplified in the show of material things.

There is no warrant in nature for the cult of this type

¹ The suggestion of the organic formula and the purposive selection of the desired components of the environment appeared in a brochure "Purpose and Evolution" (1913), originally read to the Aristotelian Society.

of humanity, which, indeed, has been foisted upon us contrary both to our instincts and our reason by certain types of literary neurotics. The type is found not only in Germany, with its Treitschke or Bernhardi, but in equal representation in most of the civilized countries of to-day.

Carlyle exhibited it in full development in his "Frederick the Great," where amidst a servile handling of the petty doings and the gossip of the Court he makes a hero of that glorified sergeant-major who was Frederick's father.

In this country, too, we have paid for the worship of the "strong, silent man" by the blood of hundreds of thousands of brave soldiers, and the squandering of enormous treasures of energy as well as gold.

With the type usually held up to admiration by our decadent writers, strength, at least in its higher aspect, is not in evidence. As soon as we rise above the state of affairs where mere brutal force is sufficient to direct a community, and that is only in a very rudimentary condition even of savagery, we find that the faculties that best serve to command are derived from intelligence and will-power. Will-power is not in itself a sort of grim entity which an individual possesses as he possesses a sovereign or a sword; it is a quality that varies even with the individual according to circumstances, and it is capable of great development.

Knowledge and intelligence illuminating the way ahead are factors which give assurance to the will. The further we carry our analysis the more shall we be convinced that even for the exercise of authority and that "strength," for which weak natures so insistently cry, there is need of these subtle and delicate essences that tell rather of the spiritual nature of men; thought, reflection, delicate speculation, imagination, and all that is implied in the training of the higher faculties of the mind.

Certainly, I grant, that in our present experience, and throughout the course of history, we often find men in high places, men whose will can do much for the happiness but generally for the unhappiness of humanity, men who have been deficient both in intellect and ideal; but these are only instances among the innumerable records of human error, and it is part of the fruit of a good ethical system that the

moral wrongness, as well as the material danger of such regimes, should be clearly exposed.

Even in our immediate familiar human affairs, if we examine the motives that instil heroism into the mind and render men capable of deeds of glory, we find the inner spring not in brutal arrogance nor bestial appetite, but in tender recollections, the first affections of the human being that cling round the figures of father and mother and intertwine with the appealing associations of home.

The songs that endure and that form bonds of endearing recollections, hopes, and resources, are those of gentle thoughts and wistful yearnings. Even with the ancients, Homer, the old blind poet, who paints a series of lively pictures where even physical strength told heavily in the triumph of his heroes—seeks the stimulus, the lure, the dazzling ideal, not in the forms of brutal force but in the witching beauty of a woman.

I cease this line of argument for the moment. The allusion has indeed been made only incidentally on account of the magnitude of the disasters and the follies which have followed the style of philosophizing derived not from the principles of evolution, but from a misinterpretation of Darwin's phrases.

Later, in another form of development, we shall find the questions arise that touch on the ideals set up before men's eyes, and that strange far-off intimation of order in the world and a goal which we may cover by the word : Purpose.

CHAPTER IX

ETHICS AS A SCIENCE

IN the whole history of Ethics we find few attempts at a veritable scientific system, and those few are all faulty. Finally, in an excellent little work, "*De la Méthode dans les Sciences*," M. L. Lévy-Bruhl, who deals with the subject of "Morale," raises a finer issue. He advises the abandonment of theoretical ethics as generally conceived. His remarks here are interesting, and therefore I give a brief indication of his views, so as afterwards to render my own intention more precise.

M. Lévy-Bruhl says that "moral facts" may be regarded from the outside, objectively, and treated on the analogy of other sciences which deal with physical phenomena. On the other hand, he says, as they become manifested subjectively, in the conscience, under the forms of duties, remorse, sentiments of merit or demerit, blame, praise, etc., they appear in quite other characters.

Hitherto it has been usual to treat of them in this guise, and the other conception, of a field of objective studies, runs counter to our habitual manner of thought.

The distinction is brought out into clearer relief when we reflect that in other sciences the separation is easy between theoretical studies and practical applications. For example, the anatomist or the physiologist studies certain facts and relations simply to ascertain their manner of being; but to institute muscular exercises, or to modify the condition of supplying nutriment to the body, would be easily seen to come into another order of things. In the domain of ethics, however, the facts are taken as given, and the whole attention is devoted to the direction of actions according to the circumstances. It requires special attention and long reflection to conceive that the proper object of study is the domain itself of customs and laws.

M. Lévy-Bruhl replies to those who say that the distinction is already well founded between theory and practice in ethics, the theory dealing with the principles of conduct, and the practice dealing with the application of these principles to certain cases.

But this distinction does not descend so deeply as he demands. He examines the nature of the theory of ethics, and he finds that it deals only with problems having immediate relation to action. This might be summed up by the task of obtaining what Lotze called "Judgments of values."

That, however, does not correspond to the theories of other sciences, and the difference is particularly shown in the fact that the theory of ethics tends to be "legislative." Wundt, the famous German psychologist, proposed on this account to place ethics in the category of "normative sciences." The phrase is meant to imply the legislative character to which we have referred.

M. Lévy-Bruhl questions whether one can consistently speak of normative sciences, if the meaning of science be the study of phenomena or moral incidents. Certainly in the exact sciences there is a disadvantage in confusing the applications which might arise from the principles of the science and the theoretical establishment of these principles. For example, the theoretical science of mechanics has placed us in possession of certain laws which explain the manner of flight of projectiles; in the practical application one may make use of this knowledge in order to devise a gun destined to carry a shell a certain distance, and one could calculate amongst other facts the angle of elevation necessary for the effective firing of the shot.

In other sciences where the purely scientific basis has taken longer to establish, as in medicine, the theory and the practice may have been less distinct, but as our command of the scientific part becomes greater, the distinctive line also becomes more apparent.

But M. Lévy-Bruhl observes that this is not the manner in which teachers of ethics represent their subject; they make it a normative science on its theoretical side, "legislative in its quality as science." He rejects this claim, and says that when ethics seeks in this fashion to be normative it ceases to be a theoretic science.

The French philosopher affirms, therefore, that theoretical morals and practical morals differ only in the degree of abstraction, of generality, and sytematization. But while the practical morality is "homogeneous," and concerns itself with concrete questions, the theoretical morality has introduced a number of factors of diverse origin more or less associated with what is properly moral. Such factors are metaphysical considerations on the origin and destiny of man, psychological researches into the nature and relative force of natural inclinations, juridical conceptions regarding relative rights, and so forth.

M. Lévy-Bruhl observes, correctly I think, that the elements just cited, while lending to ethics the aspect of a scientific theory, really only give the appearance of science. There is no real connexion between principle and application, but a kind of relation very complex and obscure which cannot itself be explained without the help of a special analysis.

He concludes, therefore, that there does not exist a theoretical science of ethics in the strict sense, but he affirms that a theoretical science is necessary, and that the destruction of the usual conception of a normative science aids the proper view. The proper study is found in the domain of moral laws, obligations, rights, and in general the "content" of the conscience; these should be considered as a field of facts which should be investigated in the same spirit and by the same method as other social facts.

M. Lévy-Bruhl points out the objections that arise to this view of an objective character of moral facts, such objections being related in part to the old metaphysical disputes about free will and the like, but he observes that the more our knowledge increases the wider becomes our conception of "nature."

Proceeding with his theme, the author brings up another objection, viz. that while in physical nature the laws remain constant, independent of man's existence, in the moral world the facts themselves—manners, customs, religions, languages, arts—are the product of his activity. He replies that the course of development of other sciences, even mechanical sciences, encourages us to take the view of moral facts as offering problems to be considered objectively,

and that we must accustom ourselves so to regard the question.

M. Lévy-Bruhl would therefore restrict the science of ethics to the consideration of the facts and the relations that bind them, so that the student should have no ulterior aim beyond the acquisition of this knowledge. Only after a certain time when the state of advancement of the science allows it should we formulate the manner by which for certain purposes we can manipulate the phenomena.

He questions then why, these matters being fairly clear when thus exposed, the moral world has not been explored objectively in the same manner as the other domains of science, and he finds the answer in the powerful social interests which become affected by the promulgation of truth. The scientific attitude is a critical attitude; accordingly when science deals with religion it has the air, though not necessarily so, of being irreligious, and that is true also with regard to institutions and laws.

M. Lévy-Bruhl remarks that the moral facts exist already, no matter what may be the attitude of approval and disapproval of the philosopher, and he quotes, apparently with approval, the saying of Hegel in his "Doctrine of the Right," who, replying with irony to those who would reconstruct the State, explained that the State exists, the State is "given," and that therefore it is the duty of philosophers to study it as it stands. This saying he would apply to the moral world.

I have followed the arguments of M. Lévy-Bruhl in some detail because in part I adopt them, although, on the other hand, there are passages where I am in disaccord. It is unusual, but it is agreeable, to find an academic authority declaring that the great bulk of the speculations, references to psychological research or to religious beliefs, by which some support appears to be given, as if of a scientific discussion of ethics, really do not bear at all on the conclusions. In other places, and in other forms, I have insisted on this aspect of the matter in regard to the pretensions of the physiologists to speak, because of their special knowledge, with authority on psychology, or of the biologists to pontificate in matters of ethics. I do not admit their arguments when they are not cogent; conversely I do not refuse light from any science if there be established a sure nexus between

the data of the science and the conclusion offered in the application to ethics.

The mere statement, which does not in itself seem remarkable, that even in the discussion of ethics the arguments used should be valid, disposes of a great many moral structures; and since we have already examined on the psychological side the systems of Kant and Hegel, and have noted the manner of their exposition in ethics, these remarks apply with full force to them.

But apart from this we may join issue with Hegel even on the one ground on which M. Lévy-Bruhl cites him. Hegel twits the reformers pleasantly, although no one who has studied his writings would imagine wit to be his strong point. The State is given, he says; we must erect our ethical forms within that system.

Now it may have been difficult for Hegel, immersed in the full glory and surrounded by the power of the Hohenzollern regime, to project his mind forward a hundred years and foresee the irretrievable ruin of that edifice after the most disastrous war in history; but Hegel had only to reflect, however cursorily if with due freedom of mind, on the course of human events to become convinced that so far from the State being given, as a condition of nature, the State is subject to continual changes, and amongst the potent causes which operate in the changes will be found the influence of ethical principles. Hegel's own system does not fulfil the conditions that M. Lévy-Bruhl demands, for it is neither objective in its view, nor scientific in its manner of exposition, nor true in regard to its conclusions.

Yet even Hegel's ethics, by dint of furnishing some philosophic sanction to false procedure, have had considerable effect on the character of the State.

Examination of Lévy-Bruhl's Arguments

Let us now, however, look a little more closely into M. Lévy-Bruhl's arguments. He would separate ethical thought from the "legislative" side of its activities, and form a science which would concern itself with the investigation of all the origins and appearances of ethical sentiments, laws, customs, institutions. It may take centuries, he thinks, to place such a science on a proper basis so that from its well-

ascertained doctrine application might be made to practical life.

The analogy does not hold here with the development of the positive sciences, for though it may have been possible to have investigated the laws of physics and of chemistry without reference to practical applications, yet step by step the need of such applications has proved a spur to research. Certainly a higher stage of intellectuality is shown when the mind finds its chief reward and stimulus in the new visions of the world and its meaning which are opened up by some far-reaching discovery in the realm of science; but it makes one almost tremble to think of a race of superior beings charting down facts and laws and tracing out the consequences in complete unconcern of human sentiments and endeavours for a thousand years, and then offering the plan of reconstruction to whatever State may be "given" at the moment of the revelation.

This Buddhistic mode of contemplation would admirably suit the monarchical systems where the great thinkers would possess the double merit of adding lustre to the regime without embarrassing the Government.¹

My own conception of a thinker is rather that of the pioneer of a great movement who explores the paths ahead and, standing on an eminence, guides the caravan to new possessions; all these metaphors being regarded in a spiritual significance.

But again to come to terms with M. Lévy-Bruhl—the suggestion may lurk in the mind of the reader that here I am invoking that intangible sort of prejudice associated with our aspirations for spiritual content, and that to attain this I am rather evading the clear issue as to the truth of the matter. Nothing is further from my intention; I am prepared to follow principles based on truth whithersoever they may lead, and even though this may be to a desirable goal!

But now to test the reality of M. Lévy-Bruhl's scientific conceptions. He makes use of an analogy to explain his position.

"Just as in regard to almost the entire reality of things

¹ Hence in Prussia we find public memorials where Kant and Hegel are worn like decorations of the hem of the Hohenzollern garment.

we have two representations perfectly distinct, one sensile¹ and subjective, the other conceptual and objective; just as the world of sounds and colours is also the field of physical science; just as finally we are accustomed to represent as vibrations of ether that which we experience subjectively as heat and light, while neither of these representations excludes or remains in opposition to the other; so we can possess at the same time two representations of the reality in the moral world, one subjective, the other objective. We can, on the one side, undergo the action of the social reality in which we are plunged, and feel it becoming realized in our own conscience; and, on the other side, recognize in that reality conceived objectively those constant relations which constitute its laws."

Again, with the general intention here explained I am in accord, though I think there is a deep error in the manner of expressing it, and as our exposition rests on fine judgments we may be well advised to look into this matter closely.²

I say that it is not the case that in a certain mode of vibration of ether we have the objective representation of what subjectively we conceive as a certain colour; the two notions must be held distinct if we are to avoid confusion.

This may be made clear by regarding the whole process objectively. Imagine a form of vibration of the ether of over seven hundred thousand millions per second. This corresponds to the violet colour, but it is far from being an objective representation of that colour.

Before the colour sensation becomes a reality a vast number of processes, all of them complex and mysterious, must follow in due order. The vibrations of ether must impinge upon the retina and affect the delicate organs of the rods and cones, and produce some kind of disturbance which is transmitted through a long course of nerve substance, and which at length reaches certain ganglia of the

¹ The word here translated is "sensible," but there is in English no unambiguous term corresponding; I have therefore, as in "Principles of Psychology," used the word "sensile."

² This question forms the object of a searching scrutiny in "Principles of Psychology."

brain which again undergo some influences in association which are in turn transmitted to other nerve fibres so as to interest directly, or indirectly as by inhibition, the whole of the brain fibres. Under certain conditions a sensation of violet results, but without elaborating the marvellous intricacy of the processes involved in the nerves it will be seen that the vibrations of the ether form but one factor of a complex association of essentials.

If the vibrations of the ether had reached a photographic plate, we would have had, after a series of delicate chemical processes, a certain effect which again would serve to produce finally in our minds the associated sensations of a photograph.

If the vibrations came in contact with a mixture of hydrogen and chlorine under certain conditions, an explosion would be produced, and hydrochlorine acid would be formed.

These modes of analysis are certainly not idle; they define the rôle of the vibrations and enable us to understand certain subjective impressions that arise without the immediate stimulus of any vibrations at all. The sensation of colour is not represented either by the vibrations of ether, or by any part of the nervous excitation or disposition, or by the whole of these processes combined; it is something distinct, immediate and real in itself; all we can say is that a certain physical disposition, referring mainly to excitation of nerve-tissues in the brain, is the physical correlative of the sensation.

Now our sentiments, moral affections, sense of right and wrong, our desires and all that make the field of consideration in emotional states of mind, are real in themselves, and the causes that produce them are not their objective representations. Still less true is it to say of any one necessary antecedent that it is the objective representation of any sentiment. We must keep these distinctions clearly in mind.

It is quite legitimate, of course, and laudable to seek the whole system of the objective antecedents, or causes; but whereas in physical science we come at once to matters of extreme complexity so that it is impossible for us, in our present state of knowledge, to form anything but vague guesses as to the nature of the processes at work; so much the more difficult would it be in ethical science to trace out

from the foundation of our knowledge of the world the processes that produce moral sentiments.

Considerations of this kind show that the directions of M. Lévy-Bruhl are really counsels of perfection.¹

Yet it behoves us to place the science of ethics in its relation to other sciences. To help difficult conceptions by an illustration, it could be likened to the science of meteorology, which though somewhat ill-defined as a science in itself seizes upon the methods and assimilates the results obtained in a great number of sciences which have been artificially marked off for special study. The winds, for example, are produced partly by the influence of varying heat upon the atmosphere; but these effects are involved with those of the various motions of the earth, such as are studied in astronomy, and by the configuration of the earth as geology reveals it to us, by the distribution of solids and liquids accordingly, and also by various matters of elasticity of gases, of weight of gases, of the influence of moisture, and of the various other factors that involve chemistry and physics.

Turning now to ethics: I need not insist on the importance of psychology, since, indeed, my own exposition of psychology received its suggestion in the course of the study of ethical problems; the science of biology bears upon that of ethics, as has been abundantly shown by the brief references given in this book; and since man's struggle to live is eventually concerned with the forces of nature, his position is rendered clearer by a knowledge of natural laws; therefore finally the whole world of sciences, mental, biological and physical, are concerned in the study of questions of conduct, and every advance in these matters helps us to a clearer understanding of ethics.

Here we come again to the old difficulty of the extreme complexity of the subject. But without waiting for the full development of subsidiary sciences it is possible at times to state certain principles in physics, in psychology, and finally in ethics.

¹ It should be expressly noted here, what the subsequent exposition makes clear, that this point is not in contradiction with my own expressed determination to find for ethics a scientific base in the constitution of the universe itself.

To take an example from the physical world : If we have a known projectile, such as a cannon ball, with a known velocity of gyration, know translational velocity, and direction of flight, we can calculate its trajectory without knowing the extraordinary, complex changes involved in the explosion of the powder that gave the initial impulse. Again, in the case already noted of a girder bridge under strain, we know that if it rests on two supports half the weight comes on each; and this result is more certain than anything we should arrive at by the endeavour to calculate the whole system of molecular strain throughout the structure.

In accordance with this view we could deal with sensations of colours, and we could elaborate a definite branch of science, furnished with quantitative data, if we know no more of the objective side than that vibrations of a certain kind strike upon the retina, and thence send stimuli through the nerves of the brain. The subsequent elaboration by which we could fill in the gaps of this sketchy description would be of great interest in itself, and would constitute a valuable chapter of physical science, but it would add nothing to our conception of the psychic facts.

Similarly, in regard to ethics, we shall find it possible to arrive at certain data without the necessity of tracing the dependence in all its complexity and myriad details of that data on the constitution of the universe from which ultimately they derive.

It will not always be necessary to investigate the origins of sentiments, or of customs and institutions, or to explore the whole field of sociology in order to obtain a sure footing in ethics, although again every advance of knowledge in any of the particular factors aids us to a more complete understanding of the total problem.

This then is in part my answer to M. Lévy-Bruhl's demand for a thousand years of preliminary research before entering upon the practical domain of ethics.

I will now deal with his objection to the "normative" or legislative aspect of ethics viewed as a science. The analogy with the physical sciences is far from complete, as he himself observes. The physical universe is "given," the State is not given, not even Hegel's Hohenzollern regime, nor are human emotions, passions, degrees of educations,

aspirations and ideals. These are modifiable; these are becoming constantly modified.

It is, therefore, quite competent to inquire, and to seek the answer in a scientific manner, as to what forms of variation are capable of most vigorous development, or at what degree of variation a function, or an institution, ceases to be viable.

M. Lévy-Bruhl has, I think, been a little over-influenced by the contemplation of those physical sciences, as, for instance, mechanics, where a great gap is found between the abstract principle and what may be called useful applications. In these cases the gap must sometimes be filled up by a new kind of exercise of the intellect, as in the case of invention. Here an analogy would be found in the field of ethics, in the devising of institutions, modes of government, laws, and the like, whose establishment would secure certain desired ends.

But in positive science there are also cases where the application presents so little difficulty that it follows almost immediately from the clear understanding of the conditions. Thus suppose the problem were to determine what kind of fertilizers would assist the growth of corn, the question could be dealt with in a manner quite scientific and with no misleading obtrusion of the useful aspect of the application, just as if we had before us an exercise in chemistry; then would come the useful application. It is in this manner that I can conceive of ethics as a science.

Or, again, in meteorology, the science with which we have compared ethics, we could in the most approved scientific manner investigate the causes of rainfalls, or of winds, and we might determine whether in a certain locality rain was likely to be abundant or to be lacking, and we might in the way of application of our knowledge proceed to certain obvious arrangements.

Even in invention, the processes that are purely scientific become interwoven almost inextricably at times with those that are tentative and are matters of adaptation, for these adaptations must be contained within the limits set by the scientific data. Thus, when Watt was inventing his steam engine, he was helped by the purely scientific observation of the manner in which water behaved at a temperature of 212° Fahr., and by observations of the law according to which the pressure of steam increased with the temperature.

The possibility of the transformation of longitudinal motion into circular motion might have been taken as a preliminary scientific problem. This would at once assure Watt of the practicability of his system as soon as the movement of a piston was obtained. Thus, finally, the invention becomes fined down to that of the devising of the best form of valve to allow the due entrance and escape of steam.¹

Analogously, we shall find it possible to lay down certain determinants, or standards, which will guide us in estimating the value of moral or ethical principles, and it will be the task of the subsequent section of this work to give an exposition of the matter.

To sum up then the results of our discussion founded on M. Lévy-Bruhl's essay: (1) The principles of ethics rest in the constitution of the universe itself. It is not, however, necessary to make a preliminary investigation of the whole intricate mass included in this field. This may be left to the separate sciences, mental, biological, and mechanical. Every advance in these is helpful. (2) But just as, though all the sciences are correlated, we can mark off a branch, so, although ethics touches upon all the sciences, we can sufficiently separate it as a domain susceptible of being treated scientifically. The science here considered is not liable to the objection of M. Lévy-Bruhl that because it is "normative" it ceases to be a science. The applications that will be kept in view may be taken for granted as presenting no new insuperable difficulty. (3) The particular applications, such as correspond to the various adaptations and inventions that flow from physical science, will in ethics be found in various institutions, laws, and modes of society.

The present work is chiefly concerned with those features included under division (2). In order to exemplify these, there will be a brief indication of the manner of employing the principles which will come under division (3).

The main object of the work, however, will be to show certain lines of division, going deep down to the basis of things, within which the development of ethics must take place.

¹ The invention of the Diesel engine followed still more closely and deliberately the scientific data of thermodynamics, of which the basis was laid by Carnot's theoretical heat engine.

Part II

STANDARDS, DIRECTIVES, AND CRITERIA OF DEVELOPMENT IN ETHICS

The object now is to ascertain the main lines of structure of a true system, and of principles of development. The "tripod of Ethics" consists of Truth, Energy, Sympathy. The principle of Truth points the way to Science; that of Energy leads to an analysis of the conditions of efficiency; that of Sympathy, to co-operation, to justice, and to expression by various institutions, or otherwise, of the interdependence of society.

An examination of biological data helps us to form criteria of the degree of development.

We thus enter into possession of the main lines, the principal development and the directives of the system.

CHAPTER I

SEARCH FOR THE FOUNDATION OF ETHICS

WHEN we depart from authority, and from the common-places of received traditions and seek in the constitution of the world itself for our ethical guides, we have the sense of greater freedom, and the hope of ultimately reaching greater certainties than those we have discarded; but with it all comes at first the sense of a blank disappointment, not unmingled with vague terror, as Pascal expressed it, of the silence of infinite spaces; and when summoning resolution to the point of an undaunted outlook in this cosmos, we find there a feeling of bewilderment, of a despairing and almost futile regard in the immense complexity and extreme elusiveness of the problem. That certainly is not a good reason for abandoning the expedition in dismay, and flying in a chastened mood, willing to accept any terms, to the camps of orthodox nonsense.

Even if sincerely we charted down the motives, incentives, and impulses that resulted in any particular effort to strike out in our moral world we should be taking a step, however small, to the elucidation of the mystery, and the results of such an analysis would be of value, particularly if we refrained from proceeding on the basis of individual experience to unwarranted generalizations.

By such means, however, we could never make great headway because the particular cases are too numerous and too complex. Besides, this kind of analysis would soon be seen to imply a certain degree of fineness and certitude of psychological knowledge; and it would be necessary to enter into deep explorations in that domain.

That has really been the route, summarily indicated, which my mind has pursued in regard to the present work. At a certain moment after seeing the nature of the problem vaguely outlined, I turned to the question of psychology, which seemed to bear upon the subject.

Then after some preliminary study, followed by the definite rejection in this domain also of a great mass of learning which had been accepted as authoritative, from Aristotle to Kant and onward, I was brought face to face there with a world of fascination, but of so vast, complex, and intangible a character that anything but tentative treatment seemed hopeless.

Through it all, however, was a sort of certitude of intuition that in this apparently endless confusion I could find sure standards, but that I must begin by casting aside prepossessions, and by approaching the whole question in a new manner and by finding new guides.

What I sought for was some means of arriving in this psychological domain at something corresponding to the chemical elements in the physical world; that is to the discovery of these elementary, or, as I have since called them, Fundamental Processes of the mind, by the combinations of which the whole world of thought could be built up.

When once the problem was set forth in that way it became evident that its solution would furnish the basis for a true scientific development of psychology; but the extreme difficulty of the problem might well have acted as a deterrent. Here also I found that particular and partial analyses, however interesting in themselves, would never lead to a complete solution of the general problem; therefore I was forced to seek deliberately for new methods.

The complete solution, and the exposition of the arguments, form the substance of "Psychology: A New System," and "Principles of Psychology"; but as frequent reference is made in this work to results there expressed, and as I have had ever in my mind the psychological foundation on which this system of ethics rests, it seems advisable to indicate in the main lines the method of that work. The condensed account that follows requires the most careful attention.

In considering any complex of sensations, for example, or any sequence of sensations, it is possible to make abstraction of the actual quality of the sensations and to consider an underlying "schema," which has to the original complex a relation analogous to that of the web of a carpet to the actual carpet with its coloured pattern. Thus, for instance,

if I direct my eyes to a succession of coloured discs the actual operation of direction will not be varied when the colour of the disc varies from, say, red to green.

From this simple example it may be understood that throughout the whole world of thought we may separate the "sensile" forms (coloured or graphic) from the underlying schematic forms.

This conception of the schema will help us remarkably in attaining rigour in our reasoning in the field of psychology, for apart from the schematic form we may now consider the sources from which we derived the sensile forms. We may divide these into two main classes; those that come to us by the medium of stimulus from bodies external to us; and those that arise in some way by virtue of our own constitutions without immediate external stimulus; we may call these sources (1) "Objective," and (2) Subjective.

It is thus left to us to examine as fully as possible the nature of these two sources of experience. I have carried out that examination, and I find that the ultimate sources of our knowledge of the world are the senses, the widest scope being given to the extension of this term consistent with the results of our physiological researches and introspective tests.

We may now return to the consideration of the schemata, assured then that if we discover the secrets here also we shall have covered the whole field.

Amongst a series of delicate examinations and experiments which I carried out were certain analyses destined to give the answer to such questions as: "How many objects of thought can the mind hold in contemplation at one moment?"

The answer to this question is: One, and the sense of relation of that one to the next succeeding, the first dying away as the second arises.

This answer I give not from any preference, temperamental or other, to that solution, but because I have been led to it by methods of demonstration.

At the same time I undertook a series of analyses of which the object was to discover the essential mechanism of mathematical processes. These two forms of investigation became ultimately associated; for I found that all the

mathematical operations rested upon that of counting, and that counting, as we know it, was rendered possible only by the fact of the mind operating, as has been said, from one unitary conception to another.

I next investigated all the processes that lie at the base of mathematics, both spatial relations and those referring to order. I found all the Fundamental Processes to be involved, so that all operations might be regarded as combinations of these.

Then I showed that the scope of mathematical operations could be made co-extensive with the field of thought. In this manner, then, finally I was able to show that the Fundamental Processes which I exhibited were both sufficient and necessary to cover the whole domain of thought, and that any form of thought was capable of being exhibited as a synthesis of these processes.

The whole mode of approach to the central problem of psychology is thus, as I have barely outlined it, altogether different from that usually found in books of psychology, in which each one has copied, adapted, slightly extended or amended his predecessors. I have therefore proved that not only have I by the method adopted been able to arrive at the solution of the central problem of psychology, but that by no other method was this possible. Incidentally I have shown wherein consisted the deficiency and the faults of the systems of Aristotle and of Kant, and I have made it clear that not only is the guiding principle of Herbert Spencer's psychology faulty and defective in enunciation, but that he fails to enter into the veritable essential problem, and that therefore his system was destined to be infertile.

Minute investigations on the Fundamental Processes follow, that on Memory, for example, being based on a series of experiments, some of a very laborious character, devised to give definite answers to a series of probing questions.¹

Naturally, a system of psychology obtained in this manner becomes more than a lifeless theory; it becomes also an instrument of investigation in regard to various "positions" in philosophy, and by its aid I have given solutions

¹ In the excellent work of Dugas: "La Mémoire et l'Oubli" will be found numerous references to this chapter of mine on Memory in which the experiments are cited as conclusive.

to a series of these that have baffled the minds of thinkers since speculation on such matters first began.

The Fundamental Processes themselves are shown to have certain necessary relations which bind them all together, but without labouring that matter, of high interest though it be, it is possible now to formulate these Processes.

They are :

1. Immediate Presentation.
2. Concept of the Unit.
3. Association.
4. Memory.
5. Agreement.
6. Generalization.
7. Sense of Effort.
8. Impulse.
9. Hedonic Sense.
10. Sense of Negation.
11. Concept of Space.
12. Concept of Time.

Turning now to the special problem of ethics I have, as in the Psychology, surveyed the products hitherto presented in this field, and I have found them all unsatisfactory, not merely as regards any special determinations or conclusions, but in their basis. It behoves us therefore not to seek to piece any of these together, or to form some sort of adaptation that may favour our own preferences, but rather to ask new questions of modes of approach and of methods of investigation.

Accordingly, as in referring to Aristotle and to Kant and to Herbert Spencer, I have sought to cut into a mass of intricate and voluminous argumentation by showing the "germinal idea" in each case from which the system had become developed, so, too, in regard to the system here offered I will lay aside all technical phraseology as far as possible, and I will exhibit in bare form, divested even of those subtle and intangible associations that have helped to direct the thought, the germinal idea from which I have proceeded.

In the first place, a system of ethics should be impersonal. It should have permanent value, even though its precepts should be capable of application to the particular circum-

stances of a certain time. The scope of the system should be general; and that will be found to be a principle which will serve as a valuable determinant.

The suggestion of the Fundamental Processes will help us in two ways. One of them consists in the study of their import as regards ethics, the other in the manner in which they have been obtained.

Here, then, is the germinal idea: to strike down by bold, daring strokes, whether of analysis or by some means of illuminated vision, so as to obtain principles that are fundamental, that rest on bases as deep as those of the accepted laws of nature themselves; and on that foundation to build the superstructure step by step by rigorous consecutive arguments.

Fundamental Principles of Ethics

When any one of the principles sought for has been ascertained, then that remains for ever in our possession, for truth is always consistent with itself, and we may be sure that whatever principle we may subsequently discover will not be in discord with the first. Three of them I posit, just as in the Psychology I posited the Fundamental Processes. They are Truth, Energy, Sympathy.

When I say "posit" I do not mean to imply that I seize these at hazard with an air of saying that they will serve our purpose; I shall show them to be not only fundamental but inevitable. My reason for "positing" them now is that I believe the exposition of matters that might easily become abstruse is aided if the reader knows the drift and intention of the argument, for he is then able to see what matters are essential, and what others occur by way of illustrations in the course of the reasoning.

Another reason for positing them is that to take the reader through the whole route that led to the recognition of these principles as cardinal might seem, although interesting to a small number of the elect, too fastidious and complex for the patience of others.

It is perfectly scientific, however, to announce a result, and then to show that the result is a necessary consequence of the conditions from which we have been able to proceed.

Certain corollaries will be drawn from these principles;

they will, in fact, be found extraordinarily fertile in that regard; and with the original principles and the consequences that flow from them we shall find ourselves in possession of an ethical philosophy which is true and necessary, and of which the applications cover the whole field of ethical problems.

It must be noted that if these principles be necessary to the explanation of a true ethical philosophy they may not be sufficient; that is to say, there is nothing to prove that another principle, or other principles, may not be recognized that may be adjoined to these in a co-ordinate manner.

This is true, but we are helped by psychology to understand that if we exhibit certain valid factors entering as components of a solution then they remain undisturbed, even though the solution be incomplete; and just as we found in psychology that the Fundamental Processes implicate each other, so we shall find this with the fundamental principles of ethics. Therefore, in faring forth we shall be able to test the sufficiency also as well as the necessity of our principles.

I regard, then, the three principles which I have as the "Tripod of Ethics," that is to say, the supporting structure; or, as I might express it by another metaphor, the main lines which make the framework of the vessel. The corollaries which will flow from these principles, or which will be obtained by other considerations in accord with them, will develop the whole complex structure of the ethical system in its adaptation, even to particular questions.

Certain of these subsidiary principles will be ascertained by returning to the suggestion of Herbert Spencer, in regard to evolution. I make use of him here rather as a name to indicate my intention, for I have already rejected his philosophy; but I find something useful in his method, and I will bear it in mind in endeavouring to obtain some criterion of higher development.

To fix the ideas—for all that is now being said has an abstract air that will be rendered familiar by examples—suppose that we affirm that the development of intelligence is of a higher ethical order of things than the development of physique, our statement would probably be accepted without demur. That, in fact, is the manner in which such a position is usually presented. I want, however, not merely

to prove this, but to find a principle which will demonstrate it and be capable of development in the way of establishing other positions which may seem less obvious.

The examination of the Fundamental Processes will have a bearing at any turn on the questions of ethics, for these processes serve to trace out the course of the mind in reasoning, or in the progress from one set of related facts or concepts to another; and the reasons that determine the progress along certain lines are linked not only with the intellectual character, but also the moral nature of the individual.

The importance of the study of the Fundamental Processes will be clearer if examples be given. Thus various schools of philosophy have discussed for two thousand years the question of pleasure, or, as we may call it in a more general sense, the Hedonic sense, in morals. Aristotle asserts that pleasure should be a guide, but not an aim. Epicurus more boldly makes pleasure itself the goal, though he defines pleasure in terms that make it accord with Aristotle's own conception of intellectual activities that produce happiness. Kant has the Scottish Calvinist's dislike to pleasure in itself, and that temperamental feeling appears in the mandatory form, dominating natural inclinations, of his "Categorical Imperative." Herbert Spencer inclines to the Epicurean view, but he seeks to justify his position by appeals to laws that have a wider scope than even individual predilection.

Here it would seem that a choice is offered, and that it greatly depends on the general terms of one's habits and thoughts as to which school one may prefer.

But in discussing¹ the nature of association, and finding reasons why in a network of possible paths the course of thought should proceed in a certain direction, we found that even at this level, where many of the processes become automatic and unconscious, the influence of the Hedonic sense is prevalent in determining the associations.

It is, therefore, unscientific to attempt, as Kant has done, to build an ethical system that runs counter to this Hedonic principle.

¹ In "Psychology : A New System " and "Principles of Psychology."

There is another manner in which the study of the psychological foundation will help us, and incidentally show the insufficient basis on which famous systems of ethics have been built up. Hume, as we have noted, regarded sympathy as the support of ethics, and he elaborated the matter so as to show the utility of this sentiment. Adam Smith, who built his system on sympathy, accepted in the main the reasonings of Hume, but believed that something deeper was involved than the mere consideration of the advantage, whether to the individual or the community, of that sentiment.

Adam Smith's system is very inadequate as an exposition of a complete ethical doctrine, but his intuition was here finer than Hume's. In sympathy there is something more fundamental than anything that can be likened to an assessment of benefits. The question is associated with others in close relation, so that instead of merely discussing it in the terms in which it appeared to Hume and Adam Smith, I propose to take a new cast of thought.

First of all consider the physical world. If a material system, the simplest being a material point, be introduced into this world, it will undergo the influence of various forces such as gravity, electrical condition, pressure and resistance of the air. If the body be originally endowed with velocity, then its course will be determined by all the forces that impinge upon, as well as by the original conditions of the system.

Suppose now that instead of the material system we suppose an organism, and that to save time in our progress we rise at once to the human organism. The course of that organism through the world is determined by its original constitution and conditions, complex as they may be, taken in conjunction with the forces that influence it not only from the physical world, but also from the psychological world, represented by institutions, various factors of education, and all the forces of whatever kind derived from other minds.

Now the problem of psychology, in its most general expression, is to show the manner in which the mind of this organism comports itself in this world of experiences, and in what manner it gains the impression of the world as it sees

it, even in its completely objective aspects, and in what way it adjusts its knowledge and the directives of its actions to attain certain accord with the external world.

In the investigation of this problem we find that given certain conditions the Fundamental Processes arise automatically, or, as we may say, instinctively. There is a physical correlative to a sensation, or Immediate Presentation. When that physical correlative is produced in any way, and in similar conditions, the Immediate Presentation arises similarly, independently of our desire or pleasure.

The next stage of complexity is when the organism must adjust its movements not only to its own personal requirements, but in correspondence to that of similar organism, actuated by experiences, feelings, desires of a like nature.¹

From the point of view of the individual it is evident that he will better direct his course in relation to other individuals in proportion as his knowledge of their conditions, their intentions, and desires, is better. It is at this point that we have the explanation of the fact which Adam Smith vaguely perceived without being able to define, viz. that

¹ Here infallibly we must come to a conception of standards of judgment, of principles of guidance, and therefore ultimately of some general interest or purpose.

We cannot content ourselves with that limitation of the scope of ethics which M. Lévy-Bruhl would impress upon us, for even if we tried to look at the whole of the processes before our eyes in the most objective manner, we would be convinced that in the reality of things the adjustments and relations that take place between organism and organism are not closely comparable with those which we first contemplated in regard to purely physical systems.

The interplay of organism on organism results successively in the modifications of each of these, and therefore finally of the nature of the world in which they move; and however much the philosopher regarding the whole matter may endeavour to be unmoved by emotion, or by the sentiment of the ethical advantage of one set of feelings or conceptions over others, it is the case that the individuals themselves are constantly influenced by such sentiments.

The aims they have in mind may at times be illusory, the desires of a temporary or circumscribed character, but they are not only real in themselves, they make the total reality of human endeavour. Therefore the philosopher, without departing from a scientific attitude, should even in regard to fragmentary and imperfect conceptions and desires of the individual, offer the same advantage of clear vision and generalization as a mathematician who expresses a general theorem that covers a number of solutions of particular problems.

sympathy is not an outcome of a consideration of advantages arising from any display of character or of action; it is more immediate and natural.

It arises here easily as an extension of the psychological principle that when the physical correlative be present the corresponding sensation, or other psychic state arises. For if there be a clear apprehension of the intelligence, the aim, and the mood of another individual, all that will have been brought to our mind in a representation of the ideas, aim, mood, the more impressive the more this representation is vivid and complete; and becoming thus assimilated in our own thoughts, these conceptions affect ourselves, automatically and spontaneously, with the emotions which they excited in the original mind, in proportion as our disposition is in accord or otherwise with that of the original.

This feeling is called sympathy. In this manner we see that it is both of a fundamental character and that it bears directly on ethical problems. To that degree those who have considered it of great importance in ethics have been justified, but in resting their systems entirely on that base they have given a partial and therefore misleading view of the subject.

Another ethical incident of sympathy is found in the explanation of the rôle of co-operation in human society, and that will be considered in its place. For the present I content myself with establishing the "Tripod of Ethics" on the ground that each of the three facts is general, fundamental, and of cardinal importance in ethics.

* * * * *

The definition of energy in the physical world, as being the capacity for doing work might with the simple adaptation of the language be employed in the world of moral affections. Hence it will be found to be fundamental and essential. When the ultimate analysis is made of the conditions under which man conducts his life, it is seen that his constant battle is against the forces of nature, and one of the factors that determine the degree of his success is that of his energy, mental and physical. The importance of this factor is seen throughout the whole scope of the world where force comes into play. The difference between the light of the sun and

that of a candle might in part be described as a difference of energy.

The consideration of energy in its character and relation leads into a thousand different fields. For instance, the physical energy of the individual depends on the degree of energy of the different component parts that form his body, and the energy of each of these depends on the state of its health, and that depends on questions of the favourable conditions, as, for example, with regard to exercise and nutriment, which apply to each of these parts.

It is not, however, necessary to labour the question of the essential character or the importance of energy, since it is evident that in any conflict of two men, or two races, or two systems, the victory will remain with that which, all other things being equal, has displayed the greater energy. Like Aaron's rod, the true doctrine will eat up the others, and the disciples of the true doctrine will prevail eventually against those of the false.

A lingering doubt on the ethical side may give uneasiness here as to whether this implies in any sense a preference of might to right. I have already referred to the ethical worthlessness of the systems of glorification of brute force, but, on the other hand, it will be found as one of the consequences of this present work that we shall often have occasion to recast our standards of right. We are apt to pass our own judgments of a sentimental character upon tendencies and acts, and decree them as lofty, superior, or spiritual, and then find fault with some process of nature that takes no heed of these eulogistic descriptions. Supposing then that we had two races, or nations, in opposition, equal in all things except that of an ethical principle; which afforded greater energy to one than to the other, then by the mere fact of survivance the ethics of the race of the greater energy would be superior to that of the other.

This statement may require a little reflection, but its truth will appear the more clearly the more we consider it. It must be remembered that the principles of ethics, however difficult to formulate, apply to real men, and not to abstractions or to men whose traces have disappeared. Otherwise we might just as laudably elaborate ethics for the man in the moon. Applying these to real men, they

must apply to such as would be survivors in a struggle of life or death that hinged on the differences of ethics.

Energy, therefore, by reason of its vitality, is a principle, general, fundamental, and true.

To some, the peculiarity of this argument may seem that it rather enforces a position that would be accepted almost as self-evident. That may appear to be the case when the principle is expressed free from bias; but so far from being currently accepted, we shall find, on the other hand, that nearly all the popular ethical teachers preach the superiority of a state of quietism, a non-resisting meekness, and what we may roughly call a namby-pamby kind of ineffectiveness.

That is, indeed, one reason why ethical gospels often seem so far away from real life, and why the philosophies that have been thus produced are despised by men of character. The vogue that some of these systems have acquired is due to an association of falsity and hypocrisy, cunning men using the teachings to subdue the resistance of others while showing by their actions, as apart from their professions, how little hold the doctrines have had upon themselves.

* * * * *

Finally, we touch again on Truth as a general and fundamental principle. What is Truth? said jesting Pilate, and waited not for an answer. That phrase has been so often repeated that it has acquired authority, in the sense of suggesting that no answer could be forthcoming even if Pilate had been less jocose and more patient. In my own experience, however, I have not found pro-consuls to be paragons of speculative subtlety, nor exemplars of devotion to high ethical standards; they are generally men of mediocre intelligence and manufactured opinions.¹

As a rule there is no great difficulty in knowing what is meant by truth in ethical matters, and the metaphysical perplexity is rather played upon by dishonest minds seeking to escape from a situation in which their own truthfulness, or consistency, may be impugned.

¹ The answer to the question of Pilate is contained within the whole exposition of "Psychology: A New System" and "Principles of Psychology," and particularly in a chapter in the sanctions of belief.

Even if there were difficulty in accepting Truth as a general and essential principle of ethics, it would be sufficient to make it a condition within which the exposition of any particular system might be contained; as if, for example, we were to say: This work is consistent with the general march of the phenomena of the world, but it expressly excludes from its purview whatever may be accepted by those who have no regard for Truth and which they put forward in accordance with that spirit of negation.

* * * * *

To sum up this chapter at the threshold of the system, we have set forth three great fundamental principles, general, essential, true, which form the determining structure on which our system will be built.

That system will be found to be fertile of positive results; but even if these were to be disregarded, it could be claimed that already by the assertion of these three fundamental principles an immense mass of ethical teaching which has influenced and often dominated the minds of men for thousands of years can be swept aside.

That is of great value in itself, and as the influence of the false teachings of the generations near our own time is more plainly seen, it will be found to have been of immense importance; for at present this false teaching cramps and distorts and vitiates young minds at their most susceptible age, comparably to the malpractices of flat-head Indians, and few minds so strained ever regain elasticity and freedom sufficient to enable great conceptions to enter or natural opinions to be formed.

In subsequent chapters each of these principles will be developed, and subsidiary principles consistent with them be investigated and elaborated. Thus, for example, it will be found that the establishment of truth as a principle leads to the fostering of science. When, in regard to determining man's position in the world and the effect of his acts from an ethical standpoint, we seek to define the world, we find the great divisions which are represented by the physical sciences, the biological sciences, and the mental sciences. From each of these we shall obtain assistance.

We shall then be in possession of the main form and

guiding principles of our ethics. Coming then to the life of the man, first in the family, then in social communities, and finally in the state, we shall find various institutions which form effective practical guides.

What we must demand is that the spirit and form of these should be in accord with the general principle; that being the case, we may trust in small and immediate matters rather to the guidances of these forms than to abstract reasoning derived from first principles.

The subsequent part of the exposition will accordingly show developments arising from the fundamental principles of Truth, Energy, Sympathy; then a review of the considerations derived from physics, biology, and psychology; then a discussion of certain institutions and forms, particularly of government; then an illustration of the mode of application of the principles to special problems; finally a summary with a consideration of ideal forms.

CHAPTER II

TRUTH

THE principle of truth in ethics implies something more than the mere passive acceptance of true propositions, or the mandate to refrain from false statements; for since we live in a world where influences both from the inorganic and the organic world determine our mode of life, and our relation to other beings, it is evident that the fuller and the more precise our knowledge with respect to these domains the better we should be able, other things being equal, to make the necessary adjustments.

Hence the recognition of the principle of truth should lead at once to activity in the search of truth; and when such activities are co-ordinated and rendered as efficient as we can make them, we enter into the domain of science.

The pursuit of science suggests step by step to the mind the need of attaining improvements in methods and instruments, not only those of a physical kind, but such as imply dispositions and processes of the mind. Amongst the faculties of the mind capable of development generalization is important. We meet with it as one of the Fundamental Processes in its rudimentary form; but when it is developed, both in its scope and in the facility of its application, it distinguishes a mind trained in a scientific manner from the mind of the uneducated or falsely educated man.

This is not merely a faculty of artistic excellence or show; it corresponds to a real power over the objects of thought. To make this clear an example may be given. A boy at school is given a problem in algebra which involves the solution of a quadratic equation. This quadratic equation may be expressed with numerical factors, and after a series of tentatives a correct solution may be found. If the solution has been arrived at unsystematically it may happen that the boy may not remember, or may not be able to repeat

the steps by which he arrived at the result. If, then, he be given another problem, slightly varied, he may not recognize that it belongs to the same category as the first, and possibly all his tentative efforts fail.

In seeking for a generalization the student would recognize that the particular numerical factors might be changed into other numerical factors without altering the essential characters of the problem; and the next step would be to express these factors by letters such as "a," "b," which would thus represent any or all numerical factors.

The solution obtained in these terms would be general, and it would have a wider scope, and consequently greater power in this field of investigation, than a particular solution, for any particular solution could be found at once by substituting for the symbols "a," "b," the numbers corresponding in the particular problem.

This is a simple illustration, but there will be no difficulty in extending the principle, nor in finding examples where generalization has given command over a wide range of applications.

When Newton enunciated the law of gravitation, according to which every particle of matter in the universe attracts every other particle in the direct ratio of the masses and in the inverse ratio of the square of the distances between the particles, he had reached a generalization less certain than that of the formula of solution of quadratic equations, for he had not tested the law with respect to every particle of matter nor had he given any absolutely convincing reason, such as the discovery of a universal causative process from which the law would follow as a corollary. Newton leapt to a conclusion, and though this process is usually unscientific, it becomes justified if every example subsequently tested is found to be in accord with it.

The means of progress in science is, in fact, no other than that of tentatively forming hypotheses, and then submitting them to a test. It may happen that a discovery will show us that there are bodies which escape Newton's law, but we would not for that reason reject the law, we would endeavour to ascertain the nature of the bodies subject to that exception, and we would seek to form a new generalization by separating in the case of such bodies found the

essential factor from the accidental attributes found in association with it.

We gain something, then, by every generalization which covers a wide field, and if on closer examination we find exceptions to the generalization we still gain by a better definition of the law.

Let us take another example of a definition still bolder than that of Newton, and rendered hazardous by the fact that it dealt with animate beings, but which has proved of great service in science.

Theodore Schwann placed a portion of meat in a jar hermetically sealed, and a similar portion in a similar jar in which access was allowed to the air. In this jar putrefaction took place; in the closed jar there was no putrefaction.

Schwann, taking up a theory that had been first put forward by Spallanzani, ascribed the difference in the state of the two portions to the action of germs in that to which access was allowed; then he put forward the daring generalization that the presence of germs was necessary to produce organic change of any kind.

Schwann, who was a Roman Catholic in religion, hesitated before publishing a theory of such vast consequence, and he consulted the Archbishop of Bonn on the question. The Archbishop thought that Schwann had absurdly exaggerated the importance of this experiment, and he gave the permission required. Here, it may be remarked in passing, is an instance of an ethical question of great significance being decided on grounds that took no account of the essential character of the problem at all.

The issue on the moral side might be expressed as that of the question whether it can be right at any time to prevent the knowledge of a truth of great importance to humanity. The only grounds of such suppression are those of the possible conflict of this truth with some established formula or dogma. But we may accept as a postulate concerning truth that it is always in accord with itself; therefore this truth could only be in conflict with a false formula or dogma. The point then appears as to whether truth should prevail over falsehood.

Expressed in plain terms the position shocks our sense of justice, yet there are many great historical examples

where the representatives of the morality of a nation have decided in favour of falsehood.

The story of the Inquisition and of its persecutions of men of science of the calibre of Galileo and Vesalius, is familiar, but in the ordinary administration of the government of all nations the principle arises, though in less spectacular form, and the decision is often given in conformity with some rule, or custom, which places secondary motives above cardinal motives. In other words, falsity is preferred to truth. Here we have a glimpse of the wide range and searching character of this principle which we have placed in the forefront of our system of ethics.

Returning now to the question of generalization, we find that Schwann could not have tested every example of organic change, nor possibly could have had a clear view even of all the fields of application of his principle; for organic changes take place not only in putrefaction, but in all the physical operations of healthy life, in the course of disease of any kind, and in a great variety of processes such as fermentation.

That the presence of germs was necessary to effect changes in all these cases was indeed a great conception, and one of which the value is found in the enormous impetus given to bacteriological research.

The first great work of Pasteur in this domain had a stimulation which derived from an ethical source, quite apart from the general motive of the advancement of truth and knowledge and of the furtherance of the power of generalization. It was in fact patriotic considerations which first induced him to turn his attention to the ravages produced by phylloxera in the French vineyards.

His labours redounded to the credit of France, not merely in an intellectual regard, but also in advantages that may be measured by material standards. The delicate researches among microscopical organisms resulted at length in saving the vineyards, in increasing the revenue of France, and thus in helping her considerably to pay off the indemnity demanded by Germany.

The generalization of Schwann suggested research so as to distinguish the bacteria, and this has set in motion a vast amount of scientific work, and has changed the whole outlook of medicine in regard to disease.

Then, further, since all organic change was produced by germs, it followed that in the processes of decay of any vegetable, a potato, for example, germs should be found in activity. The next step was to reflect that such activity in a vegetable substance implied nutriment derived from the substance. This suggested to Koch the cultivation of bacteria on suitable media, and experimentation to find the best media.

Here, again, we have at once, as if by the removal of a shutter from a window, a view of vast possibilities of development. Cultivation suggests by contrast immunization, and the investigation of immunization showed in what manner the knowledge of vaccination, first practised somewhat empirically, could be employed.

By steps of this character we see that the observation of Schwann, illuminated by his brilliant generalization, was sufficient to set going a great amount of research which was destined finally to lead not only to the best means of dealing with disease in the individual, but of lessening its ravages, and eventually of eliminating it by large preventive measures.

It would be possible here to show the bearing of this discussion on ethical questions by citing an argument of Herbert Spencer which leads to the adoption, for a standard of development, of "mass of life"; that is to say, the extension of life and the higher appreciation of activity and scope of life. This, of course, depends on the general health of the community; therefore eventually on such generalizations as that of Schwann, and hence ultimately on the principle of Truth.

That particular position of Herbert Spencer I accept, but I prefer to reach my conclusions by another route. In the meantime I would like to cite other cases of the fecundity of great generalizations, and to indicate in what manner it may be shown that those features of our modern civilization in which it is superior to that of the Greeks depend on science and on the practical corollaries of science.

In this way without losing anything of the value of Herbert Spencer's standard we will arrive at a conception of the importance of the principle of Truth far greater than if we measure it merely by physical advantages.

The reference to Schwann's generalization is, however, not quite complete; for, after showing the great results that followed from it, we must now be reminded that that generalization was not true in the form in which he enunciated it, nor was there sufficient ground in his observations to warrant his interpretation. The actual presence of minute organisms is not necessary to produce organic changes, though the work of these organisms is required. The changes are for the most part brought about not by their direct action as living organisms, but by ferments which they produce.

This fact does not destroy the work founded on the first generalization; but it serves to rectify it and to render it more precise.

This is not a case, however, of a valid result being produced by fallacious reasoning, for the greater part of the work of development did not depend on the knowledge of the exact process or mechanism producing the changes. At a stage when greater precision became requisite, error would result from the failure of the generalization to correspond with the facts.

Hitherto we have observed developments within the limits of a particular science. It will be interesting to look for the early stages of others, and we shall find them generally in the speculations of the Greeks.

Fertility of Mathematics in Discovery

Amongst the sciences which they cultivated, and to which they rightly attached great importance, was that of mathematics. Their system of mathematics was too restricted, for they worked greatly by means of relations of the parts of geometrical figures on the one hand, while they cultivated on the other a form of rudimentary algebra, without perceiving, what it was the chief glory of Descartes, some two thousand years later, to make clear, that these two realms could be made to interweave, and that the results of algebra could be applied to geometry so as to lay bare a vast number of geometrical relations.

Nevertheless, the Greek geometers produced some very interesting results, especially in their treatment of conic sections. They were acquainted, for example, with im-

portant properties of the parabola, such as that two lines drawn from any point of the parabola, one to the focus and the other in a direction parallel to the axis, formed equal angles with the tangent at that point. But rays of light reflected from a surface make, in their successive directions, equal angles with the reflecting surface. Therefore finally rays of light thrown upon a parabola in a direction parallel to its axis would be reflected to the focus. This would also be true of rays of heat, as is indicated in the derivation of the word itself from focus, a hearth.

Here is one practical result, and it is recorded that the celebrated Archimedes made use of observations of the kind to assist the Greeks in war by setting fire to the enemy's ships.

The reason why geometry lends itself so easily to physical applications is that it deals mainly with the relations between straight lines and symmetrical figures, and in nature there are a vast number of occurrences which are displayed in straight lines and symmetrical figures.

Thus, for example, light travels in lines which may be generally taken as straight for all practical purposes, so that the results obtained from geometry are applicable at once to optics where the effects are observed of the incidence of beams of light upon bodies possessing symmetrical or regular surfaces.

An optical apparatus is a kind of wireless telegraphy, but its use is limited by visibility. We have no need to strain terms, or to speak in paradoxes, however, to link the thoughts of the Greek geometers with that of wireless telegraphy as we know it to-day.

Galileo went to the works of Archimedes for instruction and inspiration, and his researches in optics produced, amongst other results, the invention of the telescope.¹

The investigations of Descartes in optics produced considerable advances in the knowledge of the behaviour of light, but it was really his work in a domain which might seem at first sight to have no reference to optics that at length resulted in the most brilliant discoveries in that particular subject.

¹ Galileo used in 1609 a telescope modelled on that which Hans Lippershey constructed in 1608, but the Dutch inventor relied on theoretical principles which had been expounded by the great Italian.

In mathematical matters a new device is rather a discovery than an invention,¹ and so the establishment of the Cartesian co-ordinates results from a remarkable stroke of observation. This extraordinarily interesting history may be outlined briefly. Descartes lying in bed, as was his wont, one morning, thinking intently became suddenly struck by the fact that three of the walls of his room, taking the floor as one of the walls, traversed each other at a point, one of the corners of the room.

This was the veritable leap of genius of the philosopher's career, and the flush of excitement of this discovery and the corollary that immediately shone out, made Descartes physically leap out of bed with excitement. He had observed that an object in the room was distant, in a perpendicular direction, from these three walls, by lengths which could be measured. These measurements could be expressed by symbols, by numbers, in fact. Conversely, then, if one had the three walls given it would be possible to find again the position of the object when the three symbols, or measures, were known; and so for any point in the room or space.

The symbols of those three measures are examples of the co-ordinates of Descartes—Cartesian co-ordinates, as we call them.²

¹ Hermite, one of the masters of the Calculus, regarded the great feats which served to advance our knowledge of mathematics rather as discoveries of hidden relations than the creation of new associations. His correspondence with Stieltjes is very interesting in this regard.

² It is usual to speak of space as of three dimensions. Further, it is evident that if a point in space move, and we know the law of its motion, we shall require to take time into account in order to define its position at any moment. Thus if x, y, z represent the measures of the Cartesian co-ordinates, and similarly t be taken as the symbol of time, we will have in our expression for the position of the point the indices, or co-ordinates, x, y, z, t . Lagrange accordingly speaks of t as a fourth dimension, meaning nothing more by the term than is expressed by calling x a dimension, that is to say, the measure of a co-ordinate. The phrase "fourth dimension," however, passed into literature, and various philosophers, notably Czolbe, spoke of Time as the fourth dimension, and tried to imagine something that bore the same relation to space as space does to a plane surface.

Here, however, we have simply a confusion of terms. I have shown in "Psychology: A New System," that the conceptions of time and space are fundamental processes, and that therefore they cannot be merged one into the other.

Further, to speak of space as of three dimensions is meaningless, except in reference to some system of co-ordinates as, for example, the

If now we take a regular and symmetrical body, such as an ellipsoid, and set up our system of Cartesian co-ordinates so that the origin of co-ordinates, that is to say, the point of intersection of the planes, coincides with the centre of the figure, then any point in the surface of the ellipsoid will be expressed by these co-ordinates, so related to each other that, as a little reflection will convince the reader, when any two co-ordinates are given the third is determined. This relation may be expressed in the form of an equation, and since the ellipsoid is a regular and symmetrical figure, the equation corresponding to it will be regular and symmetrical. The principle can, of course, be extended to other figures.

It will be seen therefore that instead of investigating the figures we may investigate the equations corresponding, and

Cartesian. But Plücker, noting particularly that the selection made by Descartes of his system of co-ordinates was in some degree arbitrary, devised another system of co-ordinates in which four, or even five, co-ordinates might be used. Space, then, might be said to be of five dimensions. This method of Plücker is not an instance of mere ingenuity; he wished to obtain forms of expression which would enable him to regard equations containing more than three dimensions, apart from time, as expressing spatial relations, and his system has been extended by the conceptions of Klein and Sophus Lie.

Space has no dimensions in itself. The term dimensions here has meaning only in relation to some system of defining the position of a point. Yet there is a reason for the special predilection for the conception of a three dimensional space, and that is to be found, in ultimate analysis, in the constitution of our physical frame. If we stand erect, with the arms extended horizontally sideways, then the perpendicular axis from head to foot, the axis through the arms, and the axis parallel to the direction in which the eyes look, form a system comparable to that of the three lines of intersection formed by the placing of the walls of a room, and that meet in a corner of the room.

There is, therefore, nothing too recondite in the conception of four dimensions, including Time for moving bodies, as Lagrange with his lucid intellect perceived it; but lately a whole school of philosophers, misled by the manner of expression of Einstein, have been torturing their brains trying to imagine what a space of four dimensions may be when time is taken to be a "dimension" of the same quality as those of space. Finding themselves confronted with impenetrable mysteries, they opine that they must be in the presence of profound philosophical truths lurking behind the veil, whereas they are simply enjoying a much more ordinary experience—confusion of thought arising from vague definitions and loose reasoning.

It is necessary to mention this, for Einstein's Theory of Relativity is believed to have a deep ethical significance. In an address to the Académie des Sciences, October, 1921, Paul Painlevé dealt in a masterly way with Einstein's theory. His chapter on Mechanics in "De la Méthode dans les Sciences" should also be consulted.

by appropriate operations upon them we may be led, by translating into spatial terms, to discover properties of the figures.

That is the great advantage of the system of Descartes. He has enabled us to use for the purpose of geometry the valuable system of algebra which had been developed independently. Subsequently when the infinitesimal calculus, which is a developed form of algebra, was invented or, as Hermite would prefer to call it, discovered, this instrument also became available.

Returning now to the question of optics, it is evident that since many of the phenomena are associated with regular and symmetrical figures, that this calculus, which we have seen applied to geometry, will serve to solve problems in optics also.

As a matter of fact, it was so applied, and with brilliant results, in the hands of Newton, who favoured the corpuscular theory of light, and in those of Huyghens, and subsequently of Fresnel and Young, who developed the undulatory theory.

The Survey of Science. Illustrations from History of Wireless Telegraphy

Now let us look back at the beginnings of another science which we will eventually link on to that of light. The ancients knew that if a piece of amber were rubbed it would attract threads of silk or small pieces of feather. These efforts were referred to as electrical, the Greek word for amber being elektron.

They also knew that a certain kind of ironstone found in Magnesia had the property of attracting small particles of iron. This observation was the foundation of the science of magnetism.

Both electricity and magnetism have played so important a part in the development of our modern civilization that it is with a feeling of wonder that we contemplate the petty origins of the vast effects produced.

It may be said, therefore, that where we have the manifestation of a force in nature we have the clue that will lead us to the control of vast powers, for nature never operates by chance, and the magazine in which her forces are stored is enormous. The first glimpses into the secrets of

nature are wonder-filling now, in a new sense, and they teach us that even the means of wielding great instruments of force in the material world flow, not from the exercise of brute strength, but from the subtle play of the intellect.

This, it may be noted, is a valuable result in regard to the task of drawing up a scale of ethical values of human faculties.

The observations mentioned remained barren for centuries. Even the great Greeks were not alive to their importance, for the main deficiency of their science was that of experimentation. They despised the mechanical arts, and on account of this habit of mind, which had an ethical aspect, they failed to turn their ingenuity to the best account in invention, and so they cut themselves off from the advantage of such observation of precise measurements as appropriate instruments afford.

It had, however, been observed at an early date that a needle-shaped piece of magnetic ore tended to place itself in a direction approximately north and south, and that a needle-shaped piece of iron, when close to it in the same direction, became in turn magnetic.

The Chinese appear to have been the first people to have used these properties in the mariner's compass, and here we see again the importance in the development of civilization of even a rudimentary knowledge of natural phenomena.

The first man who studied magnetism extensively appears to have been Dr. Gilbert, the physician of Queen Elizabeth. Not till comparatively recent times do we get even any suggestion to make practical use of electricity. In 1746 the effects of the Leyden jar were accidentally discovered, and in 1753 Stephen Gray and Granville Wheeler proposed to utilize this jar for the transmission of signals.

When later the discoveries of Galvani and Volta had given great impetus to electrical research, telegraphy became possible, but not yet very practical.

Oersted observed while demonstrating in class that the passage of a current of electricity caused a suspended magnet to vibrate.¹ Subsequently, Laplace and Ampère proposed to

¹ This discovery of Hans Christian Oersted was published in a tract dated July 21, 1820.

utilize this effect in signalling, and Tribouillet and Schilling actually constructed telegraphs on the principle indicated.

The next step was Faraday's observation that a current became induced in a closed circuit when a magnet was brought near. Gauss and Weber both devised improved forms of telegraphy, and Steinheil constructed in 1838 a telegraph that worked satisfactorily. The first telegraphs had a complete wire circuit, but Gauss suggested that the earth might replace the return wire, and he also surmised that eventually the remaining part of the wire might be rendered unnecessary. Here we have the germ of wireless telegraphy.

The accidental experiment of Oersted, and later the researches of Faraday, had shown the connexion between electricity and magnetism. The theoretical interpretation of certain of Faraday's results was supplied by Clerk Maxwell by means of mathematical formulæ deduced from a few elementary assumptions. Meanwhile a system of electrostatic units had been established, side by side with a system of electro-magnetic units. Evidently some relation existed between the two, and Clerk Maxwell found that in making the transition the electro-magnetic unit contained v electrostatic units, where v represented the velocity of light.

This coincidence could not well have been merely accidental, and as he reflected upon it Maxwell received the suggestion that light and electricity were but two different manifestations of the same kind of energy, the difference between them depending on the difference of length of the ethereal waves.

Since Maxwell's time it may here be said that every fresh advance in the knowledge of such vibrations indicates that there is a very extensive scale of undulations, extending on the supra-red side of our spectrum to giant waves of miles in length, to waves on the ultra-violet almost inconceivably shorter than the shortest visual waves. Our visual organs are, indeed, little detectors suspended in space, which serve to reveal to us directly a portion, but only a limited portion, of the vibrations of the ether that sweep about us.

The conclusions of Clerk Maxwell permitted the application to electricity of the apparatus of mathematics which had been elaborated in the course of study of light.

The next step of importance was that of Hertz, the

German physicist, who, following a suggestion of Helmholtz, sought to obtain with electrical waves results analogous to those obtained from light waves, such as reflection, refraction, and interference.

Hertz succeeded brilliantly. In the course of his experiments he had devised, or rather adapted, a simple means of projecting the electrical disturbance into space.

Here then were the electrical undulations produced at will, and comparable to the undulations of light. All that we required was an electrical eye to detect them.

That electrical detector, the forerunner of many others, was discovered by Branly, this being another great result following what may be called, though not quite correctly, an accidental observation. Branly was not at that moment seeking for a detector in order to develop wireless telegraphy, but he was experimenting and reaching results that appeared to him noteworthy. He observed that whenever electrical vibrations were sent into space, as, for example, by the discharge of a Leyden jar, the electrical resistance of a little tube of iron filings was altered.

This gave a means of detecting the presence of such vibrations, for the change of resistance could be made evident in a great variety of ways. For example, according as the resistance was diminished or increased, the current in the whole circuit of which the tube of iron filings was a part would be increased or diminished, and hence the attraction of a spiral of this circuit on a magnet attached to any movable part of an apparatus would be increased or diminished. And since the electrical vibrations could be produced at will, we would be able in this way to signal. We have, in fact, arrived at wireless telegraphy.

Branly, it is true, produced the effects at the distance only of a few yards, but enough had been done to inspire Marconi to seek to develop the system, and to obtain signals at longer and longer distances.

Marconi was aided in his work by the calculations of Lodge and Fleming, and finally the genius of Tesla, who invented powerful means of increasing the energy of the electrical waves, made the whole scheme practicable. Since then a great variety of work has been done, and intensive study of every part of the apparatus has produced a

mechanism of extraordinarily great efficiency and usefulness.

In reviewing this rapid sketch of the development of wireless telegraphy, traced from the days of the Greeks and the early speculations of science, we find the co-operation of the minds of great thinkers in many countries, each one bringing his quota and adding his link to the chain without necessarily perceiving the full value of the work in reference to the final accomplishment.

What then is the relation of this discussion to a system of ethics?

There are many modes in which the exploration of nature may be shown to have a deep ethical significance.

It would indeed be sufficient, in default of all else, to insist on the development of our own faculties, but there are others perhaps even more significant.

This kind of exercise of tracing out the successive links of the chain of development of a branch of science such as I have shown in regard to wireless I could carry out—and, in fact, in another place I have done so—in regard to all the great sciences in their broad, general aspects; and I have traced out the consequences of these sciences, and particularly those practical corollaries which are represented in great material works—telegraph systems, railways, steam engines, oil engines, telescopes, microscopes, and the rest.

Further I have sought to discover what are the chief features wherein our civilization differs from that of the Greeks, and particularly the forms in which it is superior, for there are many in which it is inferior; and I find that these are all based on these practical corollaries of science, and particularly on the great material systems that represent those corollaries, and on the conditions and modes of life which have followed again as consequences of the adoption of such systems.

In this sense then science is the “woof of civilization”; that is to say, it lays the foundation on which the pattern is superimposed and coloured by all the incidents of social life. But science is the systematic interpretation of the phenomena of nature in such a manner as to enable us to understand to a certain degree their sequences, and accordingly to be able in some instances to predict them.

When we have traced the origin of the main sciences which in their applications have resulted in great human works, huge bridges, magnificent ships, even the most terrible engines of destruction, we find, on the one hand, nature, with her inevitable, never-failing precision and constancy, and on the other the subtle play of a human intellect endeavouring to register and to co-ordinate the happenings of the external world as it knows them by virtue of subjective impressions.¹

One of the exercises of a scientific mind which I found most fertile in results is that of generalization; that is to say, separating the essential from the accidental, and seeing in this way the relation between objects which at first sight might seem unconnected and remote.

It was a feat of generalization, for instance, in the mind of Maxwell, and a great leap of thought, to perceive the connexion between light and electricity.

It was another feat of generalization to perceive that such a phenomenon as interference was not restricted to light, but was an incident of vibrations of every kind.

It is also observable in this history of science that the co-operation between thinkers need not necessarily be conscious in order to result in great work; it may need the exercise of another great mind to bring together results from two different sources and to co-ordinate them.

Then again we may remark that in regard to the interpretation of nature, and even in view of obtaining great tangible and visible results, there is no distinction between practical and unpractical speculations and researches, if only these researches be directed to the understanding of movements in nature.

Observations that to some people would appear idle and trivial become in the mind of a Descartes the first step towards devising an instrument of investigation of great power. Without the Cartesian co-ordinates, or something equivalent,

¹ In the chapter on Externality in "Psychology: A New System," I have shown that keeping within the principle of Idealism, and tracing out by the most rigorous argument the manner of our acquisition of knowledge of the world, we may arrive at the most complete sense of objectivity; so that henceforward we may conveniently speak in terms of this objectivity.

we could never have had wireless telegraphy, for we should not have had the mathematical apparatus on which the researches of Maxwell and Hertz depended.

It may be said generally that no exercise of the faculty of thought, the most recondite, airy, and apparently immaterial, is ever lost if only it be related to the discovery of a truth in nature, in the widest sense; and there is no truth discovered by subtle speculations that does not eventually redound in the great material works that strike the imagination of the people.

Standards of Value Derived from Study of Science

There is something fascinating in tracing the course of realization from the subtle probings and questionings of an engineer's mind, dealing with the delicate instrument of the calculus, and thence onward to the realization of his dream in the vast bridge which gains fame for its massive size and giant strength. The great feat has already been accomplished in the scientific imagination; that is the one irreplaceable and inimitable work; all the other successive steps of realization may be carried out by other minds. In this respect, therefore, and within the scope of this observation, we must call them inferior. By this means then we win out another standard for adjusting ethical values.

Let us now cast a look upon the argument of utility. That is an argument which is immediately convincing in most companies, and yet, without underrating utility, it seems to me one of the lowest in the whole category of supports to science.

Utility is not itself a final motive, for we must ask: Useful for what?

The question as to the utility of the study of organic chemistry might be answered satisfactorily to some minds by saying that it enables us to brew good beer.

I have heard at a meeting in London of a Society for the Promotion of Science a discourse delivered, in which the great argument in favour of chemistry was that it enabled us to dominate the world's markets in soap. The inquiry might be pressed still further as to the utility of soap. The reply is obvious in regard to the cleansing qualities of this useful adjunct of civilization, but that, I think, was only

part of the conception that gave the impetus to the eulogy of science. For in the individual case a comparatively small amount of soap suffices even for the most exigent demands of personal propriety. But soap produced in colossal quantities means colossal wealth, and wealth gives power at least over most of the sources of a purely material enjoyment, though very little over those that interest the affections or make demands on the intellect. Hence, on this argument, science is useful as the handmaiden of Mammon.

When these practical men, or even philosophers of the school of Hume and Adam Smith, or later of Bentham and the Mills, in fact all those classed as Utilitarians, urge their doctrine of utility, I feel a movement of revolt, not that I disagree with their notions of utility, but because I think that that doctrine inadequately represents the whole position. They modify that principle, in some degree, by insisting on the higher utility of things of intellectual regard; but if they make utility the standard in itself, they have no right, any more than we found with the Epicureans, to impress all their mere tastes and predilections on others.

Utility can never be a standard, for utility implies a service, and if it have no sanction beyond that of the service, then the object for which that service is rendered is higher. There is something almost of moral defeasance in the attitude of these philosophers, who give themselves the air of recommending their philosophy by pandering to a lower morality and a lower intelligence.

There was no pretence, and no concession to an alien opinion, in the view of the great industrial magnate, that science must be patronized because it helped to produce soap, for soap represented an element of that commerce whose movements produce the main part of the activity and life of the nation.

The question of utility becomes thrown back to that of the utility of money, and by pressing the analysis determinedly we infallibly come to objects of sensual enjoyment, or to the indulgence of those states of mind in which the pleasure is derived from honorific distinctions, the ceremonials attaching thereto, and the accessory satisfaction of excluding others from these advantages.

It is possible in this way to come to low motives; sensual

on the one hand, and on the other dependent on ideals of an unintellectual and unelevated character.

It is true that eventually we shall find that in dealing with all secondary motives, which really make the greater part of the driving force of our actual lives, we must refer them to great primal impulses of life of sufficient strength to carry on the whole play of activity.

Therefore I do not join with those who seek to form a morality which either ignores the great passions, even sensual passions, or erects a kind of ideal in opposition to them. I say we must look at all that steadily, and with vision undisturbed, but that we must regard it in the total perspective. But when I see the actual outcome in a life of what is called enjoyment, or in the snuffings or wallowings of the petty sensualities held out as lures to keep society in excitation, then I feel a direct movement of sheer disgust, and I cry : That is not the end of life, nor the meaning of life !

That motive of utility to something else, whether of destruction or the satisfaction of animal passions, is neither the incentive nor the justification of science.

I am reminded of one of those stories of the old Greeks which have come down to us invested with the poetry and wistful beauty of legends and gifted with the wisdom of parables. Thales, one of the most famous of the early students of nature, was reproached with neglecting for far-off things those that were nearer and more important. In order therefore to give a lesson to his countrymen and to meet the reproach, such as is heard nowadays, that a man of science must necessarily be deficient in the higher qualities that enable others to make money or to shine in the political arena, Thales turned aside from his researches for a while and bought up all the olives in Crete.

He then created what in the United States is called a "corner" in these products, and showed how by holding up the price he could have ruined his competitors in business and enriched himself. Thales, rightly judging that these were low pursuits which only employed an inferior intellectual part, disdained to profit by this venture, but used it only to drive home his lesson.

The series of men of little selfish ambitions pass away, the men whose religion is a swinish indulgence, the men

whose souls are distracted and corrupted by the excitements and the little gains of mere politics, these have passed away and are forgotten ; but the work of Thales tells in the civilization of to-day, for it laid the foundation on which successive generations of thinkers have built.

Thus, since the principles of ethics must be general, that is to say, refer not to the personal advantage of any man or set of men, but to humanity, we find in this way that, tested even by the standards of material strength, the work of Thales is of a quality higher than that of those who derided him for the remoteness of his aims.

I turn from the arguments of the utility of science, such as are almost the only pleas ever uttered in Parliament in support of scientific research, to those of a book, "Religio Chemicæ," which, though written by one¹ who did not become famous in the actual field of research, breathes with the true spirit of science.

The lures and the rewards are not those of another and lower sphere, but in the glory of research itself, in the satisfaction of natural curiosity, in the play of high faculties, in the wonder of new discoveries, and in the fascination and mysterious awe with which at times, as if standing "on a peak in Darien," we behold the revelation of mighty worlds of agencies, powers, and purposes, and fates, into which we have been permitted to enter.

This is not an overstrung view of the function of thought ; it is as natural as that of the pleasure of eating and drinking, and of a subtler kind and greater scope. Ultimately it rests on foundations as deep as those of our own being.

We are so constituted that the exercise of natural functions gives pleasure. That is in the very nature of things, and it probably rests on the manner in which our physical constitution is built up of myriads of organic beings each of which seeks its full development, and in which necessarily, for that is a condition of life, the attraction must be towards health-giving resources.

The Appetite for Thought

The appetite for thought is just as natural and as healthful as the appetite for food ; but whereas millions are

¹ George Wilson. His book was published posthumously by his wife.

carrying on the work of devouring and digesting food and leaving the civilization of the world no further advanced than they found it, few are carrying on the work of high thought; yet this is all that tells finally in the advancement of the race.

We find in the actual record of history examples of men who in the pursuit of science for its own sake have sacrificed material gain, and even the esteem of their fellow-citizens, and yet have found in science a high spiritual reward and consolation.

When Darwin first undertook the work of his life he was a young sportsman, fond of hunting and shooting; but as the *Beagle* progressed he found himself more and more engrossed and fascinated, not by the killing of animals, but by the observation of their modes of life, of the mysterious conditions under which that life was carried on and perpetuated.

William Herschel, the great astronomer, was a member of a German band when he first began to conceive a scientific interest in the heavens. Nothing, at first sight, seems more remote from great work in astronomy than that of performing in an orchestra. The love of art here, too, operates in a manner certainly more intellectually attractive than that of the lust for slaughter of the sportsman; yet urged by no other stimulus than the feeling of the immense interest of the search itself, Herschel with extraordinary patience first fabricated a reflecting telescope, and then using it with skill discovered a new planet.¹

Copernicus, feeling with his dying hands his book which recorded the results of his high speculations; Bruno perishing in the flames because he would not renounce the truths that science had taught him; Galileo sending out in invisible wings the thoughts that quicken our life to-day, and yet suffering ignominy and imprisonment at the hands of malicious fools; Descartes hiding himself in Holland so as to be free from the distractions that might interrupt his studies; Scheele living in poverty while making cardinal discoveries in chemistry; Evariste Galois, dying at twenty-one, yet leaving almost as his last solemn act an indication of the

¹ The seventh planet, Uranus, seventy times as large as the earth, discovered in 1781.

line of thought of his high conceptions in mathematics ; these men have all helped to raise the standard of our life and to add glory to the achievements of the human race ; but they were, none of them, impelled by a calculation of utility, nor stimulated by the hope of rewards that redounded in lower enjoyments.

All this may seem to some to be an overwrought argument to convince us that science has its merits ; yet when we view the actual community in which we live and behold the hierarchy of greatness in the manner consecrated by state forms and precedence, this argument so far from forcing an open door is much more likely to fail in effectiveness against the forces of the established order of false standards, ignorance, superstition, and custom.

No man of science has sat by virtue of his science in Parliament, and those who have been able on other considerations to rise to positions where their counsels might tell in the affairs of the nation have usually proved valueless, warped by the false twists of character and intellect that have helped them to success.

I like rather the story I heard from Professor Dastre, a pupil of Claude Bernard, the great physiologist. It appears that Wurtz on one occasion wishing to show some chyle to his class found that none had been supplied for the demonstration ; he thereupon prepared a concoction which in colour and consistence resembled chyle, and showed that to the students.

Claude Bernard declared vehemently that such an action was wrong. "I could never have done it," he said. "From every quarter of the room I would have felt accusing fingers pointing at me, and voices crying : ' You lie ! You lie ! ' "

That is the veritable spirit of science, the main object of which is not utility, expediency, or material comfort or delights, but knowledge in itself, the satisfaction of the highest need of the human being that makes itself manifest when lower motives become less insistent.

Science would have certainly a sufficient warrant in its utility, if that were the only test, for the outcome in utility of the researches pursued for a higher object is not accidental ; it arises from the very structure of the universe. As our knowledge increases, and as we systematize and

generalize the consequences that flow from certain great truths become apparent. The immense diversity of nature is due to the diversity of objects operating in accordance with a few simple "laws." The diversity of the objects again is due to the diversity of arrangement of the molecules of a few simple bodies, or elements. The latest researches of physics and of chemistry—for the sciences coalesce—tend to show that these elements themselves are all built up from the atoms of one substance, hydrogen, arranged in varying manners and associated in various ways with electrons.

Finally, then, we arrive at a contemplation of an immense and varied display being constructed on a simple architectural plan, and we foresee that all the "laws" we have discovered are partial manifestations of deeper laws leading to conceptions of greater simplicity and harmony. It was considerations of this kind—the sense of great effects being developed from a simple principle or formula—that caused Plato to say: God geometrizes.

Thus it happens that when a discovery is made in regard to natural phenomena the applications are thousandfold; and since man's struggle is with the forces of nature, and he must protect himself against the conditions when these are unfavourable, and at other times adapt these forces to his own advantage, it follows that results of utility arise from any new discovery of the manner in which nature works.

In place finally of the conception of a dumb nature displaying brutal material effects, contrary to the spiritual nature of man, we gain the impression rather of a nature leading us by the hand from point to point, from conquest to conquest, never refusing a reply, always giving the answer consistent with all the others, always inevitable, profound, and helpful.

That we disregard the lessons is due to the influence of lower passions than those of the zest of thought, and here by this fact we find a standard by which we may judge of progress.

When we regard the annals of the human race from this point of view we have the sense of a wonderful epic far transcending that of the wanderings in the desert of the Israelites, or of Homer's "Odyssey," and we see that the

one guide through the chaos and darkness is the steady light of Truth.

Once again there is in this manner of regard something higher, more powerful, and greater than that in which science is regarded as a servitor to pomps, indulgences, and lower passions.

At times also when we find ourselves guided by the truths of science step by step as on a path between mountain cliffs, there flashes out a sense that this guidance, however wayward according to our aptitude to receive impressions, is inevitable, and that it responds to something still beyond which contains it all, and which we may call Purpose. Here ethics merges at its highest point into the veritable conception of religion.

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We may pause here to sum up briefly, and to indicate the next step. Striking down to the deepest foundations we find Truth as a constant guide. Adopting this as one of the principles of our system, we find that though fundamental, it reaches almost at once to consequences of great importance. As an inevitable corollary the principle leads to the development of science, and when this position is gained we will find that it gives us secondary standards and develops into institutions and other means of governing social activities.

That aspect of the matter will not be taken at this point, for now I wish to consider with some particular attention our second fundamental principle : Energy.

CHAPTER III

ENERGY

ENERGY means the power of doing work, and work is the evidence, if not the purpose, of life. Therefore energy should be one of the standards by which we measure the value of life, and hence one of the Principles of Ethics.

It seems at first almost superfluous to insist upon the value of energy; yet if we look at the doctrines of ethics which have had greatest popularity, those which have penetrated most easily among the multitude, and those which have been delivered from on high by academic thinkers, the tendency has been less to extol energy than to preach peace, ease, contentment, or quietude.

Peace and content are not incompatible with energy, but it would appear so in the manner in which the moralists have conceived these blessed states. Therefore it is necessary rather to probe the matter to the depths than merely to assume energy as a principle, because when directly presented it would generally be found acceptable.

In the physical world, as far as we can form standards, energy, the power of doing work, is the test of importance. The difference between a rushlight and the sun, we have remarked, is at base a matter of energy. The interest to us of steam, or electricity, or the explosive force of gunpowder, is that of accomplishing something for us by means of energy. The whole activity of the industrial world rests on coal, or oil, or some other fuel of the kind, and the value of coal is measured by its energy. Scientific men are becoming concerned about the approaching shortage of coal and oil, and they are searching for other sources of energy. Experiments with radium have suggested such a source in the breaking up of the atom, and obscure and difficult though the problem be, it is attracting the serious attention of thinkers. When that problem has been solved the value of coal will have

greatly diminished, together with its significance for the strength of nations.

When from the material world we proceed to simple organisms we find that the value of the work which each accomplishes may be measured by its energy. Favourable conditions of life favour energy, so that energy and development go together.

Whether we deny consciousness to these organisms, or admit it, or whether we consider it necessary to introduce "vitalism" to explain physiological changes, it is certain that a great proportion of the reactions that sustain life in the organism depend on chemical and physical interchanges. It is the energy contained in these which supplies eventually the energy of the organism. In considering the energy of such an organism we come down to the deepest facts of the world about us.

But all animals are built up by multitudes of such organisms held together so that their work may be adjusted and co-ordinated. The final adjustment of the individual towards the external world, both in its organic side and in regard to the in-organic side, rests ultimately on these elementary forms.

The energy of the individual therefore depends on that of the constituent organisms and on their proper adjustments. This when traced out finally resolves itself into a question of health in regard to each faculty.

Certainly there is a competition continually going on for the control of the activities of the body, as, for example, between the physical and the mental development of the man.

There is nothing incompatible absolutely in the nature of things between high physical and high mental development; but when we consider the actual conditions of educating the physical and mental faculties, we see that the factor of time alone is decisive. It would be extraordinarily difficult for a man to be a great game hunter and a great astronomer at the same time, for the training and exercise to become proficient in hunting would not mean merely the diversion of the man's energy into special channels, but particularly it would imply absorption of time which could not be regained.

We will subsequently therefore require to consider a

scale of values, but in any case the test of any of the faculties is energy, and the condition again is health. It may be said that many a weak or even invalid man has shown great mental energy, from Aesop to Pope; but that particular part of the brain most interested in the form of mental energy displayed was healthy and well nourished. The obverse may be better seen. Many a half-witted individual has been endowed with great muscular strength. That part of his apparatus was working under conditions that implied high development, and that implied in turn nutriment, exercise, and in a general way health in those parts.

When we consider actual examples from history of displays of great energy, our minds generally revert to the great conquerors, though I think this is due to the false values set upon human acts in the histories written without a true ethical sense. Alexander, Hannibal, Cæsar, Napoleon, these are great types of energy.

We read of the exploits of these men through the mist of history which distorts their appearance and often gives a false account of the cause from which events flow. I have therefore desired to form an estimate of these in regard to their physical, mental and moral constitutions, so as to obtain if possible a standard of comparison between ancient and modern men.

Viewed in this way we will find each of these men, a great exemplar of energy in his way, deficient in some of the important factors on which energy depends.

Napoleon Bonaparte was short in stature, though he descended from families on both sides who were well grown and well proportioned. His deficiency of height was due to the shortness of his legs, and this appears to have been due to defective nutrition while he was still growing.

In his early years he was extremely thin, and of a sallow, unhealthy complexion. At Toulon he contracted a skin disease, and in his first Italian campaign, when his personal qualities shone with great brilliancy, he was tuberculous.¹

Napoleon was of a highly strung, nervous temperament.

¹ I am indebted for this fact to the research of Dr. Auguste Cabanès, who in his studies of history has made use of those important documents—medical prescriptions.

Excess of emotion sometimes produced vomiting fits, and during the course of his dramatic career he was often moved to tears. At Waterloo he was not at his best, physically, as he had passed the previous night without sleep, and he was also suffering from hæmorrhoids, which made riding uncomfortable. He died of cancer, from which his father had also died, as also his son, who suffered from an affection of the lungs in which tuberculosis was complicated by cancer.

At Waterloo already Napoleon, though not yet forty-six, was suffering from physical degeneracy. At St. Helena he remarked on more than one occasion to Las Cases: "It was not my body, it was my soul that was of iron."

I have dwelt on these particulars, not for the satisfaction of finding a great man faulty, but rather to show how even on a rather unpromising foundation a character of great energy may be built.

The tendency of history is rather to create a legend and to suggest that the works or the feats of famous men have been due to qualities denied to the common run of humanity. Hence arises discouragement amongst those who are conscious of their personal deficiencies; it is a far better lesson to show that in spite of shortcomings a man who bends his mind to great endeavours may accomplish something of which the record will live.

In spite of a faulty physique Napoleon gave some fine examples of physical endurance, whether in the burning sands of Egypt, or in galloping from Valladolid to Burgos, or sleighing on the steppes of Russia; while in duties which, though not putting so great a strain on the physical powers yet required a strong fund of physical energy, for example, in his ceaseless vigilance and attention to detail in administration, he won the admiration of all who knew him. His capacity for work was what especially appealed to Gladstone, and this tribute is all the higher when Gladstone's own energy and industry in affairs is taken into account.

What, then, was the secret of Napoleon's energy? In the first place, though he suffered from many deficiencies, yet relatively to the average of humanity he was not ill-endowed physically. The vital organs were all sound, except for an abnormality of the kidneys, and for the condition of the stomach, when at length attacked by cancer.

Now nature, though not an indulgent mother, is seldom niggardly in her physical gifts, and if a child be viable at all it will be found that he has a reserve and excess of strength which is capable of being highly developed by care and judicious exercise.

Napoleon was never self-indulgent, except perhaps for a brief period during his power as Emperor. He had never trained himself particularly in physical exercises, but on the other hand he had never over-strained his physique in athletic feats.

His habits and his morale sustained him; and this morale was in part derived from his ancestry, but also in part developed by his education and by the constant guidance of high ideals that he had set before his mind.

His mental capacity was high, though not of the highest order; it had been diverted from the great purposes of life into those channels where the effects produced were more spectacular than enduring, and where the play of a fine intellect is less in evidence than the powers of pleasing, mystifying, or commanding the populace.

Yet viewed throughout the whole range of history I find no one amongst the conquerors or the strong men in politics who equals him in the variety of his interests or in the masculine work of a comprehensive mind.

At St. Helena, where to a life of too violent activity succeeded a period of calm and reflection, his intellect seemed to have reached its best phase, and there are few men who have been immersed in affairs whose judgments have so wide a range and such just balance, and whose deep thoughts are so well expressed in that form of aphorism which gives evidence of a habit of generalization.

Yet his life was in great part wasted and diverted by low ambitions into petty and infertile channels. He seems to me not the finest type of humanity of whom history gives record, but rather the last of the great barbaric kings.

Cæsar is another whom we may accept as a model of energy. The very name, energy, was a perpetual stimulus to him, and he held up as an ideal a life of high activity.

Cæsar was tall and of fair build, but he was far from being a good specimen physically. He was subject to epileptic fits, he was prematurely bald, and even as a com-

paratively young man he was worn down by a life of sensual pleasure.

The graven images of Cæsar with which we are most familiar, as for example, the bust now in the British Museum, represents a hard, irresponsible man, of granite character.

This is certainly not a fair representation of the real Cæsar. He was stern, even cruel at times, but his nature was easy and plastic, and his manner attractive and conciliatory far beyond that of most Romans of his day. In activity of mind and in the easy play of intellect he most resembles Napoleon, and he resembles him also in the manner in which, even by jocularly, he could win the personal affection of his soldiers.¹

Like Napoleon, too, he was inspired by an ideal, which though liable to be merged in personal ambitions, yet brought him into a moral sphere far removed from indulgence, or the trivial things of vanity. As in the case of Napoleon also this cast of mind was developed and nourished by education and by a noble emulation of the great examples of history.

Recently I read his Commentaries again in order to endeavour to get a scale of accomplishment so that I could assess the degree of superiority, if any, of Cæsar above the ordinary type of Cabinet Ministers I had known in Parliament.

I found, and here again the parallel is close with Napoleon, that his explanations of situations are always simple and clear, and that the reasons he gives for any particular action are such as appeal to common sense. Then, the next step of his recital is to say simply and naturally that Cæsar proceeded to do what he had decided to do. Here in this simple memoir is revealed the true superiority of Cæsar.

In our modern life, especially in affairs, our great men shrink from those clear and decisive actions, where they must depend on their own intellects and where they must face the results.

The first movement with most is to find some means of off-shouldering responsibility, and of discovering some refuge from failure. Between two courses they do not ask

¹ These characteristics of Cæsar are well shown in a bust in the Pitti Palace, in Florence, which has all the appearance of having been taken from life,

which is right, or even which is indicated from high political motives, but which is the more recommended, or the more popular, or the more easy to escape from. Their minds move in an atmosphere of current hypocrisies, and various of their moral lapses are dignified with epithets which make them regarded as virtues. These men hold their positions, but they accomplish nothing. They have neither foresight, nor deep reflection; nor minds of scientific cast, nor boldness of character; nor energy of action. For the lack of these qualities they are considered safe men, and they are highly esteemed for that reason.

When in the movement of events some unavoidable or tragic contingency on a large scale appears before their eyes, their insufficiency is made manifest in the most ghastly light by the slaughter and the ruin as of a disastrous war. In such a crisis they are incapable of clear vision or of bold, decisive strokes of action; they scramble, deceive, cover their own deficiencies, dissimulate responsibilities, and hope for some turn of fortune, or some means of at length muddling to victory.

Of Hannibal, the next of our great historic examples of energy, we know less than of the other two.

He seems to have been, relatively to his time, better trained and more decisively inured to the soldier's life than either of the others. He was also better endowed physically, though far from perfection in that respect. His mind was alert to matters of intellect, and he was led on by a great, if not in all respects a high, ideal.

Alexander, the most barbaric and the least enlightened of all, yet seems to me flamed through and through with a divine spirit of energy, and to have been led on, even in half-mad adventures, by a high though vague ideal.

We read in history of the feats of such men, and as the whole scope of life was more restricted in their day, their exploits fill the canvas and bulk largely in the whole life of the time.

Modern life is much more complex. It involves the activities and mutual dependence of a far greater number and states of comparable importance; the preparations for this diverse and exacting life are more arduous. For all these reasons, I seek again, so as not to be carried

away by the mere fame of the ancients, to find a scale of comparison.

Discussion of Energy on the Physical Side

This search has induced me to look at the feats of the men they led or with whom they are associated, for then we can form some sort of test. The result of researches of the sort has convinced me that in physique, in the training for great athletic exploits, and in the mental characteristic necessary to triumph in arduous ordeals, there are men of the present, whatever be the case with the ordinary run of humanity at both epochs, who are superior to those who adorned the best days of Greece or of Rome.

It is difficult to obtain grounds of comparison, for there were no precise time recorders in the days of the Olympic games, and even ordinary measurements were carried out with little concern for accuracy. Yet when we find movements of large bodies of men fairly well recorded, and where we read of the preparations in the way of training, and study the ordinances of the games, and find animated descriptions of great feats, there arises a general impression which is not without value.

In the first place, although the period of the Olympic games extended over centuries, there is no great variety in these exercises. There were only two foot-races—a short race of less than two hundred yards, and a long race of about three miles. There were no hurdle races nor steeple-chases. In leaping there was only the long jump. Neither the high jump nor vaulting with the pole was practised, nor were the standing long jump, nor the three jumps, nor the hop, step and jump.

Here already we have a contrast, not favourable to the Greeks, with the great variety and interest of our own running and jumping sports. Between a fifty yards dash and a twenty or forty miles race, or a six-days' contest, there is room for a dozen different champions to emerge, each at his own favourite distance, while the Greeks had only two.

The competitors in the Greek games ran with bare feet, over a dusty course, and the description of the start, when their trainers held them in slips and exhorted them with prayers to the gods to do their best to shed lustre on their

native towns, suggests rather a stage spectacle than the whirling speed of a sprint race. The athletes have been described by the poets of the day as swinging their arms and encouraging themselves by loud shouts; but these exercises again are rather to be associated with worthy aspirations than with the splendid style of great runners.

Corresponding to the great variety of our ball games, the Greeks had but a few spheristic exercises of a somewhat rudimentary kind. Similarly in the accounts of the wrestling, we do not gain the impression of the great skill, the variety of the holds, the resources of the wrestlers of our time.

We have several accounts of pugilistic encounters, but though some of them have been written by their great poets, they fail to give even an inkling of those impressions of speed and skill and resource, of the fire of the rapid, fierce attacks, that we gain from the spectacle of a boxing bout between two champions of the present day. Greek pugilism appears to have been tame except for the brutality of the encounter, for the fist was encased in the cestus made of strips of hide studded with brass bosses. This barbarous adjunct in itself reveals the deficiency of the pugilists' skill and strength.

The preparation and the dietary of the athletes were both faulty, and the tendency was to produce men of statuesque appearance but deficient in energy and skill.¹

The Romans had little of the exuberance of the Greeks, either in the physical or mental spheres, and they had few games, but we have the records of the movements of troops and of the conduct of campaigns.

Although determined and ferocious warriors, they avoided winter campaigns. They were subject to panics, and to the evil influences of superstitions, and there was a certain percentage of loss at which the discipline and morale of the legions began to waver. Cæsar himself describes his officers as so alarmed by the mere reports of the prowess of the Germans that they wept copiously, and proceeded to

¹I have discussed these questions in more detail in "Religio Athletæ." In the preparation for this book I tried to collect all the references in the classics which would afford any means of comparison between the Greek athletes and those of our day.

make their wills. It required all his strength of purpose as well as persuasive address to win them back to a courageous frame of mind.

Taking everything into account, I am inclined to think that the best troops of the present day would be found superior in physique, in endurance, or in energy to those of the palmy days of Rome.

One of the most striking of the differences between the modern and ancient soldiers is the far higher degree of education and general intelligence of the warriors of our day.

Education has not impaired the physique of the men, while it has given a greater balance and resilience of mind which enables the modern better to deal with an unexpected crisis. Even as amongst moderns, education, other things being equal, tends to steadiness and to energy. In the South African War it was the young men from the towns rather than the farmers from the backblocks, with their pristine health and strength, who proved to be the best fighters.

Another point on which the real superiority of moderns may be tested is that of length of life. This has dependence certainly on many conditions, such as those of personal and public hygiene, independent of the energy of the individual; but taking into account all factors of that kind, we shall find, I think, a residue which shows that there is a greater constitutional vitality amongst modern men than amongst the ancients.

In ancient history, and in mediæval history, we find also that men who have dominated affairs have risen very rapidly and at an early age to positions of command. In modern life such promotions become more and more difficult, not on account of any lack of ability or energy, but rather on account of the number of capable men who already occupy the posts, and also because of the complexity of the subjects that must be mastered in order to give the necessary qualification for ruling. It is only in exceptional circumstances, of war or revolution, or crises of great political peril, that men of exceptional endowment find their chance of rapid advancement, and in these cases it may happen that we dispense with the condition of mastery of the essentials required for good government.

The modern man, having to adjust his life to more numerous and more complex contingencies, must have a more highly developed and more sensitive nervous system. This is the cause of many weaknesses and failures due to overstrain, but it is evident, on a dispassionate view of the facts, that this greater sensitiveness of nervous constitution is compatible with greater physical energy, as well as greater mental power, than that of the ancients.

In discussing the question of energy on these lines, I am not losing sight of its application to ethics, though it is already evident that from all the considerations we shall here consider, a new conception of even the problems of ethics must arise. We shall find these problems less concerned than hitherto with the theological conceptions of sins and transgressions of various kinds, or with our mental states and appreciations. The whole question will be immersed in considerations of a far wider scope, including purely objective factors, and we shall often find that acts are ethically good or bad in themselves and according to these conditions, rather than as judged by our own, often false and sophisticated, sense of right and wrong.

The test of a system of ethics, it must be ever kept in mind, is its ultimate validity, and of any two systems that which, other things being equal, would assert its dominance and control of the other must be preferable. That is why cardinal importance must be attached to energy, and why it is necessary to consider the quality of energy, not as an entity bestowed on an individual, but as a manifestation which depends upon innumerable factors.

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We have considered energy in a mechanical sense, and then in regard to the physical qualities of the individual. But when we have regard to the total output of life, and this is the true measure of energy, we must consider the mental faculties of the individual, and also his relations to society and the reaction of that society upon his own development.

If from this point of view we consider the ancient Romans again, we shall find much to modify the admiration with which we regard their great achievements. Through-

out the whole course of their history they produced an extraordinarily small number of men, of their own race, of superior intellectual endowment. I say "of their own race" advisedly, because some of those who have adorned their literature have been aliens both to their blood and to their ethos. Horace, for instance, was the son of a freed man. Plautus was, if not the son of a slave, of obscure origin. Terence was of African origin, the son of a freed man. Virgil was of Celtic origin. Seneca came from Spain. Cicero and Catullus seem to have been scions of Latin stock, but both were diligent students of the great Greek classics.

There were certainly amongst them not merely a few examples, but a regular succession of men skilled in administration, and endowed with great executive ability. Julius Cæsar was one of the highest examples of that type, as well as one of the very few the play of whose mind seemed light and elastic enough to rise out of the conventional grooves of the Roman system, which had been fabricated less by the intelligent thought or design of any man or series of men, than by the pressure of interests, the accommodation, and co-operation of all the people.

Such systems of philosophy or ethical thought which they put forward derived their force less from any great luminosity of vision, or splendour of moral fervour, than from a sententious manner of expressing conformity with the established order of things. That order was excellent up to a certain point of development, and it is partly our gain and partly our disadvantage that our modern civilization, in many of its social and legal aspects, is formed on the plan of the old Roman system.

As the Roman Empire extended, embracing new peoples with new ideas, new ethical principles, new ambitions, the system was found to contain within itself the seeds of its dissolution. Gibbon, in his "Decline and Fall of the Roman Empire," discourses with a pleasing mixture of gravity and wit, and gives us many boldly drawn and impressive pictures of the long history of a remarkable people, but his analysis of the causes which led to the undoing and break-up of the Roman Empire is superficial and extraordinarily inadequate. He hardly touches on that deficiency of intellectual energy which is so significant in this relation,

not only for itself, but as a sign of the conditions that prevailed.

The matter might be rather summed up by saying that the Roman Empire began to perish, as every organism must perish, when the development of the central nervous system was found inadequate to supply the necessary stimuli of force and control to the component parts. Or, again, the case might be expressed in another way, by saying that any nation will fall where the form of government does not contain within itself the principle of expansion and adaptation to meet the new developments which arise.

Let us look for a moment at the intellectual achievements of the Romans, apart from their literature. Consider their science. Here they had again the advantage of the works of the Greeks, to which, nearly two thousand years later, we have linked on our modern developments. The Romans were not sufficiently intelligent even to profit by such lessons. Their output in pure science was miserably small.

Yet they prided themselves on being a practical people, and it was amongst them, more than any others of whom we have record, that energy was held in honour. Their very mottoes suggest it, and, so far, do them honour. Thus very were accustomed to say : To labour is to pray ; or again : Labour conquers all things.

Let us, therefore, judge them by the standard of material works. The Roman roads are famous, as, for instance, that of Watling Street, running from the South to the North of England. It is a monument of hard work and patience, but, on the other hand, it bears in itself the evidence of a people of crass brain power, working by rule of thumb, and on the principle of main strength and awkwardness. The simple principle of contouring their roads was unknown to them, and since we are drawing comparisons between their type of brain and those of greater enlightenment, it is fair to say that their system of transport was very inefficient.

On their Roman roads they transported with immense difficulty their military stores from the South to the North of England. A railway train accomplishes the journey in a few hours. It may be said that the comparison is not fair, that the Romans had no railway trains, and no means of building them. That is precisely the point which I wish to

bring out. No man seems to have arisen amongst them who ever lifted his mind seriously from their besotted worship of force. In place of questioning nature and winning out her secrets, these great strong men contented themselves with superstitions as puerile as abominable.

Thus it happened in the history of the world that, judged by their own standards of force and power, they have been easily surpassed by those whose minds they would have despised, and whose pursuits they would have regarded as a sign of degeneracy.

Here again we shall see a manner of winning out new standards, and the lesson will evidently be salutary, for even in this day notions are common and popular, and serve to make the ideals even of our greatest poets, which are no whit an advance on those by which the Romans perished.

The Romans built bridges. These bridges were massive and enduring, but they were of a simple type, depending for their construction less on any genius of design than on their great resources of labour. Their bridges were of small span and capable only of crossing comparatively small streams or straits. It never occurred to a Roman in his wildest dreams to build such a structure as the Forth Bridge, or the beautiful suspension bridge that connects Brooklyn with New York. Yet, here again, comparison is fair according to the standards of the Romans, and it condemns the Roman intellect.

We build nowadays large ships which cross the Atlantic in a few days, conveying the population of what in Cæsar's day might have been called a respectable town. The Romans, with all their adoration of strength, had a few sailing vessels and clumsy triremes which ventured but little out of sight of land. Principles employed in the construction of the ships of our day have not been exhausted in the production of the vessels which we have seen so far, and it is not impossible to imagine ships as much greater than the largest nowadays as these are greater than a Roman sailing boat.

I will not review the whole series of mechanical triumphs, including those, for instance, of electricity and chemistry, which we have to our credit. I mention them now only in order to insist on the lesson that all these vast mechanical results are not the product of men who thought in terms of

mere brute strength, but that, as we have already seen, and as we will find every time that we trace a great human work to its source, the one essential part in the whole series has been the free and subtle play of a superior mind.

We found that result in the discussion of the principle of truth, and we arrive at it once more in discussing that of energy, and we shall see that these two great principles work so together in unison that it might be said that in the deepest resort of things one implies the other.

The gospel of work has been preached by Carlyle and others, but it should rather be the gospel of accomplishment. Thus, when the so-called Cleopatra's Needle was set up in Egypt, it required hundreds of workmen to perform the labour involved; when it was set up on the Thames Embankment it required a machine, skilfully contrived, and some four workmen. Which of these was the higher accomplishment, not only in regard to that actual task, but in view of the development of the race?

To ask the question is to answer it.

If we fail to have in view the accomplishment of the task as the criterion we are apt to fall into the fault of posing, and of finding merit in our shortcomings.

"A pound of result is worth a ton of effort." These were the words of an American railway magnate, Huntingdon, who, although not a man of high mental calibre nor fine moral quality, achieved a good deal of useful work under the guidance of that excellent formula. Such a saying does not imply evasion of the task; on the contrary, it is necessary to have the work completed; but it indicates that there is no merit, but rather the reverse, in the waste of strength.

Think of this in terms of great spectacular feats which have sounded in the history of the world. In the expeditions in the Arctic and the Antarctic there had often been disasters followed by heroic endurance, and terminated by disappointment and cruel suffering.

Peary reached the North Pole and Amundsen reached the South Pole, both without loss of life; but they had not shirked the work, and they had achieved each a greater feat than those who had failed amid tragic circumstances.

If we were to make the suffering and the endurance the

criteria of greatness, then in our search for higher heroism we should deprive even the unfortunate explorers of the benefit of their foresight and intelligence and adaptability and skill. We should come back to barbarism and the march of the race would be retrograded.

Work in itself has no more title to glorification than expenditure. For the proper conservation of our energy, as for the solving of our affairs, we should never hesitate to produce work or expenditure when necessary, but we should economize in the outcome, so that the return may be proportionately as large as possible. Efficiency is the test of good construction of a machine; that is to say, the ratio of the work performed by a machine to the work expended upon it, as, for instance, by the fuel supplied.

When Carlyle, for example, found that his manuscript of the "French Revolution," which he had lent to John Stuart Mill to read, had been used as a firelighter by the servant, he did not bless the occasion which had thrown more work in his way; he fumed and fretted, and to allay the raging of his mind read Captain Marryat's sea novels, and spoke unfairly of that excellent man. Then slowly and with pain he gathered his forces together for a new effort of authorship.

Yes, but here it may be said the work was, or should have been, unnecessary. But what is the difference between efficiency and inefficiency, except that inefficiency throws a burden upon the machine that should be unnecessary? And what if the inefficiency is met with at the source, in the failure of intelligence, of receptiveness to ideas, of patient analysis, of the energy necessary to acquire and to profit by experience, of the habit of reflection, of generalization, of the search for new illumination; if it ignore all these subtle activities is inefficiency the more respectable?

How does this thesis apply in respect to works of creative genius? Carlyle defined genius as the faculty of taking infinite pains, though probably in throwing off this definition the Sage of Chelsea was taking less pains than usual, and was rather pleading for the admiration due to the craftsmanship of letters. The popular notion is that genius is the faculty that enables one to dispense with pains. The mark of genius is the freedom and ease, and fascinating facile

style in which a difficult work is done. Which of these views is correct?

In order to decide I deal with a suggestion that was once given to me by an admirer of Shakespeare—that the poet accomplished his work without effort. What was in the mind of his eulogist was the notion that the poet performed the task of writing without great thought, and with a sort of careless detachment of mind, as if in contempt of the material he worked with and the end he achieved.

This critic had little or no authority for the views expressed, except that such an attitude seemed to him fitting for a genius. It has something of the wonder, the surprise, and the magic of the fairy tale, as when the worthless, alcoholic workman suddenly suggests a brilliant invention that has baffled the scientific man, or when the hopeless scapegrace Aladdin becomes the possessor of the fortunate lamp.

Certainly the manner of writing of the genius is not that of the painful plodding of the uninspired man; his mind moves in another manner and in another sphere of action; but the cardinal fact is that he does the work.

The explanation lies partly in the anterior labours that have been performed through the years of his development. By his constitution, his tastes, his associations, the man of genius has the current of his thoughts turned in a certain direction, and by the exercise of his faculties continually, and without forcing, in this way he acquires a sort of intuition that keeps him on the right course; and with the experience, if he be a writer, comes by natural association the expression in words; if he be a painter, the expression in colours.

And so it happens that Byron, who wrote his marvellous "Don Juan" with great rapidity, replied that it had taken him twenty years of preparation; and that Whistler, when asked sarcastically how long it had taken him to do a certain little painting on which he had set a high price, retorted: "All my life!"

Returning then to Shakespeare, we find that, however accomplished, each play represents a great amount of work; in the conception of the whole drama; in the elaboration of the acts and the scenes; in the clever picturing of the

characters; in the ingenious arrangement of their interplay to bring out the best effects; in the actual dialogue.

No work of this kind could possibly be accomplished by one who at the time of writing had not found his intellect and his temperament and his energy concentrated to the exclusion of all else in the task before him; and this not the less truly if the work were thrown off with spirit and zest.

Amundsen may have enjoyed his expedition to the South Pole; but he traversed the route; he did not sit in a public-house talking of the ease with which such a journey could be accomplished. Nor did Shakespeare spend his time, or at any rate all his time, drinking sack in Cheapside, and in a half-witted manner, without great attention, composing masterpieces.

He does not seem to have attached much importance to his works in his later years; but we hear of this only by vague report. Even if it were true, it would only prove that the disposition of a man at one period of his life must not be taken to indicate his character at another. Or it might indicate a vicarious authorship, as of a Shakespeare who was the repository, and the stage-manager, for the works of diverse men of talent who brought to him plays for representation, subject to the conditions of his theatre. Any one of these suppositions is feasible. What is not possible is that he should have accomplished the work without the expenditure of the energy necessary on the route; and it is impossible that such energy should have been expended without the purpose, the temperament, the keen and intimate realization point by point of the situation—the feeling the play demanded.

That granted, then the greater the facility the greater the efficiency; and the greater the efficiency the greater the economy of work and the higher the genius.

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At this point we may consider one of Herbert Spencer's conclusions that one of the standards of ethics is the "mass" of life. That is to say, the largeness of the individual life and the extent of the population. The suggestion arose in Spencer's mind from the analogy of the

physical world, but this conception is only partly in accord with what we have discussed here. Mass is only one of the components of the expression in the mechanical sense of energy, the other being a function of velocity. In the special branch of physics which deals with electrical phenomena, we have energy expressed as dependent on current and voltage.

What is there in the moral world that corresponds? The answer requires a little circumspection, for nothing could be more fallacious than to draw analogies too closely, and without examining the reasoning step by step, between two widely separated fields.¹

That there is a connexion between the physical and moral world has been made in part the basis of this present work, but at a level at which the arguments that are valid are readily deducible, viz., that as our struggle to live lies with the forces of nature, the greater the knowledge of natural phenomena and their sequences, the better shall we be able to adjust our actions in order to make those forces subservient to our needs. But from that ground we cannot at once leap to the point of saying that as mass is important in physical science, therefore we may accept it as a sufficient standard in ethics. At best these analogies are sometimes helpful by way of their suggestions.

With energy we are on a different footing, for that involves not only mass but also velocity, and gives us the measure of work.

Without insisting on any close analogy, we say that from the reasoning in this chapter itself we must associate with "mass" of life, or volume of life, the attribute derived from complexity of development, and eventually of development of intellectual power.

That is evidently the quality most precious, both in the sense of being valuable itself and of being rare and not to be reproduced at will, in its higher manifestations.

This complexity of development which should be asso-

¹ In this way we should arrive at such results as those contained in a work which enjoyed great celebrity rather for its weakness than for its strong points—"Natural Law in the Spiritual World"—and by processes of loose reasoning of the kind false conclusions may be reached.

ciated with "mass" of life should be a complexity related to, and serving to interpret, natural laws.

Let us see how this standard may be made use of. In the world about us we often see great activity which we esteem to be at a comparatively low level. The work of making a concordance, for example, to Milton's poems is of a lower level than of the composition of the works themselves, though the actual physical labour may be greater. We recognize that as soon as the intention is formed of writing a concordance the formula is fairly simple, and the work consists of a patient carrying out of the processes, but without any special new effort of thought. Once the nature of the work becomes clearly indicated, thousands of intelligent persons could be procured to perform it, but it would not be possible, even by promising large rewards, or by dint of adding toil to toil, to produce a Miltonic poem.

In the days of the Incas, again, there was a system of conveying fresh fish from the sea to the capital, some hundred and fifty miles inland, by relays of runners. Here was a great expenditure of energy, but at a low level. Men for such a task could be supplied from any large section, but the means of conveying far greater loads over the same route by railway in a fifth of the time required a preliminary exercise of intellect that could not be commanded.

We shall be helped to estimate the relative value of efforts by taking a new point of view.

In foreign countries one gets sometimes a better perspective in which to view the merit of work than in one's own.

In studying, for example, the course of development of a science a thinker in a foreign country would be principally desirous of tracing out the links that had been successfully added, and he would be interested to know to whom the advance was due. In the country concerned it might happen that one of those who had contributed some important achievement might remain almost unknown, while the reading public might have an inflated appreciation of the value of books that had been recommended, not for essential merit, but because of the position, the title, or the academic authority of the writer.

It happens accordingly that each generation sees a great

output of intellectual work, and that the relative values often become distorted in the perspective. In a generation or two, when the adventitious aids to fame no longer operate, and when out of the mass of work it is sought to disengage something both original and helpful, then a new set of values begins to show.

Thus in Germany I once heard in an account of the development of the science of light the name of Dollond, an optician in Cheapside, mentioned with great respect for some good work in reducing the diffraction of lenses, while at the same time a great many names that had been celebrated were passed over because in the last resort they represented nothing new and true.

Consider the work of Gladstone, apart from such political activities as resulted directly in legislation. He produced many books which, on account of his position, attained high reputation during his lifetime. Now that he is dead, how much remains vital of that output? Very little. Gladstone's mind was not one of great originality; his ethical system was conventional and superficial. He owed his authority and his influence to his very limitations, for they enabled him to utter, though with great eloquence, the sentiments and the prejudices of the mass of the people. He has added nothing to our understanding of the ways of thought.

We have already seen in our review of famous ethical systems that the test must be applied ruthlessly, and that of that vast material which may have served a purpose in its day and which afterwards encumbered the route, little of durable value remains.

And these considerations lead us to a criterion for judging the effective energy of a work; and that is that it corresponds to a mental development of a high degree of complexity, when that complexity has been worked out in correspondence with the conditions of the external world.

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We shall see how the principles we have discussed tell in some great test, such as war between nations, but as a preliminary step we may review our results and express them in terms of ethical directives. For this purpose we will

use the division into physical, mental, moral faculties, although the separation is somewhat artificial, for there is a mutual dependence of the respective activities.

The physical energy of the individual depends eventually on the energy of the component parts of his body, and these in turn derive from the energy of the physical constitution of the objective world; and if our knowledge of physics, of chemistry, and physiology were high enough we could trace out in these terms the whole of the processes involved. We are far indeed from having attained so complete a scientific grasp of the subject, so that we are compelled to fall back on certain subsidiary guides which sum up a myriad of forces and processes. One of these is health; and that in turn involves appropriate conditions of exercise and nutrition; and those conditions are in part included in the virtue of temperance.

Over and above normal health we find robustness and hardiness, and these are desirable attributes that the customs of our civilization tend to sap and destroy. The primeval man whose food was obtained in a more hazardous manner and at less regular intervals, had an excellent digestion; but in our modern communities, with their habits of effeminacy, self-indulgence, and mollified sensualities, the pleasures of the senses have been blunted and the fibre has been rendered soft and little resistant.¹

Discussion of Energy on the Intellectual Side

In the mental world we have, in an analogous way, need of exercise and nutriment. This indication points to education, and thence to the establishment of schools of gradually rising grades, and then universities. It also points to the advisability of cultivating at our universities the main

¹ In South Africa I observed extraordinary recoveries from wounds caused, for instance, by bullets passing through the chest, particularly in the case of men accustomed to live a free, out-of-door life under favourable conditions. I use the word "extraordinary" by comparison with what I have observed amongst populations in large towns, especially those whose fibres were sapped with alcohol; but the cases of quick-healing and recovery should rather be regarded as the normal, and the low physical quality of the other should be recognized as due to preventable causes. It is therefore one of the practical indications of a good system of morality to trace out these causes of decadence and to eliminate them.

scientific subjects. On the frontal of all such institutions of learning I would be inclined to write, following Plato: "Let no one unacquainted with mathematics enter here," but on reflection I yield to arguments which have force at the present degree of our development.

In the first place, although our division of the science is arbitrary, it is necessary at present so as to allow of due concentration of the faculties on a manageable field. It happens, therefore, that a student who would find his time wasted in mathematics might be excellent in sciences such as botany or bacteriology.

Mathematics is also very often badly taught, as by teachers with a good technical knowledge of the subject but without understanding either of psychology or of the relation of their science to the great body of knowledge. It thus happens that a boy who up to the age of fifteen has employed his brains on literary subjects, and who has had his world of associations and interests enlarged and his energy stimulated, may subsequently do better at mathematics than one who has been drilled in that discipline too exclusively.

The science of mathematics, when properly taught I repeat, becomes fascinating, and it gives access to great domains of science which without its help possess little meaning. Darwin, who regretted in his old age that he had not been trained in mathematics, remarked that it seemed to give another sense.

Of still greater importance than mathematics is psychology, that is to say, when it is expounded in such a manner as to show how all modes of thought may be built, and that this psychology interpenetrates into every domain of science.

The physical sciences—mechanics, chemistry, for example—and the biological sciences from physiology to bacteriology, find a sufficient recommendation nowadays in the citation of their material results; but they also have a value in the training of the mind.

Compared with an education on such lines, that of mere classical learning is so meagre that we have to seek for some other grounds for its continuance than the advantage to the individual or the State.

Classic learning was rightly held in high esteem at one time, for in the days of the Renaissance it was almost like a revelation of nature; it introduced the students to works of science and of literature far superior to those otherwise available. Since that time, however, the science of the ancients has been far surpassed.

The literature of the Greeks was perhaps only less wonderful than their science and their sculpture, but, as in the case of all literature, it evaporates a good deal in translation. To taste it at the source is excellent, but that requires an intimate knowledge such as is obtained by not one out of a dozen experts, and not at all by the vast majority of the students who spend years in the preliminary work of learning the language according to the most difficult and arid methods.

Then, at best, a knowledge of literature is something that belongs to the order of stimulation and pleasure rather than to that of the nutriment that helps to develop the mind. If our modern civilization, moreover, has any superior significance at all, the literature that relates to it and illustrates it should be of a quality as much superior to that of the ancients as our science is superior to theirs. That is not the case, I acknowledge, but the remedy must be sought less in the imitation of the classics than in the development of our own minds turned upon the realities of our actual life. I would look to a great literature produced in a community where science was fostered rather than in one in which the study of literature itself was exclusively pursued.¹

In our day, too, since we boast that we are the heirs of the ages, we pay a tax for that heritage. It has seemed a part of a high education that we should be made acquainted not only with our own literature, but with that of the ancients, as well as the products of foreign countries. This is a tax, because though the pursuit of literature be a delight, yet when it is imposed upon us as a task, and the burden we have to bear is proportioned to the mass of material, then

¹ Had I need of authority, I could quote here with pleasure the words of Anatole France, who is not only one of the world's great writers, but also a philosopher in whose clear and sparkling writing the peculiar genius of the French is admirably shown. He said that science without letters is mechanical and barren, but that literature without science is hollow and futile.

even the pleasures of literature may be irksome. Such training is not necessary even for culture in literature. It seems an artless expression, yet it has significance, that Sophocles was ignorant of Shakespeare, and that Shakespeare himself had never read Voltaire or Zola, or the gems of our own Poet Laureates. Yet both Shakespeare and Sophocles produced literature which is the admiration and the despair of many to whom the modern as well as the ancient works are familiar. On the whole, I can think of no more enervating education than that of a high course in literature without some compensating balance, either in science or in the exercise of good common sense. Such a literature continually pulling at the passions and stimulating the emotions is like a spiritual alcohol in place of the less exciting honest oatmeal of thought on which strong characters should be built.

These remarks are not apart from the subject of ethics, for they strike directly into important practical application. During the Great War we were led, especially on the political side, by men whose training had, for the most part, been that of the public schools, of which the strong suit is the classics. These men had, many of them, very high reputations before the war, and had there been no war, in other words had they not been tested, they would have gone to their graves, perhaps to Westminster Abbey, lauded as great statesmen and high exemplars of the human race.¹

If the matter were examined in all its aspects, including the whole course of events which contributed to make the war inevitable, then the lesson would be seen to be still more striking. If one-hundredth part of the millions, or even a

¹ I do not mean to say here that Peace does not test the calibre of statesmen; I only mean that as the results are longer in their production and are less obvious, it is possible for a statesman to lead his country to the brink of disaster, and yet enjoy a high character for statesmanship, especially of the order of prudence. I have seen the shores of great nations strewn with the wreckage of the prudent man.

In war, all actions are accelerated, and results are produced in a much shorter time, so that the connexion between cause and effect becomes visible to the populace. And so it happened that the nation was brought to the verge of disaster, that endless millions of treasure, and hundreds of thousands of lives, were squandered as a tribute to the incapacity of our leaders, and that incapacity rested on an education that was faulty both from the side of development of intellect and of that of the formation of character.

thousandth part of that treasure which was poured out during the war, had been spent before the war in the extension of scientific education, and in the fostering of research, in the giving finally to science in the perspective of our social life an enormously greater part than hitherto, then various circumstances which led to the Great War would have been obviated.

Here, then, is another great lesson illustrating on the mental side the ethical importance of energy.

Discussion of Energy on the Moral Side

The last division under which we have to discuss this question is that of the moral side. We find energy here represented in various guises, all of a bold and forward aspect. When we speak of energy in this place we have a vision of the aspects of courage, confidence, driving power, and will.

These faculties or powers are often regarded almost as entities possessed by the individual. They are all really subtle, and at times even mercurial, qualities. Courage, for example, is quite a plastic quality. The power of cultivation of courage is extraordinary, especially when the training is extended over a long period, and has become kneaded into the personality of the man by habit and discipline. I have seen courage grow progressively with the ability to use the instruments of offence and defence. A raw, untrained youth may be above the average in courage, but he feels a certain timidity from lack of confidence in his own ability. Then he learns to ride and shoot, and generally to become acquainted with the work of a soldier. He may develop at length into a hero. Even then he is liable to sudden failures. I have seen the men who on one occasion have fought like lions, on another occasion run like sheep.

Will-power is not a completed gift nor a dead possession. It is something that arises out of the whole fibre and character, and its manifestations are greatly dependent on education. The boldest man will hesitate if he is face to face with a situation of which he knows nothing, while another of much less resolute character, who "knows the ropes," may act with promptitude and decision. A surgeon, for example, who has a complete knowledge of anatomy, and

who through long habit has become acquainted with his own powers, may press on determinedly in a severe operation, where one unaccustomed to such sights would be dismayed by the danger and by the ghastly appearance of the patient.

I have here taken merely a vivid example, but this may be easily transformed into other spheres. A general who has thought out all his plans and who has assured himself that victory will follow their realization, will be carried on by the sheer support of his intellect to fight out on his own lines, even though he may not be naturally a man of strong will-power; on the other hand, a man of strong will-power who plunges into the dark and blunders here and there, without being able to estimate the magnitude of the forces at work, soon becomes irresolute and liable to be disconcerted.

Marbot, in his "Memoirs of the Napoleonic Wars," tells a story, which has an amusing side, and which illustrates what we have said. During the Russian campaign Napoleon had left the command to a trusted officer, Oudinot, whom he had lately nominated as marshal. Under him was serving General St. Cyr, a man of greater intellectual power, but who had not received the marshal's bâton. The French army began to get into difficulties, and Oudinot was forced to come to his subordinate for advice. Every time his opinion was asked, however, St. Cyr contented himself with taking off his hat with a bow of deference, and saying: "Monsieur le maréchal!" Oudinot became exasperated, and losing his head and his will-power at the same time plunged into the thick of the fight himself, and was lucky enough to receive a slight wound. He then retired and left the direction of affairs to St. Cyr who, though naturally of a less determined character than Oudinot, had fortified his will-power by his intelligence. He immediately took steps which altered the disposition of the forces, and gained a brilliant victory.

Von Moltke had neither the temperament nor the appearance of a man of iron will, but his intelligent plans in the Franco-German war brought victory so consistently that he carried them determinedly to the end. In the last Great War, when Foch was called to the Supreme Command at a critical moment, he did not allow his judgment to be swept away by his sheer fighting quality, he rather made his will

the servant of his intellect. Like a student he thought out the moves, which though bold and daring to the view of other officers, had to his mind less that aspect than the sense of efficiency. He weakened his force in the line of the German advance and accumulated the reserves thus provided on the flank of the Germans. At a critical moment their progress was arrested, even by their difficulties of communication. Then Foch smote them with all his strength on the flank, and recognizing that the time for the supreme decision had come, he gave orders to carry out the most determined fighting right along the line.

The strategy and tactics here involved seem to me less illustrative of mere will-power than of keen intelligence applied to an objective problem, partly of a physical and partly of a psychological nature.

Before applying all these lessons to the deep events which try a nation's strength, a word must be said by way of circumspection. I have spoken, even with asperity, of the orthodox ideals of education. The question may be asked, however: How is it that men deficient in true education and devoid of greatness of character rise to high positions of influence and authority?

It is quite possible that an individual may profit from his very defects. Let us take a striking illustration. In the community of Flathead Indians the young brave who by some chance had escaped the customs of the tribe, and had preserved a normal head, would not be more highly esteemed by his fellow-tribesmen on that account. He would probably be tomahawked amid the righteous indignation of the community, while, in vindication of the greatness of the Flathead tribe, the flattest of all would be carried to the seats of the mighty so that he might rule in authority. Or, again, take the Masai tribe of South African blacks. They have a traditional custom of compressing the calf muscles of the leg. The young Masais who show such credentials as an attenuated calf are naturally preferred to those who are well-grown and normal. Finally, consider the ordinances of the old Mandarin class in China. They used to obtain their positions of governors of provinces, not from any acquaintance with those provinces, or any kind of knowledge whatever of administrative skill, or of any kind of economy,

political or domestic. This was not necessary, as their principal function was to rule and to squeeze the taxpayer. Their qualifications were what is called good birth; that is to say, a derivation from some privileged families, and after that an acquaintance with a literature which was antique even in Old China.

From all these examples, it will be seen that high positions may be attained not in spite of, but because of defects. Where, then, does the ethical sanction come in? Simply in this—that those nations again are tested in competition with others; and every virtue as well as every fault tells its tale duly in the complete account.

Let us see how this works out in the case of a great war.

National Energy as Tested by War

Von Moltke called war an ordinance of God, but this is a professional point of view. I have generally known war praised, either by ambitious officers who have seen in the slaughter of hundreds of thousands an avenue to rapid promotion, or by a certain type of literary men and school-masters who delight in the vicarious strength which seems to emanate from this kind of violence.

I have seen war, and I have been shocked almost more by the stupidity which it enthrones than by its actual destructiveness. And so when Von Moltke, who was a thoughtful and patient war organizer rather than an inspired leader of men, seeks to pose as a philosopher and claim a special inspiration in the interpretation of the mind of God, I feel entitled to ask for his credentials. One fact is sufficient to make me question the immediate intervention of God in carrying out this ordinance, and that is the singular choice of victors that we meet with at times.

And yet as between nations fairly well matched in strength war is a great test, a marvellous judgment whose probing questions go deep to the very sources of the nation's vitality and greatness. Every element of strength and every element of weakness tells in the account; and this kind of stock-taking is none the less effective as being indirect and unconscious.

Consider a concrete case at once in order to fix the ideas. Two soldiers are in the trenches at the same time. In the

old days when the armies met face to face and fought with lances or battle-axes, or the like, personal prowess counted for a good deal, and personal prowess meant muscular activity, good eyesight, staying power, and especially training in the use of the instruments of combat. But nowadays when men are often killed at long range by projectiles fired by others who again do not see their opponents, it is said that the personal qualities count for less.

This, I think, is a fallacious notion.

Two men in the trenches, let us say, will be subjected to an immense bombardment. The noise, the concussion and the prolonged character of the disturbance are all factors that tend to depress the nervous system. Of the two soldiers he that has the most unstable organism will be the first to succumb to this ordeal alone.

As to the question of the courage demanded for war, I think that the modern soldier must have a better morale relatively than the ancient fighter. In the days when an army, or a large force, charged in a block, the individual soldier was carried along with his comrades and to some extent protected by them. In the fights in the open, within a circumscribed area and under the eye of the commander, when a great prize—perhaps as at Hastings, a whole country—was lost or won in a few hours, there were great incentives to fight, the most powerful of the moral motives being possibly the love of approbation.

The modern soldier, when he fights in close formation, has to face engines of destructiveness enormously greater than of old, and when rank after rank withers and wastes he must still press on. If he fights in open order he has still great dangers to face, and he has less the sense of cohesion with and encouragement from his fellows.

In the trenches, especially at night, and when he can appreciate the immense force of the attack and yet cannot see his comrades in mass, he must make a greater demand on his resources of courage and duty than in the *mêlée* of a hand-to-hand conflict.

When the intense cold of winter sets in the two soldiers have not an equal chance of survival. One of them has been a countryman, used to hard work on a farm, and content with little comfort; he has always kept early hours, and he

has not been addicted to alcohol. The other has been a town-dweller. He has sat in an office in a foggy city for the greater part of the day, often working by artificial light, and he has returned home by underground trains in which the atmosphere is often charged with the germs of phthisis. At night he has frequented cinemas or theatres, or public-house bars; and he has kept late hours habitually. His depressed nervous system has craved for stimulation, and he has found that in whisky.

Of the two men, which is the more likely to succumb when the stress of great hardship comes; when every organ of the body is being tried; when the brain, the heart, the kidneys are being sounded and searched incessantly; when the germs of bronchitis or pneumonia are rife in the trenches? The chances here are not even; the rotten fibres of the alcoholic subject will give way under an ordeal that the healthy man will hardly feel.

If a shell bursts and blows the men to pieces, then, indeed—and here is the incident of stupidity in war—the noble, the bold, the intelligent and good goes under as certainly as the debauched, the wicked and the mean. But suppose both men are wounded, and not vitally—are the chances the same? Not at all. One man may recover in a couple of months and be fit for duty again, when another may fall a victim to a series of complications that render him an invalid for ever.

Difference of acuteness of sight in the two soldiers will tell either in sniping, or in avoiding being sniped, and in a hundred other ways during a campaign; if not in any one individual case, certainly in the aggregate. The acuteness of all the senses, the general alertness and activity, are all factors that modify mere chance. Muscular activity and strength and endurance all tell their tale, either in an assault as at Cambrai, or in a long retreat often without food as from Mons.

If now leaving the question of physique we enter upon the psychic field, and consider the question of courage, sense of duty, discipline and the like, we find that in these respects any two soldiers are not alike, or, in other words, that the value of an army is not to be summed up by the numerical indication of its fighting strength. The ultimate analysis

of courage would lead deep down to questions of race and history and heredity; questions of mode of life, practice in war, or in some activities demanding great output of energy in hazardous circumstances; questions of food, and of individual education and training; questions of health and efficiency at the moment of trial.

Discipline and the sense of duty depend on education from an early age, followed by special training, all immersed in the atmosphere of respect and obedience to laws which constitute examples of "authoritative association" for each and for all.

These soldier-like sentiments are modified, and in some cases fortified, by the affections associated with the home of the soldier, and here the strong influence is not that of force or violence, but of the gentle and tender memories that cling round the earliest impressions of life. The force of these depends on the condition and on the whole history of the country as found in its results.

Then we come to the actual weapons. Here the most formidable engines of destruction are but the concrete expression of the results of scientific work which might have a hundred other applications than those of destruction. The famous French ".75," for instance, was not the invention of any one man. Apart from resting on the basis of the previous examples of cannon of high efficiency, it has a complete history of its own, which is fascinating as showing intelligent minds at work solving questions presented as problems of mechanics and puzzles of ingenuity. The invention of smokeless powder is accessory to that of the modern guns, and this was a problem of chemistry which had in itself no immediate reference to wholesale slaughter.

Moreover, the whole of the questions involved in the invention and in the gradual perfecting of such a machine as the ".75" are not those of technical science alone. Two generations of officers had employed their talents on this fabrication, and that fact implied qualities of organization, foresight and continuity of purpose in the military establishments concerned.

Here, again, we have an instance where an event which seems to depend on the arbitrament of brute force, has really tested fine and delicate qualities which have roots in the

mental capacity and in the moral power of a series of individuals.

The inventiveness produced by the actual exigencies of the war itself was remarkable; but the inventions were not the outcome of the mere strong will to win; they rested on a scientific education and technical training.

An immense impulsion was given by the war to the development of aeroplanes, submarines, and means of wireless telegraphy.¹

We may leave that aspect of things at present in order to touch for a moment on a sphere of another order, but of which the activities were necessary in order to make the rest of the work effective. During the war there was in this country an enormous extension of the output of munitions, and in the United States of shipbuilding. This work was to some extent improvised, for it was demanded by the immediate dangers of the situation, but the improvisation was only possible because it rested on a basis of a great and well organized industrial life. That organization, implying a government within a government, depended on control and adaptation of energies, and adjustments of efforts and of benefits of an exceedingly complex character, but of which the factors dipped deeply into the moral constitution of the populace.

Apart from such a social organization, but associated with it, arrives the question of the relation of the citizen or the soldier in respect to its form of government. The old imperialistic and autocratic form of government, such as prevailed in Russia and in Germany, had been praised on account of its strength and stability. It was conceded that there were features of this mode of government which were shocking to the instincts of free men, but a compensation was found in the fact of greater efficiency, especially in war.

The war tested that principle and found it wanting. The Russian Government fell in sheer rottenness, and the revolt

¹ Professor J. A. Fleming, for example, devised a signalling apparatus destined to solve the problem of showing a light visible to friends but not to enemies. The light he employed was polarized by a polarizing prism, but looked at through a telescope provided with another prism it would be seen twinkling like ordinary light, or would be cut off, according as the first prism became suitably rotated.

against the system of Kaiserdom was the immediate cause of the collapse of the German fighting force.

In 1870 the French troops had been badly led, and they were fighting for a system which most of them desired to see ended. In 1914, and in the subsequent years of the war, the defence of the Republic heartened the citizen soldiers to displays of heroism which surpassed all that French history had known.

If we pursue this mode of examination we shall find that everything that appertains to national energy has been touched upon in the course of the war. Even the fondness for games and sports had its direct influence, both by forming a bond of union among the men and by giving zest and spirit at times during an attack.

But that being so, it may be objected that in the realm on which great stress has been laid, that of science, the Germans were superior. Before the war they had for every highly trained chemist in England five hundred in Germany, and their scientific education and organization had enabled them to capture a long series of key industries, such as the manufactures of optical glass and apparatus for electrical measurements.

The answer is that the Germans did profit by this part of their superiority, and up to its full measure. But in a war, as in the display of all great natural phenomena, the results are as if nature sat aloft as an arbiter, noting everything and entering everything dispassionately in a book of records, on the credit or debit side, and that the decisive balance is struck when the whole is complete.

Thus, while the Germans profited by their exact science, they failed in that sphere where subtle tacts and flashes of wit and inspiration have play. They worked patiently and laboriously; they organized magnificently; but when the machine became disarranged, or when they were suddenly presented with unforeseen conditions, they lacked initiative, and they failed to produce such master strokes as that of Foch's last attack.

They failed in the understanding of other peoples, and this defect had the result, with which they had not reckoned, of producing step by step a series of new enemies.

Then the Germans suffered from a cardinal defect in the

ethical standards of government, a defect which affected every one of the belligerents, but which was especially conspicuous with them.

Even now, when we have touched the physical, mental and moral side of nations and races and extended our analysis even to the depths in these matters, we have not exhausted the considerations on which the decision of a great international conflict depends. There are also the physical factors of nature to be considered; the resources of the respective countries, and the facility for tapping also the resources of other countries accessible to them; even the geography of the respective countries. All these factors have importance, and moreover, though the questions of race and institutions and education tell, yet the decision is given not to those as gross capital, but in the manner in which they work out on specific occasions in which another factor, which we call chance, but which means the serene movement of nature, undiverted by their strife, operates in mysterious style.

In all this the judgments, aspirations or ethical standards of the competitors have their proper weight, but no more. Nature, which gave the Germans credit for their organizing power, placed rather to the debit side their false interpretation of Darwinism, for that error tended to produce arrogance and brutality; nature gave to the Allies the full credit for courage and resource, while making us pay in mountains of money and rivers of blood for the favourite doctrine of the advantage of illogical reason.

Myriad factors have thus been contributing to the final outcome of what in one aspect of the clash of forces might be regarded as a trial of energy.

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The present chapter may be thus briefly summarized :

Energy as a principle of ethics reaches deep as the constitution of the world itself. The principles of energy and truth are inseparably linked. They lead inevitably to high standards, as, for example, in giving us the criterion for judging of the value of the thinking faculty. They indicate generalization as the mark of a high mind. They point the way to the development of the mind. They indicate that

thoughts so obtained should have directive power in ethics. They call attention to the fact that, apart from our own sentiments and emotions, we find objectively a great guiding force in the movement of the world itself. Energy must be looked upon as an attitude affecting every form of activity, and, accordingly, when a great output of material energy is called for, as in war, the principle is found to touch upon all the elements, physical, mental, moral, of the community. If no other proof were required of the value of energy, as a great principle of ethics, it would be found in that great test of validity, the survival of those, other things being equal, who adopt that principle.

CHAPTER IV

SYMPATHY

THE next great principle that we have posited is Sympathy. This is not a mere question of sentiment which the "strong sons of earth" are entitled in their superiority to treat with amused indulgence or active contempt. It is really a high poetic feeling; it is the source of nearly all poetry.

Sympathy implies understanding, and it enlarges the mind to the comprehension of many matters otherwise hid. It has its foundation deep down in the very structure of the world itself, for it is associated from the first with co-operation, and we are so constituted physically, mentally and morally, and so circumstanced in the world, that work in community is a principle of mutual benefit to those who co-operate.

From this principle arises the establishment of the family, the tribe, the state, the association of states. Within the state Sympathy gives the great cohesive force; it is the main condition of the assimilative power of the state. It is the fount of inspiration in poetry, in the drama, and in all the arts; and by the adornments and embellishments they bestow upon the national life Sympathy is again fostered and developed.

When we study communities of insects, as bees or ants, we find that, however impressed, there is a sense of co-operation. This we impute to instinct, but that fact does not differentiate such activities, except in degree, from our own. I have shown¹ that at a certain level all our acts, even the most delicate acts of thought, are instinctive, or spontaneous.

It may be the case that no particular bee has a clear idea of the total plan, nor of the co-ordination of functions

¹ In "Psychology: A New System."

of all the others. Hence I have heard a man of science say that the bee is not intelligent as an individual, but that the community of bees is intelligent.

In this respect the bees do not differ, except in degree, from ourselves. We have already seen many examples, as in the case of the development of wireless telegraphy, where the co-operation of a great many workers, or thinkers, was necessary to arrive at the final elaboration of the apparatus. The work of these men of science was not all consciously directed to any end of the kind, and most of them indeed had no suggestion even of such possible applications of these results.

Again, in the discussion of the factors on which success in war depends, we found that not only is the co-operation of an immense number of people necessary, but that the co-operation may be in spheres that have only an indirect and remote connexion with each other. It may happen, and in practice often does happen, that of two great functions, both essential, and both destined eventually to aid the general co-operation, the representatives mistrust or despise each other, and seek when they come into contact to be injurious to each other. Not only is the man of intellect often at loggerheads with the man of action, though thought should inform action, but two men of action in different spheres seek to diminish each other's importance. The "matelots," as the man-of-wars' men call themselves, dislike the marines, as landlubbers, and the feeling is reciprocated, for the land troops like them no better. One regiment sometimes carries on a feud with another. In the intellectual sphere Goethe somewhere speaks of the metaphysician who had a sort of philosophical vendetta against mathematicians.¹

The examples usually given of the value of co-operation are those of card making, or pin making. Often the process is described as an illustration of the advantage of specialization; but it calls into evidence the fact that specialism has in

¹ Even two mathematicians, pursuing different branches, may detest each other's work. An amusing instance of this was in the quarrel between Steiner and Plücker, both men of genius, both men who gave a great impulsion to mathematical study, and yet who failed to appreciate each other. Steiner once declared that he would refuse to write for a mathematical magazine if Plücker continued to publish in it his theorems and theories.

itself no use unless the results of it be afterwards woven into the scheme of co-operation. Such examples are impressive, for the whole of the operations can be seen under the eye at once; but the most interesting and instructive examples are those where the co-operation is hidden.

From what we have already discussed, of course, it is easy to rise to the certitude that in a community none of our acts, good or bad, is lost, but that, even though we cannot trace out the incidence, each tells according to its value.

So far from all the minds of the community having an intelligent appreciation of the totality of the work, it should rather be said that nothing is so rare as to find any mind sufficiently comprehensive and plastic to understand the processes that form social life and co-operate towards its fullest development. I doubt whether such a mind would be appreciated in the community, for the most arrogant of people intellectually are those who by specialization have acquired considerable skill in a restricted branch, and who have lost the proper sense of perspective.

How does this tell in history?

We have already glanced at the causes of the decline of nations, as, for instance, in the case of Rome, in the lack of high intellectual power keeping pace with the material development of the empire. That conclusion is not in any manner at variance with the statement that one of the causes of the downfall of Rome was deficiency of sympathy.

The Romans were on the whole wise administrators, and they were tolerant to those who fell under their sway and who accepted their regime. But even that sense of duty and spirit of fortitude that produced some great sculptural characters was bound up with narrow vision, egotism, and brutality.

It was necessary that the Roman empire should fall in order that the world should become emancipated from the rigid doctrines of the Roman world, for the empire as empire did not contain within itself the principles of regeneration. Such a condition of affairs, in as far as peoples are influenced by ethical motives, tends to produce revolutions, and in the history of the world becomes their justification.

The excesses of the emperors, the madness of some of them, aided the process of dissolution, and then amidst a welter of confusion and bloodshed lasting for centuries, and after toil and defeats and searchings in strange paths, the clear intellectual lights began to emerge which at length guided us to modern forms of civilization.

The defect of the Greeks was also a lack of Sympathy. At their bloom time the Greeks, even their great thinkers, saw in surrounding peoples a lower kind of human being, incapable of culture and fit only for slavery. It would astonish Aristotle to know that out of these despised races would eventually arise men who would regard some of his fine conceptions as too gross and material, and who, in the development of that science to which he had so nobly devoted his mind, would behold more deeply and widely than he had seen, and by subtle feats of intellect that would have been his delight win new secrets from nature.

Cruelty

The discussion of sympathy is linked with that of cruelty. If we denounce cruelty we have the approbation of the great majority, even of those who, in their sports, or in their treatment of enemies or subject people, show harsh and callous dispositions. Every nation has a repugnance to the forms of cruelty associated with others. We go to a bull-fight—we are filled with loathing of the cruelty inflicted upon the poor blindfolded horses, so much so that we lose zest for the brilliant spectacle and refuse our admiration for the cool courage and splendid skill of the matador. But with pride and joy, with an exhilaration that finds its expression in racy, rolling songs, we will chase over the fields not a terrible animal like the Spanish fighting bull, but a defenceless fox, harried by packs of dogs who, after they have run the wretched beast till he fails from sheer exhaustion, plunge their fangs into his quivering body and tear out his entrails, to the admiration of the brilliant scions of the race.

The foxhunter's reply is that the fox is "vermin," but the bestowal of an opprobrious name on the objects of one's cruelty is the most facile and the most unconvincing of arguments.

The Spaniard may absolve his conscience, but he does

not remove the execrable fact, when he derides the wretched horse that he sacrifices to glut his lust for blood. A horse or a bull is a larger specimen of animal life than a fox, but it would lead to strange conclusions if we judged of the capacity for suffering merely by bulk. The horse is killed by the sharp horns of the bull—"spears," as the toreador calls them—and the bull is killed by the sharp sword of the matador aimed at the heart; but if we are to make fine distinctions as to modes of cruelty, it seems to me that these swift instruments are more merciful than the teeth of infuriated dogs, tearing and mangling the body of their victim till the last quiver of life has gone.

Still more dubious in morality, if cruelty and brutality be really faults, is the royal sport of shooting stags. Picture the scene: A beautiful glen in the Highlands; the early sun beginning to drive shafts of light into the valley, revealing the charm of colour and of form, and sending pulses of glowing life through nature; the mists on the hills in the further distance rising; and there into the scene suddenly stepping a stag, superb in lordly grace. Ping! The stag, thrown on to its haunches, stares around in surprise, recovers itself, hobbles off on three legs, while the green grass is sprayed with blood, and the broken limb of the mutilated animal tells the tale of torture and death.

Such an incident shows barbarism and cruelty, and it seems to me no answer to such a charge to say that killing stags in this way is one of the traditional pastimes of royalty and the aristocracy, and that no trophy that adorns the ancestral hall is more prized than those which tell of these great exploits.

I will not pursue the theme of cruelty into all its manifestations in the name of sport, such as that of shooting pigeons released from a trap, or killing pheasants that have been reared like barn-door fowls and then driven over a hedge to be slaughtered by the doughty heroes of this domestic war. What I am concerned about for the moment is to observe this question of cruelty on all sides.

If, for example, the question be put in a direct manner as to whether cruelty is in itself admirable, the answer is a decisive negative. That is the reply which is obvious, if only for the reason that it excites no comment when uttered,

whereas the expression of the opposite opinion would cause unfeigned surprise.

I am not content, however, with this facile reply, for though in any one case such a test might be found satisfactory, yet if we had no better guide we sink into the kind of error with which we have reproached all previous systems.

What has puzzled me particularly has been the frequent association of cruelty with great personal qualities, while a shrinking from cruelty is occasionally a characteristic of a weak and spiritless character. Therefore I want to probe this matter to the bottom and to face the facts whithersoever they may lead. .

I take a personal experience : Once as a boy I was out shooting when a hare started up and ran. I fired and blew its front legs off, and I was heartily congratulated by my companion and mentor, who was a good type of English sportsman. As the hare had fallen it had uttered a wailing shriek like the cry of a baby, and this had brought home to me the sense of torture and despair that had swept over the poor being. I threw aside my gun, and I lost the pleasure of killing things for the sake of killing, or of training myself to an accomplishment useless and trumpery if that pleasure be absent.

The question is, did this attitude of mine show the movement of a better spirit, or did it indicate a certain decadence of fibre and of soul, deserving only of contempt?

Here again, and especially if the question be put in a ceremonious manner, the answer would be given by many and with due self-righteousness that it was proper to put aside the gun ; but traced out in practical acts, and referred to the personal experience of the individual man for his own guidance, the theory of decadence and the sentiment would overwhelmingly prevail.

Kill ! Kill ! Kill ! That seems with the youth of all civilized Europe, and certainly, if proverbial sayings have value, not less here than elsewhere, the impulse that is obeyed when a wild creature, or in the highest circles a tame creature, moves within the vision.

All sense of beauty, all feeling of nature, and of curiosity of natural history, all instinct of sympathy is merged and lost in that single brutal cry : Kill ! Kill ! Kill ! And

this, be it ever remembered, among people who execrate cruelty, at least in the forms in which others practise it.

Let us pursue the matter a little further. Cricket is a sport which, unlike the killing of tame animals and pheasants, has no aspect of cruelty, and it demands, moreover, that the player "pay with his person." Yet amongst the exponents I find a curious contrast. A well-known cricketer, member of several Australian teams, Blackham, was fond of the nightingale's song, which is not known in Australia; after a match he had been known to walk miles in the country to listen under a tree to that little poet of out-bubbling lyric verse. I confess I find something pleasant and touching in the image of this bearded veteran player sitting there solitary and secluded, far from the busy haunts of men, to feel rain upon his soul this sweet and ever-wonderful delight.

Then again I read of another cricketer, hardly less famous, cited in popular letters from Australia as having distinguished himself in the shooting matches, shooting starlings!

Here again the formal verdict, on a direct inquiry, would be in favour of the gentler being who listened to the nightingale, yet the practice of nearly all, especially those trained in the most orthodox traditions, would be on the side of the starling killer. That practice has obtained so far in the land of chivalrous France that there starlings are hard to find, and one of the most piquant chapters of Daudet's "Tartarin de Tarascon" describes how the hero was reduced to the more tempered joys of shooting at caps.

There has become fostered a morale in most civilized communities which makes it a point of honour to bear with equanimity the cruelties inflicted either on dumb animals, or on other human beings, in all those cases where the practice has something of official sanction.

When I felt a twinge of remorse for the needless slaughter of a hare I dared not avow it. The grossest cruelty, if it be within orthodox lines, seems something to boast of. It is accepted as a mark of virility in a growing boy, even as mothers often encourage selfishness, apparently on similar ground. We are thus far away from a settlement of the question against cruelty, simply by general consent.

Let us now look at history.

All the conquering races have been cruel; at times diabolically cruel. In the exploits of the great conquering chiefs, the flower of chivalry, from William the Conqueror to the Black Prince or to Peter the Great, we read stories of stark cruelty in which the ferocity seems only to be matched by an underlying spirit of fear.

Roman history, even at its greatest splendour, is full of stories of cruelties, even of a kind unnecessary to the strength of the nation. Julius Cæsar seems to have been one of the most genially gifted of that extraordinary people; yet his treatment of his warrior foe Vercingetorix, read even at this distance of time, disgusts by the record of cruelty in which no trait of generosity seems to have stirred the great conqueror's mind, nor even the stern sense of justice, in that Vercingetorix himself in his fierce determination to win absolute power waded through the blood of victims of his own almost incredible ferocity.

In the annals of every nation in the world which has at one time or another attained to the dominance of others, there are abundant stories of cruelties. I know of no conquering nation which has not pursued its conquests or its subordination of other nations by using cruelty, either as a means of waging war, or of holding other peoples in subjection. This is true not only of the great nations, whose government has been extensive, but also of smaller nationalities, or even neighbouring clans, which have been striving for independence or supremacy amongst themselves.

In the "Decline and Fall of the Roman Empire" Gibbon gives an account of the dominance at different times in the Balkan Peninsula of the Greeks, the Serbians, and the Bulgars. The story of each of these races is marked by some impressive and dramatic example of terrible cruelty. Their rivalry came to an end with the subjugation of all of them by the Turks, who gave evidence of a still more formidable conquering character, associated with more devastating and systematic ferocity.

The tide of the invading hosts of the Moslems was stemmed back by the Christian forces under Charles Martel, but under the banner of the religion of humility and love

arrogance reached its highest point and the cruelty was not diminished.

A picture exhibited a few years ago in the Paris Salon by the famous Russian artist Vereshchagin represented the great conquerors of the world: one saw the chariots of the great warlike leaders, Alexander, Cæsar, Charlemagne, Napoleon, as their horses advanced snuffing the air with heads erect, scenting the atmosphere of death, while in the foreground, and extending in the background through an interminable perspective, the field was strewn with the countless thousands of corpses who had been the stepping-stones of power of these great ones of the earth.

Julius Cæsar, who had a reputation for clemency, is said to have produced the deaths in his various campaigns of something like one million men. The historian may urge that this was necessary for the pacification and enlightenment of that little corner of Europe in which his operations were conducted. That is possible, but as against the obvious large account on the debit side, something substantial must be shown on the credit side of the balance. The assassination of Cæsar himself soon followed his rise to the highest authority, and then, after a brief period of prosperity and magnificence, the poisonous forces of dissolution began to appear amidst the corrupt mass of the Roman Empire, and soon all that remained of value was the legacy on the spiritual side of just laws.

In reviewing the lives of the great conquerors one is delighted to find from time to time some display of magnanimous spirit, and the historians make the most of these occasions. The comparative rarity of these examples makes them conspicuous, for anyone who will visualize the whole work of their campaigns will not find that generosity was the stuff they worked in.¹

The great Spanish soldier Hernando Cortez, the type of

¹ I grant that no one of these men was inspired by purely selfish objects, especially not an object conceived in mere material gain and gratification. Alexander, with his overflowing energy, his ardent soul alive to noble sentiments, his half-divine and half-lunatic enthusiasms and mystic imaginings, this brilliant demi-god and besotted soldier wrought better than he knew. The ideal that led him on was less than the destiny which presided over his work. Those who have studied Humboldt's "Cosmos" will find here again that in the

the great conquistadors, had his full share of that spirit of romance and of poetic chivalry associated with the Spanish race and the history of Spain, but his conquest of Mexico is marked, stained or glorified, according to the decision which we are endeavouring to win out, by terrible cruelties. Of all those who have figured as leaders on the world's stage, Napoleon Bonaparte seems to me to be the one great conquering soldier against whom the charge of cruelty cannot be justifiably levelled. His was by far the most highly endowed intellectually of all these minds; his views were more ample and more enlightened than those of his predecessors; and both by his own natural instincts and by reason of his considerate policies, his rule was the most clement and conciliatory.

It is true that on occasions Napoleon acted in the most ruthless manner, as, for instance, when at the battle of Austerlitz he ordered his gunners to fire into the air, so that the descending shells should break up the ice over which the beaten Austrians were escaping. It must also have required a certain fortitude and indifference to suffering to plan great campaigns in which hundreds of thousands of lives must necessarily be sacrificed, in order to gain a great political end. One must be sure of the value of these ends to be willing to pay so great a price for the prospect of their realization.

The whole question of war will be considered later, but at present let us fix our minds rather on the side of cruelty. It is quite possible that a soldier, who in his professional duties strikes with iron resolution, may yet in private life be of a friendly and genial disposition, and accessible to all the finer touches of emotion; but in the acts of war the cruelty is found, no matter what may be the motives that have impelled the action, and all these consequences should be weighed by a responsible man who has it in his power to let loose or to withhold these horrors.

working out of the history of the world a purpose, that may have swept along the vision of the conqueror's mind but which was never consciously planned by him, seems to arise out of his achievements. His conquests broke down the barrier of East and West and extended the civilizations of both. During the course of his campaigns, Alexander, in spite of his innate generosity of spirit, was guilty of atrocious cruelties.

During the course of history the conquering type has seldom been regarded with any sentiment of disapproval in regard to that aspect of his character. In the style in which our histories are written for the building up and edification of young minds, one would think that the work of civilization had been carried on almost exclusively by great men with pompous titles whose main business was to carry out aggressive policies by ruthless slaughter.

Cult of the Strong Man

In our own day we have seen the "cult of the strong man." I have even seen and known some of the favourite examples of the strong man, but I have never observed that the strength consisted in superiority of intellect, amplitude of views, or great mansuetude of character. When the accidentals are cut away, there remains always to focus the imagination some instance of barbarism which in its strength disregarded every other motive than that of inflicting pain and spreading terror. The cruelty is associated with what decadent poets and fervid historians call "strength," and it is the cruelty which has given the salient features to the characters they admire.

Looking at the matter from the professional point of view again, we see that it may often happen that if a certain work, no matter how terrible the sufferings involved, is necessary to safeguard something of a higher character, that work must be carried out. On a smaller scale a surgeon finds that every day in his practice. He inflicts pain in a manner which would be atrociously cruel if it were inflicted wantonly, yet he may have a humane motive. Singularly enough, the surgeon may be a man of refined and gentle manners. He would not be more efficient and less cruel if, overcome by the sufferings of his patient, he allowed his intelligence to fail and his touch to become less accurate. What applies to him may well apply to the professional soldier. Cruelty only enters into the question when pain is inflicted wantonly, and rather with a desire of satisfying some passion in the tyrant's mind.

There is another aspect of the question, and that may be referred to as the moral standard in regard to fortitude which the individual sets up for himself. The Stoics

trained themselves to endurance of privations, of fatigues, and of pain. They set up in this way a high standard, at the level of which their powers of resistance might succumb. Such a man would treat with contempt the pains and discomforts which might break down another of weaker fibre. If then he makes light of these in his own experience, how is he to remain sympathetic with others? Only by placing himself in a special attitude with regard to them, and treating them with contempt, while running the risk of a certain spiritual pride with regard to himself.

We see the extreme of indulgence in a state of society where every little misfortune or deprivation is bewailed as a tragedy, and where a cut finger is made the object of tender solicitude and anxious inquiry. In the circles where sentiments of that sort are cultivated, both in regard to physical and moral pains, the people do not regard themselves as decadent; on the contrary, they pride themselves especially on the sensitive dispositions of their souls, and look with disdain upon others less susceptible as inferior beings of a brutal temperament. If that strain of morality were cultivated, nature herself would solve the question in the eventual elimination or subjection of the tender types.

If a man resolve to explore the Arctic regions, he must brace his mind and body to the endurance of rigorous climes. He must not lose his resolution at the first sign of bad weather. And so again with events in the psychical world.

I am seeking now to come to the crux of the matter. If cruelty were a necessary concomitant of that bold and masculine spirit which accomplishes great things in the history of the world, and gives us standards which raise the whole dignity of human life, then we should have to brace our minds not merely to suffering, but to the contemplation of suffering, and we should pursue our way with something of that indifference which we see in the operations of nature herself. But if, on the other hand, cruelty be not a necessary adjunct of those great natures which form the leadership of the race, but indicates rather defects and stains of imperfection that mar their greatness, then we should just as inexorably turn to the elimination of cruelty.

We have not been able to get a clear guidance in history

itself, nor in that current style of opinion which in the ordinary way serves us for guidance. Certainly when in the histories some noble trait of character is exemplified, as when to boldness and courage we add the unexpected flash of generosity, of chivalry, then we do feel that high character has been adorned with a grace beyond itself, a plume, a flower that breathes of the ideal. But yet we, the very people who are susceptible to these feelings of admiration, tolerate, when we are told that it is necessary for some policy however low or badly conceived, the most abominable exercise of cruelty towards others. Day by day, in our histories and in our newspapers, we become acquainted with stories, presented entirely from a partisan point of view, and reeking with cruelty, which we accept with a smug sort of under-thought that it is profitable, and therefore great, because while severe it is so profitable.

And then, finally, there is the better motive of a certain vague fear that in giving way to indulgence we may be allowing the entry of a certain dry rot, which will mollify, and in a sense corrupt, our characters.

I will touch on that in a moment by an illustration. When a young student at the university, I once heard my professor of engineering say that one of the finest passages of poetry he had ever read was that of two lines of Coleridge :

“ He prayeth well who loveth well
Both man and bird and beast.”

When I heard those words, I confess—and the confession fills me now with wonder—my first feeling was one of surprise, and to some extent of aversion. It is perhaps worth while to analyse that state of mind, for it may not be uncommon. In the first place I was surprised that the good professor should have spoken of these lines as poetry at all. I had been accustomed to regard, or to hear others regard, as poetry something that spoke rather of the languorous expression of love between human beings, or high-strung sentiment separated only by a mystical line from nonsense, or else patriotic boastings in strident verse. Here was a form of poetry, as the professor called it, that had no such appeal. I pondered deeply. I remember that at the

time I did give him a reluctant assent, but that only by virtue of a certain hypocrisy, for I held a deep reserve in my mind. What struck me as more questionable than the form of poetry was the actual sentiment. And what caused the anxiety in my mind arose after all neither from a cruel disposition nor from a low motive. I felt as if I were being drawn into a path which would gradually lead me to a soft and forceless and effeminated and eventually contemptible type of individual. All that, however, only flashed upon me as a vague massing of reserved consideration.

Subsequently the lesson itself worked into my mind ever more and more deeply, and I now see not only how much good sentiment these two lines contain, but how much real wisdom in view of the development of the best type of humanity. I say in anticipation of my conclusions that these sentiments should be infused throughout the entire population, beginning early when the mind is most receptive, as in young children at school, and that in place of the teachings that reek with slaughter and blood, these lessons of kindness and sympathy should be ever inculcated, and that not in the way of producing feeble or effeminated character, but bold, strong, and chivalrous types of humanity.

The Veritable Criterion

Here now I come down to the veritable criterion. Cruelty is the antithesis of sympathy. Sympathy arises naturally when the conditions of the life of others are regarded by a mind of deep receptivity and wide outlook, and the higher these qualities, the more ready the flow of sympathy. This does not mean merely sympathy with suffering; it embraces also sympathy with the joys of others. Sympathy is the great poetic quality. Sympathy not only has this recommendation, but to those who cannot see good in anything unless it has a material manifestation, I say that sympathy is the counterpart of co-operation, and co-operation finds its advantages in the very conditions of our individual beings, and in the circumstances which surround us in our life in society.

Sympathy is not incompatible with a high sense of duty which might, at times, dictate a severe attitude and adamant resolution. But acts committed in this sense

are not necessarily cruel. Cruelty arises in the infliction of unnecessary suffering, and it is fed by the delight of satisfying the passion of our minds which gluts itself in the contemplation of the suffering of others. Those passions that run counter to the spirit of co-operation are the reverse side of the medal of finer emotions, and their activity is the sign either of a lower intellectual development or of the downfall for the moment of better inspirations. Cruelty, then, is never the sign of a "strong" character; it has its roots in blindness, in perversity, and in cowardice.

Justice

The same causes that produce the feeling of sympathy give rise at length to the sentiment of justice.

If we have a clear visualization of the conditions under which others live and work, and with that a well-developed feeling of sympathy, and thence a sense of community, and the intelligent recognition of the need for a rule of general application, then the sentiment of justice is inevitable.

This becomes embodied in the formula: "Do unto others as you would that they should do unto you"—but it must not be understood that the sentiment of justice implies a preliminary calculation of the benefits that would accrue to the individual under a system of justice rather than under a system of injustice. It is true that on that side there is an advantage, but that is a benefit derived from the being of things, just as the advantage of co-operation arises from something deeper than a cunning reckoning of results.

In the actual development of society there would be always found some authority set up, as, for example, by sheer brute force, rather than that by virtue of a sentiment of justice the suggestion would arise to establish some authority to realize that conception.

The experience of the operation of that authority would be felt, by virtue of sympathy, as if the application were to be made personally. For instance, every member of the retinue of a savage chief, who was liable to fits of arbitrary violence, would feel that he might in his turn become the victim. Similarly in the case of a wise chief who rewarded according to services or merits, the personal motive would also favour the régime of justice.

There is not in rudimentary societies of men any "Contrat Social," such as Rousseau imagined, set up to regulate the terms of mutual dependence and obligation of the members of the society. The "contrat social" is a conception of a somewhat abstruse and developed character, and some mode of regulation must have been in good working order before such a notion could be even entertained.

The origins of the institution of authority and of the sentiment of justice are to be found deeper than either the calculation of benefit or the appreciation of a well-adjusted order.

Certain considerations aid the spontaneous movement of sympathy, and amongst these is the intellectual faculty. Every act that tallies with itself, every promise that is fulfilled, every measurement whether by space or weight that fulfils a condition, every balance that is struck, as for example in exchange and barter, each one of these contains a principle associated with that justice.

From the sentiment of justice arise by the next step the institutions that give it formal authority, and that carry out the edicts. In the actual development of society we should doubtless find here again that the means of action of this kind were in existence long before the complete recognition of the abstract principle of justice; but as the operations became familiar, and the effects were observed, the principle of justice would continually operate to determine the decisions and to adjust the measure of the punishments or rewards.

Here I would refer again to the analysis suggested by Psychology. When the conditions of the physical correlative to sensation are established, sensation arises spontaneously; and by the very constitution of our minds there follows a train of processes amongst which is generalization.

Hence there is no one moment of the time when the individual reasons: Generalization is a faculty of high economic value in thought, I will adopt it. The highest form of generalization, such as that employed in scientific speculation, is developed from a rudimentary faculty of generalization, which is not invented or adopted, but which comes into existence automatically and inevitably, therefore "instinctively," at the dawn of thought.

So when the objective and subjective conditions are provided a certain comprehension takes place, and feeling arises, which in one direction of its natural manifestation is sympathy, leading to helpfulness and co-operation; and in the negative form is hate, or aversion of some kind, tending in its action to cruelty. Thus still by natural growth, and not by selfish calculations, the sentiment of justice emerges and waxes strong. But just as the faculty of generalization in its high manifestations can be trained, so also from considerations of calculation, if only they are made general in application, and also by the play of the intellectual activity, the sense of justice may be developed, refined, and made delicate and precise.

There is one word which should be here uttered to round off the appreciation of justice, and that is "generosity." Descartes insisted on the value of generosity and made it the theme of a remarkable discourse. There is something very noble in this conception, if its meaning be caught as Descartes intended, though it is an insufficient foundation upon which to base a scientific system of ethics.

What underlies its value is this—that we are liable to be misled by gaining from our personal standpoint a perspective which is exaggerated in favour of our own interests, desires, and prejudices. Let us therefore cultivate even in our thoughts a habit of generosity. It will at first appear to us as something added, something delightful and brilliant, to the solid virtue of justice. With experience, and especially in the retrospect, we shall find, if we be not blinded by selfishness, that nearly always when we thought we had been generous we had only rounded out to justice.

The institutions which derive from justice are not then merely associated with the courts where punishments are inflicted or quarrels decided. The spirit of justice should be infused throughout the whole body of the laws and the administration, and it should be one of the guiding principles in the mode of government itself.

Justice should preside over all the arrangements, whether by official institution or otherwise, for protecting children, or for smoothing down the disabilities that arise from age or from incapacity incurred in the performance of one's duty as a member of the community.

We see here again that from fundamental principles, which are the ultimate determinants of ethics, we come to those secondary standards which consist of institutions and regulations, and which when established and administered on proper lines serve more directly for guidance.

From the basic plan we have laid down, therefore, with its main standard form we now begin to see the lines on which the complete system may be elaborated.

CHAPTER V

STANDARDS OF TYPE

Suggestions from Biology

WE have seen already in the discussions of the principles of Truth, Energy, and Sympathy, that the observance of these principles leads naturally and inevitably to certain developments, both of our mental faculties and of the institutions which correspond to them. It is in the task of framing institutions that we may seek for help in the study of natural organisms.

Let us, therefore, now cast a glance upon those arguments derived from biology to which Herbert Spencer attached great importance. We saw reasons for not accepting his conclusions as completely satisfactory, but there are valuable suggestions in his method. By taking the extremes of the animal creation, the amœba and man, he was able to throw out into strong relief the characters which specially marked the development of man. It was rather in the selection of the great distinguishing traits that he failed to establish a base on which he could proceed infallibly to erect a true system. Nevertheless, this manner of objective regard has something in it of great force and persuasiveness. Let us therefore look at man as an instrument, so that we can direct our attention to the perfection of those parts which are susceptible of improvement.

When we examine man from the mechanical point of view, we find that although the total structure has many points of interest, and of great variety, yet the principle of the mechanism is relatively simple. The problem given to the Great Artificer in the fashioning of our human race has been the construction of a machine of high efficiency while working in material subject to many limitations. The chief function of muscle tissue, for example, is to contract; and a way had to be found by which, employing the elastic

faculty alone, a machine capable of a great variety of movements could be devised. When a muscle contracts it tends to bring together the parts to which it is attached, and in order that, utilizing this circumstance, a considerable variety of postures and movements could be devised, it became necessary to use a jointed structure. That jointed structure is the skeleton of the human body; the motive power is found in the muscles. The stimulation of this motive power is derived from the efferent nerves which proceed from the central nervous system to the muscles; and the indications on which the stimulating impulses are sent out are derived from the afferent nerves, which, though not as a rule proceeding directly from the muscles, take their origin in parts, as for instance the skin, lying in particular relation to muscles, or to the bony framework activated by the muscles.

This is not the usual manner in which the human body is regarded, and for the moment it seems rather to lessen that sense of beauty which we derive from the immediate aspect of physical development in its perfection. Nevertheless, though not insensible to these effects, I would remark that the more this analytical study is pursued, the more powerful becomes the impression of wonderful adjustment, of the marvellous co-ordination of a great variety of different actions, and finally a higher appreciation of beauty when we behold it arising at length as the crown of all these arrangements and activities. It was not an artist, but a physiologist¹ who once asked me, with a sort of awed enthusiasm, to admire "the wonder of the knee-joint." The foot, whose beauty is generally relegated to a secondary position by those whose ideal is the fashion plate, and who mutilate it and deform it in their quest for that shining perfection, is in itself a marvellous object, and at its best a thing of beauty.

As we examine the human frame in this way, we are struck, not only with the simplicity evinced in the main design, but we also come across little incidental problems which suggest those exercises of ingenuity which delight an engineer in dealing with details, after he has furnished the main design. One of the movements of the eye-ball

¹ Sir William Gowers.

has to be carried out by means of a muscle¹ which, if it had simply a direct connexion from eye-ball to bony attachment, could not produce the result. In this case the principle of the pulley is used, and a particular fascination here is found on account of the restriction of the materials out of which this little structure must be fabricated.

That being so, those who are impressed by these matters are not likely to under-rate the body, still less to seek to debase it, after the manner of the old saints and mystics, on the ground that the body was a mere material shell unworthy of the spirit that inhabited it. I think it was Plotinus who declared that he was ashamed of the body, but possibly he gave too general an expression to the sense of his personal defects.

One of the early suggestions that come to us in contemplating the body, and in searching always for ethical standard, is that of a sense of the limitation of its functions. When we contemplate our position in the universe we feel a sort of revolt against all that imposes a definite curb and barrier to the development of our powers. And one of Carlyle's biting satires is that contained in "Sartor Resartus" in an epitaph upon the man whose life was that of a noble sportsman, and the general effect of whose activities was summed up by Carlyle in the amount of nutriment which he had brought down, eaten ad digested.

I do not insist on sentiments and guidance of this sort; I am continually seeking for deep and sure standards, and I should be content to accept their indications even if they ran counter to my pre-suppositions, and yet not the less when they respond to my feelings and aspirations. Let us see then whether nature has intended to impose upon us the limitations of our physical frames.

There are relatively few muscles in the human body. Anatomists generally give a figure about four hundred and fifty. An old anatomist, Keill, who seems to have been one of the first to enumerate the muscles, counted four hundred and forty-six that came under his definition of dissectable. A noted English anatomist, Professor Wright, of the London Hospital, has given the number at six hundred

¹ *Obliquus superior.*

and seventy-four, although he says that it is not possible to be precise, for sometimes a doubt may arise as to whether two parts are separable, and the muscular system of some people is actually richer than that of others.

That being so, all our movements are dependent upon the different modes of co-ordination of these muscles, and although that may give a great variety of movements, yet when we classify these movements and arrange them in categories it does not offer a very wide scope for originality of posture or action.

The efferent nerves proceed from the centre of the nervous system. Through countless generations of development we have reached a point where the great proportion of our movements, even of a very complicated kind, are performed unconsciously. When I spoke of the Great Artificer fashioning our bodies, I did not mean to imply that proceeding directly from the dust He produced a human being as we know it. There has been the gradual development, with adjustments tried and established by myriad experiences, before it becomes definitely adopted as part of the make-up. That so many of our processes then are automatic indicates how extraordinarily careful has been the adjustment and what vast periods of time have been necessary to account for it.

A good few simple adjustments are arranged in the spinal cord. Superimposed on those adjustments are others which are more occasional and varied according to circumstances. The seat of the adjustment of these is the cerebellum. We find accordingly the cerebellum is well developed in birds of prey like the condor, and great wild beasts like the lion and tiger, and in active marine animals like the porpoise.¹

In man also the cerebellum is well developed, but rela-

¹ Some physiologists, struck by this fact, have traced out picturesquely the main lines of action from the cerebellum to the final outcome in physical energy, and they have adorned the process with the term, "Kinetic drive." This term is picturesque and useful, but when they go farther and assert that they build up a system of psychology upon this observation, they talk sheer nonsense. Instead of an analysis showing us the mechanism of psychal action they make play with such vague terms as Kinetic drive, and then jump to remote conclusions which they have already reached in quite another way, and without any satisfactory nexus between the result and the foundation.

tively not nearly so well as in these wild animals. When we study the movements of a beast of prey where, from day to day, its very life depends on its activity and prowess, we see the glory and beauty of perfect physical form and grace, as for instance in the movements of the tiger; but even while we feel that we cannot emulate such activity, we see the limitations of such a life.

When man compares himself with other animals he is forced on many grounds to acknowledge his inferiority. He has not the size of the elephant, the swiftness of the cheetah, nor the digestion of the wolf, nor, relatively speaking, the admirable leaping faculty of the flea.

Importance of the Use of Tools

When we look into his make-up on the physical side we find not only is the cerebellum a proportionately smaller part of the brain, but that the greater part of the co-ordinations which it effects are not those giving immediately an immense impetus of energy, but that they serve movement undertaken in order to employ some kind of implement or tool.

Here we come to something decisive. Man is the only animal that uses mechanical implements habitually, and that fact alone is of enormous importance with regard to his whole destiny. All the other animals depend on their own persons for the work which they accomplish. They tear with their claws, or rend with their teeth. That again imposes limitations. The first implement that the primal man used may have been a club with which he smote or a stone which he hurled. Whichever it may have been, he had already turned into a road of which the developments were limitless.¹

When he begins to employ a tool he will employ another. He will find better results with one kind than another. His attention will be attracted to the difference of the tools themselves, and in the place of accidental discovery he will resort to deliberate shaping. That will imply accessory tools.

¹ Professor J. A. Thompson, in the course of an interesting lecture for children, remarked that a certain lizard had begun to stand on its hind legs, and when an animal does that, he said, something is going to happen. It will; and if the animal can take the next step of employing a tool, it will inevitably proceed to great things.

Once entered upon that path he will be led on step by step, by ever new advances, to new wonders. He will be led to discriminate between different materials, and this will lead him to the manipulation and the alteration in various ways of his materials. He will employ cutting instruments. He will be launched into the study of mechanics. He will employ fire and water, and will have begun his fascinating course of chemistry.

The use of implements will inevitably lead him to the tillage, however rudimentary at first, of the soil, and when once his life, or the life of a part of the race, ceases to be that merely of hunting and acquires a more settled character, then new reaches become opened out to human destiny.

I have heard a learned lecturer describe in what way civilization took its rise from the valley of the Nile. His argument was that the regularity of the phenomena and the fertility of the soil allowed long periods of leisure favourable for reflection, while at the same time prompting the research for the causes that produced these effects or the natural phenomena associated with them. Whether this account be historically correct or not I do not know, but certainly the principle is there well stated.

In regard to man's physical development, all the adjustments subsequently made do not affect the number of his muscles, except perhaps now and then in the direction of allowing certain of them, seldom used, to degenerate and to remain, if at all, as mere vestiges. Meanwhile, however, his nervous system has continued to develop, not again in the spinal cord, but in the brain, and not in the cerebellum, but in the cerebrum.

If then human life has any meaning at all, and if man has been led on to a higher destiny by the modes of development which distinguish him from the brutes, then certainly the size and complexity of the cerebrum is a mark of higher development, and that affords us a standard which we may take as determining in our search for ethical guidance.

There is another aspect in which man differs notably from the beasts of the field: he is able to leave a record of his thoughts. This faculty depends on the tool-using accomplishment, at any rate in regard to rudimentary tools, and therefore must have been developed later.

A dog who buries a bone beside a tree is making use of a rudimentary form of record; but he has no means of communicating this record to another. That implies besides the faculties that the dog has in common with the man—association, symbolization, memory—a greater mental energy in man and wider field of association. All these faculties become developed with the tool-using habit.

A great advance is made when the record is by language, though then also the gradual development is traceable.

No one who has observed animals attentively can doubt that they have language, and, in the case of some, an extensive language. Dogs and cats have a large scale of notes, and besides the vocal language they convey their meaning, either to other animals or to human beings, by various other signs, involving touch and vision.

The great leap of genius of the human species has been the invention of an alphabet. Our progress in intellectual matters has been step by step, the whole acquirement at any period helping to make the next advance possible; but of all the successive steps that which seems the most wonderful, because it seems to imply at an early stage a fine analytical power devoted to a definite purpose, is the representation of a sound by a series of symbols, devised to indicate each a point in this sound and an articulation.

No doubt even here it is possible to imagine steps of association by which the ultimate crowning glory was reached; but that these were not inevitable is proved by the fact that nations which have reached a high stage of civilization, and which have cultivated literature with affection, have missed the device of letters. It is no wonder that the ancients ascribed to the alphabet a supernatural origin.

Once started on the path of recording, it is clear that man was destined to develop the faculty.

The records which in early clan life took the form of songs, singing the greatness of the clan and its chief, were delivered from generation to generation as holy traditions. When at length these songs, or at least the words, were written down, then a record was obtained that often survived the loss of memory of the bards, or even the obliteration of the clan itself. The immense importance in the ethical world of this fact was seen when, after the fall of Con-

stantinople had driven Greek scholars to various countries of Europe, the records of the Greek thinkers were made accessible, and the path of regeneration of humanity became indicated.

A fresh generation is certainly not born with the wisdom of that which preceded it; but it is also true that it is not necessary to make a fresh start each time. The cerebrum had become developed in accordance with our acquisitions,¹ and these make part of the environment.

Then, once the way has been ascertained to the solution of a problem—and all our difficulties in some guise or another take the form of problems—it is easier to follow the path already correctly traced than by various tentatives to find it anew.

We thus start each generation with an ever-increasing intellectual capital, and it behoves that generation to become developed up to the point corresponding at least, and not to recede or slacken. We are the "heirs of the ages," but effort is required lest we slip back in decadence.

Here then we are far away from the exercise of mere animal faculties; and casting now a glance upon the muscular system we see that the muscles are instruments only; they subserve the purpose of locomotion, of tool using, of recording; but they are not in themselves the great representatives of our faculties, nor is their cultivation the "chief end of man."²

¹ This is true whether the process be by Natural Selection, or whether this be aided, no matter in how small a degree, by the principles of Lamarck. It is consistent with Weismann's demonstrations.

² I have worked at this argument in a manner which may seem laborious even to the point of absurdity, for most thinking people will concede at once that the development of mental powers is associated with the development of the brain, and that a man of high mental development is superior to a man of low mental development. No doubt that is true, but I do not want to be content with facile concessions, or general consensus of opinion. Opinion is often very misleading, and in nothing more so than on this very point.

Philosophically and theoretically, it will be accepted that a man of high brain power is superior to a man of low brain power, but when the matter is brought to practical application, and the question is raised as to following the direction of one or the other, it often happens that the man of low brain power is preferred, and it has hardly ever happened in the history of the world that a man of the highest intellectual development has been the ruler of the state.

The superiority, in an ethical sense at least, of the mental activi-

If now at this stage we return to the amœba, we see that man differs from him in the association of, and thence in the co-operation of, myriads of his kind; this rather than in the

ties over the physical, will again be generally conceded, but that is a mere formal acceptance.

Let us take the criterion of relative values afforded by our current literature, whether in books or newspapers. We find columns of newspapers, even those that exist for propaganda purposes, filled with exploits of men entirely on the physical plane. To come to a point, it is thought laudable for men over the age of twenty-one to spend the livelong day, and all the days of the week, knocking a leather sphere about a field. That is not precisely the way in which the matter is expressed in the popular prints, but I am endeavouring to analyse down to the essentials of things, just as at the beginning I sought for the main features of human physical movements. Schoolmasters speak of the character-forming value of games, and there is a general chorus of praise of such a mode of life as that indicated; and those who, devoting their whole energies to these pursuits, become even moderately successful, are hailed as heroes. Even amongst schoolmasters, even amongst ethical teachers of note, and amongst poets, this high appreciation of physical excellence, or rather aptitude for artificial forms of sport, is carried to such a point as to produce prejudice against and disparagement of brain-power. Hence the respect for the man who "muddles through."

Now in order to get out of the prepossessions of the moment, let us stand on the ruins of Babylon. Those ruins are not easy to discover at the present day, so completely has that city disappeared. Yet we know from records that Babylon was once a centre of a wonderful life, the high peak of civilization of the time, the seat of powerful government, and the hot-house of all those pleasures to which we still attach the highest importance. Standing on those ruins, we feel in spite of ourselves the invasion of a sad sentiment, as of the evanescent character and the futility of so much of human works. Then we inquire how did the energy that built up so much grandeur become waste? What were the young men doing, who should have defended their possessions? How did the heirs of the ages, after achieving so high a point, succumb? Where was the energy, where the spirit of the flower of the aristocracy who should have been together in the duty of defending their heritage? What were the aristocracy doing?

And suppose the answer came, translated into our own forms of thought and language: They spent all the livelong hours of the day and all the days of the week beating a leather sphere about a field! One wonders, not that they should have fallen, but that they should ever have arrived at such a point.

I do not speak as one who despises games. In my "Religio Athletæ" I have endeavoured to give something of the enthusiasm I have felt for the beauty and the glory of splendid sports. But in spite of the schoolmasters' cant about character-forming games—a shallow phrase which is only true with regard to the games themselves—I see in this over-devotion to games not the sign of power, but of decadence. A masculine body is a fine thing, but in pursuing toys we should not lose masculinity of mind, for that is still greater.

definiteness of action in time and space on which Herbert Spencer laid particular stress. This co-operation implies a system of controls and co-ordination of efforts; and hence a differentiation of functions from part to part. It also implies, together with greater mass, greater energy, for the energies of the single low organisms are utilized. For the direction of this energy we have the muscular system working on the skeleton as we have seen; and for the guidance of this system we have the central nervous system and the nerves; and for the upkeep and regulation of the whole system we have the respiratory system, the circulatory system, the digestive and excretory system, the glands, the skin, then the organs of sense.¹

Then above all we have the great marvel, the perpetual miracle of consciousness. I have discussed in "Psychology: A New System" the question of the relation of body to mind, and while I conclude that the brain is the principal organ of the mind, I mean by that no more than that to every psychic state there is a physical antecedent and correlative, in which the activity of the brain, and particularly of certain parts of the brain, is interested.

But it is that consciousness, developed step by step into high intelligence, that ultimately forms the supreme guide to all the functions, and that not merely in regard to the individual, but in his relation to the external inanimate world and to society.

Since the hand that directs the instrument should be rated higher than the instrument, and the mind that directs the hand higher generally than the hand, it becomes evident that the development of mind should be regarded as one of the objects of the race.

What then should we regard as standards of mental development? This question has already been virtually answered in the course of the discussion.

Complexity of Type Corresponds to Development

By dint of co-operation, and hence of co-ordination, of faculties, which was necessary in the mental world as in the

¹ The study of the harmonious working of these is extraordinarily interesting and not remote from our subject, but the details would lead us too far afield.

physical, we reach successive systems of controls. The higher the type of mind, the greater the degree of organization or of complexity of development: the higher the degree of complexity, corresponding to generalization in the mental sphere, the larger the scope of control of life and thought.

This complexity should, however, correspond to the external reality, and as that is a point of importance sometimes overlooked, it is advisable to make it quite clear.

We have seen¹ that the process of education has its physical counterpart in the opening up of lines of communication between cells or ganglia in the brain. There is here no necessary materialistic assumption. It would suffice for our purpose to regard the form of development which really takes place as being but the diagrammatic representation of the mental processes.

In this way the relation of idea to idea becomes represented by the line of nervous communication between cell and cell; and the relations between more general notions and other general notions are represented by the communications between ganglia, which themselves show lines of communication with cells. And so the whole process of thought becomes typified by this structure of communicating lines of nervous impulses, the whole being elaborated somewhat as a telegraph system, built up by communication between sub-station and sub-station, then communications to higher centres controlling sub-stations, and so on till we reach the head office, represented in this case by the cortex, or part of the cortex, of the cerebrum.

If this high development bear to the external world also the relation of a diagram to the original, then all the movements of the mind corresponding to this schema are in accordance with the happenings, within this domain, of nature. Hence the individual gains knowledge, prescience, and control. He has reached, by all our standards, a higher degree of development than those in whom these marks are absent.

But a high degree of development, intrinsically, does not always correspond with the extrinsic reality. In the old

¹ In "Psychology: A New System" and in "Principles of Psychology."

days, when men of great brain power filled their minds with the lore of astrology, the learning of alchemy, when they talked a sort of pseudo-science puffed out with mystic nonsense, they were not men of a higher standard than those who, with less culture of this kind, had a modicum of common sense. Their forms of complex development did not correspond to external nature.

Even when the thought is true and real and extensive there may be lacking a factor that corresponds to a possible higher development. Thus, for example, the knowledge of the botanist, Brown, was not less extensive and accurate in detail than that of Darwin, but he had failed to embrace, or, in a philosophic sense, to control all those facts by the affirmation of the general law of which they represented the particular cases. The high use of the faculty of generalization corresponds to a succession of controls.

If now in all this we bear in mind the value of mass in itself, or the analogue of mass in the mental life, we complete our standards, as far as mental energy is concerned. The difference between the constitution of an atom and that of the solar system is, according to modern views of the atom, a question of accretion and of mass, obeying the same mechanical laws of attraction and of repulsion. Finally, the product of high complexity¹ of development, with power of mental activity, gives the criterion of development with respect to energy.

* * * * *

Another question arises as to the proper direction of the forces implied, for mere intellectual power is not sufficient to ensure a high ethical character. Here we find the principle of Sympathy necessary to complete the conception.

Then, finally, something perhaps not less important, but more intangible, the discussion of which I reserve—that of the total effective effort as having a meaning in the cosmical order of things: Purpose.

¹ It must be clearly understood that complexity, for the sake of complexity, is not meant, but a complexity that arises naturally and inevitably from a progress in development by co-ordination and control; this complexity must be in accord with the constitution of external nature.

Criteria of Values in Practice

In order to make discussion clearer let us leave abstractions for a while and see how the matter appears in the concrete forms of actual experience.

Some time ago an important French newspaper held a sort of referendum on the question as to who was the greatest of Frenchmen. The popular vote was strongly in favour of Pasteur. That result was in itself a sign of the march of civilization, for in the whole course of history there have been few generations in which a man of science would have been held up as the best representative of the race. Perhaps there is no other country, even now, where a result similar to this would be obtained. I once made a proposition in Parliament which, like many of those derived from common sense and reason, had an eccentric appearance in that assembly. It ran upon the same lines of thought as that which designated Pasteur as a man whose work deserved high admiration. I suggested that the approaches to Parliament, such as Whitehall, should not be adorned by the statues of kings half lunatic or entirely vicious, or of military commanders illustrious for nothing but their titles, or even second-rate statesmen, but that men who had done real service to the country and humanity at large—Darwin, Faraday, Clerk Maxwell, Milton, Keats—should be honoured. This proposition was rejected, not without some amusement to the members, so that in place of having contributed anything to ethical principles, I had to be content with adding to "the gaiety of nations."

This experience, and a thousand others of like character, have forced me again and again to sound the validity of my own principles, and to trace them back to their source. I have always risen comforted and strengthened from such examinations, but experience has taught me that in certain communities, and in certain circumstances of life, clear views and good principles may be dangerous possessions.

Let us therefore try to regard the matter in a larger scope. When a nation is finished with, and nothing but the records of its salient achievements come down to us through the centuries, and when we are then little moved by racial or national prejudices, what is it that we prize? Take Greece, for example. The study of Greece is always fas-

cinating, not only on account of the extraordinary achievements of a few great men, but because from the limited form of the whole theatre of operations we have the impression in the distance of studying the working of a model from which we may derive lessons.¹

Returning now to Greece, with this warning of circumspection, we find that certain phases of activity, the fevered life that agitated the city in politics and petty quarrels of personal supremacy, have little interest now. That was the activity at a comparatively low level which we have already noted. On the other hand many of us are still interested, after this lapse of centuries, in the reforms of Cleisthenes, who sought to break down the murderous rivalry of small communities separated by hilly ridges or little streams, and to show that there might be community of interest which would bind these people together and give them a fuller and greater life than that of isolated clans. No doubt Cleisthenes met with great opposition, not only on the side of material interest but on the plane of high morality. The fierce slogans of patriotism, and traditions, and cults, and customs, and pride of family and of village, were, no doubt, as loud and vehement, in a proportionate scale, in his day as all the cries of ignorance and prejudice which in our time separate peoples and nations.

Yet the work of Cleisthenes prospered and became feasible. Once realized, few thought of undoing it. And now, when without prejudice we can look back upon it, we

¹ It was precisely that limited aspect of Greece which suggested to Cobden that the affairs of Manchester, representing greater social activity, were a great deal more important than those of Athens. That has been described as a "commercial traveller's view of history," and there is truth in that observation. Nevertheless, Cobden's view responds to a certain phase of reality which has its importance, just as that of another member of Parliament, a colleague of mine, who told me that he had once visited Venice, but that he had spent the three weeks of his stay there mainly in helping to coal the ship. As he was sailing off, he looked back, he said, and he thought that Venice looked pretty on the water, but he immediately modified this eulogy by saying that there was more business done in the New Cut of a Saturday night than in three weeks of Venice.

We have already given full value to the factors here correctly, as far as they go, appreciated, for we have taken into account in our formulation of the principle of energy not only high development but mass.

find that it responds to the principles which we have here laid down—of Sympathy, and in no less a degree, though indirectly, of Energy and Truth.

The names and works of few great writers from Homer to Sophocles and onwards, and the records of a few great artists and the realization of a few beautiful conceptions of architecture, have descended to us. Then we find in the direct line of the development of our institutions the wonderful thoughts, built up in fine sequence, of the men of science, of Thales and Pythagoras, Empedocles and Hippocrates, Plato and Aristotle, Eratosthenes and Hipparchus, Apollonius and Archimedes. Their works remain not merely to stimulate us, but to inform us, even at the present day.

Let us now look at the work of some of the Moderns, so that we may perhaps see more clearly the good reason for preferring Pasteur to François I, or even Napoleon Bonaparte. Pasteur began his scientific researches in the field of chemistry, particularly in crystallography. He was one of those who had the clearest perception of the inter-relation of all the sciences, and from these studies he was led to those of minute organisms in the organic world.

After the defeat of France in 1870 he formed the resolution of applying his scientific skill to the upraising of his country, even in the commercial world. There were two great spheres in which he thought that he might, with advantage, apply his researches; one was that of the silk-worm industry, another that of vine culture. In both these industries there had been great loss due to the ravages of small organisms, and Pasteur's work was successful in combating these in both cases. Here is a very simple example of the commercial value of science. The devastations of the phylloxera had been known for generations, but the question of its elimination had never been properly tackled, nor could it have been otherwise than by the means adopted by Pasteur.

After his first triumph Pasteur continued his researches in allied fields, and showed how to combat anthrax in cattle, and subsequently rabies in dogs and human beings. He also gave the impulsion to the vast amount of work in the whole domain of bacteriology, and although that work is still near its beginnings, it has been of inestimable value in

safeguarding the human race from some of its most deadly scourges.

French people who voted preferred Pasteur to Napoleon, although in orthodox histories Napoleon's deeds are blazoned forth in a most exciting manner and with trumpets of eulogy, while Pasteur is hardly mentioned. Napoleon was a man of not less cerebral activity than Pasteur, though on the whole this activity represents a lower level of thought. He was a man extraordinarily well endowed in many particulars, and in the early part of his career he figured as one of the heroes of human progress. Then he retrograded, and in the end he left France somewhat diminished territorially and wellnigh exhausted physically. Yet again I feel my admiration for the intelligence of the French people who thought Pasteur's work of regeneration more praiseworthy than the brilliant exploits of slaughter of the conqueror.

When we look closely into the lives of men of science of that stamp, we find not only the splendour of the actual achievement, but something of heroism, even of a romantic kind, and greater than that of many of the gaudy, vanity-mad figures of history.

Let us consider for a moment the work of Darwin. That had less in view a direct material interest than the satisfaction of a natural curiosity. Darwin's work attracted attention less by its intrinsic scientific merit than by the fact that his conclusions ran counter to accepted beliefs. It has given rise, however, to a vast amount of research, and the result has given us a clarified view of the operations of nature in the organic world. The immediate material results here are possibly less in evidence than in the case of Pasteur's work, but even in the elimination of error a great benefit has accrued, for it has had the effect of diverting human energies of a high value into fertile fields where realities are met with. Eventually the domains of Darwin and of Pasteur will be found to coalesce, and our control of the organic world will be enormously increased.

I have picked out these one or two examples, not necessarily because I think them the most important, and already we begin to have a vision of the great influence of thought at a high level in transforming the character of the world in which we live, like a morsel of leaven fermenting in a vat.

If we continue researches of this kind we shall discover, as I have already indicated, that whatever is new in the actual direction of civilization, as apart from its delights or its consolations, has had its origin in the thoughts of some student of science who has himself been moved, not by hopes of material advantage, but by an irresistible bent in his mind, to bring to light some truth of nature.

We may be now better able to appreciate a remark, which was perhaps a little affected and dramatic, of Goethe. On one occasion, receiving a friend from Paris, he inquired eagerly for the news. His friend began to tell him of some troubles of politics; it was about the time of the Revolution of 1830.

"Oh, I was not thinking of that," cried Goethe. "I was anxious to hear the latest of the dispute in the French Academy between Cuvier and Geoffroy Saint Hilaire as to the origin of species."

* * * * *

The Highest Form of Intellectual Activity

A certain suggestion once occurred to me to devise a scale of complexity of development, so as to afford a standard of type of intellect. I was inclined to give the palm to the type of mind which becomes pre-eminent in physics, for I thought that the modes of reasoning there were both more subtle and more sure and more consecutive, while the results which followed seemed proportionately more magnificent. Certainly there is something very attractive in the contemplation of the development of the wonderful apparatus of mathematics, founded on conceptions which in their delicacy have eluded the definition even of many of the great mathematicians who have employed them; yet giving a sense of solidity and confidence to the structure when once established; and then the application of this to the testing of nature, and the winning from deep depths of concealment the most astonishing secrets and brilliant results.

On the other hand, I once heard a learned professor of Natural History place his own science on a far higher relative plane. He pointed out, and there is real truth in his observation, the narrowness of the immediate intellectual regard of the mathematician, and even of the modes of his

speculations; and he contrasted this with the diversity of interests and the more nebulous presentation of the problems in his own science, with the corresponding demand for greater inventiveness and more inspirational flashes of genius.

My professor was certainly wrong in his disparagement of mathematics, even admitting that, in the complete scope of things and in proper perspective, full allowance must be given for his criticism; and it is also true that most of his own work was rendered sterile by his refusal, on the grounds of orthodoxy, to accept the lessons of evolution. Yet looking at the matter again, I find that whether a highly developed mind be devoted to mathematics or any kind of physical science, or to the sciences of the organic world, such as bacteriology, there will be found not only an absorbing interest, but opportunity for speculations as subtle, as various or as comprehensive, as lies within the capability of man.

In the field of physiology, to take almost the first example that arises, how great is the importance of the division between the motor and sensory nerves; and yet when one knows the way, how simple the means of determination, and how decisive the demonstration!

Wherever one touches nature at some high point of vision, and a discovery be made, extraordinary developments arise unthought of by the original investigator. An observation which at first sight might seem trivial becomes at length not less materially important than the discovery of a new land. Thus I can enter fully into the feelings of Van Graaf, who, having in his dissection laid bare the thoracic duct paused with his lancet in hand, almost awe-stricken, before he plunged it into the vessel which would yield him its secret.

In quite another fashion I can appreciate the germinal idea, and the impulses derived from it, of my friend Nikola Tesla, who said that his imagination had been captured by the conception of power, not that of the power of hectoring other people, but that of drawing from nature's reserves vast energies for the use of the human race. The old Greek philosophers were astonished and rendered curious by the attractive power of rubbed amber; from these speculations

we have been led onward till we reach such a conception as that which animated Tesla, of capturing the forces which were going to waste at Niagara; and from that again to proceed to still higher conceptions of seizing power and making it so plastic and docile as to solve great industrial problems and to help to foster co-operation between the nations of the world.

* * * * *

Here I hope not to be misunderstood. If the question be put to me directly as to whether I would like the country to be directly ruled by scientific men, I would reply decisively: No.

In the first place it is extraordinarily rare to find a scientific man of wide general culture. Such a type as Leonardo da Vinci is very seldom met with, and then not in a position to ensure acquaintance with affairs.

It is rare to find a scientific man of wide culture, even in science, or one who has a complete conception of the inter-relations between the sciences, or one who has a clear view of psychology, or one who has reflected deeply on those questions of ethics which should be the aim to which all these intellectual efforts are directed. The reason is that most of the men who achieve high distinction in science are "specialists," even to the extent of ignoring sciences which bear upon their own. In this sense, useful as the product of their researches may be, they seem to me not true men of science, at any rate of a high development, but fortunate mechanics working in a field where exceptional skill is demanded.

The limitations are sometimes brought about by a real specialization of faculty, but more often on account of distracting influences or conceptions, the exigencies of time, and deficiencies of energy.

A few men who have fulfilled the requirements of great general culture in science are Aristotle and Roger Bacon, Galileo and Descartes, von Helmholtz and Ampère; but these examples shine as bright particular stars in the galaxy of talent.

Further, though the width of their regards has aided them in the view of each of the sciences they cultivated, it has

also on account of the absorption of time and energy lessened their efficiency in most other sciences.

If we take the objective view that has been recommended here more than once, and consider the development of the brain as the schema of the intellectual work; and if then we try to gauge the import of that conception in regard to the complete world of activity that sweeps about us, we gain the impression of a small instrument working amid myriad impulses and phenomena and responding to few. Science therefore is in itself an incomplete culture.¹

As I read the life of Cavendish I felt the pathos of it deeply, and I found my soul invaded even with a strange intimation of fear. I had in fact hitherto attached an overweening importance to science as a sufficient discipline and culture, and here I seemed to be testing it by the results.

It may be said that Cavendish was an exceptional type, and certainly even on the purely intellectual side he may not have been quite normal; but the point here is that he was extraordinarily versed in science in the manner in which science is generally understood. Whatever any other man of science enjoys otherwise is therefore an added grace, not necessarily implied in the culture of science itself.

As a matter of actual fact, though I do not think that it is inherent in the nature of things, most men of science are deficient in certain qualities that go to make the ordinary well-rounded man of good education. Darwin describes how his sporting proclivities, and then his æsthetic pleasures, gradually left him, until at the end his only taste in this direction was a liking for good engravings.

These questions are not so simple as they appear at

¹ This is seen more plainly when we find a man who is great as a man of science, and who has very few other interests. Cavendish was not a man of science of the highest rank, but he was of that excellent and highly useful type, the man who weighs and measures with extreme care, who examines all arguments and all hypotheses as far as he can by bringing them to the tests of his instruments of precision, and who devises apparatus for scientific experimentation.

His life, apart from the achievements summed up in his scientific papers, is singularly devoid of incident. He was extraordinarily lonely, and apparently little touched, or not at all, by the various interests that stir others to enthusiasm, either of war, or politics, or art, or literature, or music, or society, or travel, or sport, or play, or indulgence, or vice, or avarice, or fame, or vanity, or service, or friendship, or love.

first, and I think that a close inquiry into the whole matter will show that it is not the direct influence of science, nor even the absorption of time and energy by science, that accounts for the gradual failure of æsthetic pleasure or livelier delights with men of science; it is rather that the mode of the life, and the character of the persons in the immediate surroundings, have the greatest influence in this respect.

That sort of semi-religious cult of science, to which at one time I was inclined to devote myself, has received many rude shocks, for I have found that in general men of science do not regard science as I do, that is to say, as something that opens up to us the windows of heaven, or gives us visions into entrancing vistas of human life; but vulgarly, they take it as a field of exercise of a fine faculty, and they esteem it for the emoluments it brings, or for the honours which follow as the result of success.

I say this is the prevalent appreciation; I do not say that there are not others who feel the entrancement of their work for its own sake. But even these, if again they are not men of wide culture, are apt to fall into the error of false perspective; they magnify their achievements, and they fail to see the great worth of others. This distorted view renders such men of science unfitted for public affairs.¹

In a matter of experience we find that whereas in France the men of science who take up public work are usually in the forefront of works of social progress or of ethical value, in this country their tendency has been reactionary, and there have been extraordinarily few examples among them of sympathetic and generous dispositions.

Also I retrace what I have said about the names and

¹ One of my experiences which had an amusing side was that once at a celebrated university where I took up a course in quaternions, an interesting branch of mathematics, the professor appeared in class, ill-kempt, awkward, ill-dressed, and not too clean, and completed the picture by pulling down a large flat note-book from between his waistcoat and his shirt.

On another occasion in conversation with a man of high scientific worth and considerable celebrity, I could not but notice his general negligence even of the ordinary rules of health in nails and teeth.

Small matters, it may be said. I am not so sure. They are indices, and they point out a man not well balanced in the world, not well educated and not of the "usage" which would fit him to direct affairs beyond his own speciality.

works of the Greeks which have descended to us, not to retract or to diminish the force of my words, but to enter a caveat that will call attention to the conditions of each generation of living men in its turn. They cannot all be men of high science; there are great fields of honourable work which must be kept in active life; there are the joys, the duties, the affections of all that makes the stuff of life in human society; there are the arts, the beauty, even the accomplishments of fine physique in splendid sports.

All these we must view, not merely with large tolerance, but with sympathy and zest and helpful encouragement. What I ask for rather is that there should be recognized as above all this something of higher mien, that kind of human development at its highest peak which implies science, and which is guided by science.

It is not needful that a specialist, a technician, should be taken immediately as a high ruler; but the intellectual value of these men, if only by way of advice in their own domains, should be utilized to a degree enormously greater than now. The ruler should not necessarily be a technician in science, but he should be acquainted with its main lines and purport, and particularly he should bring to bear upon his own particular work of direction the scientific spirit and method.

Finally, all this should come within the scope of the sciences of psychology and ethics. I do not say that because I have cultivated these studies with predilection; rather it is because I have apprehended this truth that I have turned to the technical study of these sciences with devotion. For from psychology we learn the inner secrets of the mechanism of thought, and hence the modes of the development of thought. From ethics we learn to conceive in a true manner man's place in the universe, and to obtain, if not an immediate answer to the question of Purpose, at least deep cleaving divisions that guide him in duty.

Without this all other learning seems shorn of its meaning and its flowering; with these all other science is infused with a spiritual sense.

Part III

ENCOMPASSING CONDITIONS

A consideration of certain great encompassing conditions that affect the meaning of Ethics ; such as the Immortality of the Soul ; the Ideal ; ultimate Purpose.

CHAPTER I

THE IMMORTALITY OF THE SOUL

OUT of a discussion of the principles of ethics the question may not seem to arise necessarily of the immortality of the soul. Yet I think that our conceptions of ethics will become greatly modified according to the view we take whether this life be the be-all and end-all of our conscious existence, or whether it be but a pause between two infinities or a preparation for a life, or lives, to come.

That the question is important for morals is already settled by the fact that nearly all the systems of ethics that have ever had authority amongst men have reposed upon that belief as the central article of their faith. In this world we are continually being admonished to be content, to suffer all manner of contumely and neglect, to observe without undue impatience most glaring examples of the inequality of fortune as well as the association of good fortune with qualities which run counter to the standards of the majority of the citizens. One of the most powerful arguments employed by those who would offer us either solace or admonition is that on a future occasion the thoughts and deeds of persons in this world will be summed up with an accuracy of judgment denied to us here, and that the good will be rewarded and the evil punished.

This doctrine, if it were true, might well reconcile us to bear ill-fortune in the relatively brief space of our mortal lives, for either those misfortunes which plague us are within our powers of endurance, or else at last, under a blow too severe of fate, we succumb, and then only the more promptly and surely ascend to our proper state of beatitude.

Before examining this position, not merely from that aspect of the matter, but in the deeper relations which remain even when we reject these authorities, I remark in

passing that the qualities usually signalled out for praise and promise of future reward are not those of high, intellectual development or determined search for truth, but obedience, humility, the disposition to resign the direction of our affairs to those who offer us these promises, and the spirit of content with inequalities and the willingness to allow this regime of injustice to continue from generation to generation to the detriment of one class and the material advantage of the other. Any tendency to rebel against these doctrines is met with the most violent opposition and the meanest forms of persecution, while the punishments promised for the wickedness of daring to think reasonably are so vindictive and terrible that, in their very horror, we seem to see glimpses of the frailty of the faith of those who impose them.

If in an ordinary way of the world a business man or even a guild of financiers in the City, who flourish some high charter before our eyes, were to ask clients to hand them over considerable sums for deposit in the "Bank of O Brasil, The Isle of the Blest," and if they were assured of dividends beyond the dreams of avarice, but not taking place within any definite time, it would hardly seem criminal that even the small depositor should ask some particulars of the foundation of the business, or even of the very existence of the bank; and if some audacious client who had demanded a balance-sheet, or even suggested independent auditing, were to be seized and imprisoned, with every mark of contumely, and flogged through the streets at the cart's tail, his fellow-depositors might be warranted in entertaining some slight uneasiness as to their own securities.

Translated into other terms, that little parable indicates the pretensions of most of the Churches, Christian or infidel, which have obtained great sway among extensive populations of men.

It is evident, for example, that if we are to perform acts of sacrifice and pay taxes of various kinds, both of a material and moral nature, it should make a real difference to our conduct even in this world whether any of the promises on which we have relied are to be redeemed.

A disconcerting fact about this sort of spiritual banking

is that of the very rivalry of the different establishments. They are incompatible one with the other. That point need not be insisted upon, for some of the bloodiest wars which have ever disgraced humanity, and hosts of most abominable acts of persecution, have been based by these establishments themselves upon that assumption. If what they promise, then, be something that in regard of one to the other is mutually exclusive, it is evident that they cannot all be true, but it is not proved by that fact alone that any one is not false.

The very modes of rewards that are offered to us are not attractive to all minds. The conception of eternal bliss, such as I have generally seen pictured, so far from tempting me to strain everything in this life, even to the point of sacrifice, in order to gain these beatitudes, would make me inclined to prefer to their enjoyment even the dubious consolations of this sinful world. Moreover, the vague pictures which are presented to us seem to be less derived from Divine source, or even nobly conceived in imagination by earthly spirits, than the translations into refined terms of the little ceremonies and festivals which are the delight of the special class who guide us already to these supernal joys.

The great mass of the teachings on which the minds of children are formed, and which serve most of us throughout life without further reflection, seems to me to have so little validity that its entire removal leaves the central position unchanged.

In writing thus I do not speak with scorn, but rather with profound sympathy for fellow-beings, with a spirit of one sharing the same hopes and traversing the same route, daring to march a little ahead, and seeking to ascend some higher peak from which some prospect may be obtained of the farther route of the pilgrimage. I turn round and I behold the caravans of humanity struggling bravely onwards, their lips parched for lack of refreshment, their eyes grown weary in searching, their souls tried but not despairing; and I know the aspirations, the yearning feelings linking them in memory with those who have already departed, the love which binds together those who are taking part side by side in the same campaign, and the desolating fear that separation might mean not merely death, but extinction of

all that made living worth while, the blotting out for ever of the meaning of those affections which have supported them amidst the greatest trials and for which each one would willingly surrender his own personal life.

But it is this very sympathy, and the ardency of the desire to find something true on which to build, that makes me reject decisively all that is intentionally false or delusive to the imagination. If we find any grain of truth, we know that the truth of the whole universe is consistent with it. If any position be false, then, no matter how it may be bolstered up or rendered attractive or dazzling to our eyes by all manner of glorification or heightening of the sense of spirituality, we know that the whole set of events of the universe is against it; and so, now endeavouring to trace out from the constitution of the world itself the lines of a true religion or the principles of ethics, for ultimately they mean the same thing, we find that: the one atheism is the denial of truth.

If we disregard error, rejecting the thousand persuasions that might make it seem advantageous to accept it, we ought to be the bolder in the search for truth. Let us see, then, what lights we have in any philosophies of any age or in any revelation that we can receive or test at least by our reason.

Plato's Phædo

One of the most famous essays in literature is that of the Phædo of Plato, in which he discourses of the immortality of the soul. Though the product of a pagan mind, it has had great influence in the moulding of Christian belief, and has been the basis of nearly everything written on the subject since the day of the old Greek philosopher. Addison, in his play of "Cato," represents to us the Roman stoic reading Plato's discourse, and allowing it to persuade him in regard to an important act—to wit, that of taking his own life. "It must be so," Cato says, according to Addison. "Plato, thou reasonest well!"

I have read the Phædo, perhaps in a cooler vein and with more critical mind than Cato, and I have been forced to conclude that neither Cato nor Addison was very exacting in his demand for conclusive argument.

Speaking on broad lines, the *Phædo*, which represents the opinions and modes of argument of Socrates, is divided into two parts. The first prepares the mind to accept death. The arguments are those which were long afterwards rendered familiar in Christian times by the saints and ascetics in mediæval ages. They run upon the conception of the body being an unworthy receptacle, a clog to the spirit. The body, moreover, endues the mind with falsity through the senses.¹

The second part of Plato's discourse deals more directly with the question of the immortality of the soul in itself. Here again we have a series of notions which have influenced a long lineage of thinkers, including Kant and Berkeley, as well as the teachers of Christianity.

Plato's arguments are conducted by way of dialogue, and they are embellished with the charm of a fine literary art. In order to examine their real worth as arguments, we find it necessary to defend ourselves from the subtle influences of this literary style, and also to exercise a vigilant watch on the places where one of the characters of the dialogue cheerfully accepts some statement which has been put forward without warrant and prepares the way to glide with facility into the next position, which may have no necessary dependence upon the first.

Exhibited in skeleton form, Plato's main arguments are that Contraries produce Contraries, and that, as Death springs from Life, Life springs from Death. Then he proves in his suave style of assumption that the Soul had an existence before the Body, and he imputes to the Soul knowledge which is the representative in remembrance of previous

¹ Notions of this kind greatly influence Kant in the building up of his "Transcendental Philosophy," and subsequently Berkeley in his theory of Idealism. I have, in "Psychology: A New System" and "Principles of Psychology," examined these theories by modes of reasoning which consist in obtaining a base more fundamental, and proceeding thence by arguments more cogent and rigorous than those either of Plato, or Kant, or Berkeley; and I find the systems erring at the base. It would be inconsistent with the value of truth in itself if from false principles they reached higher and greater results than those based upon true principles. Consequently, I find each of these three thinkers in turn carried away by the fumes of his false notions and talking what to the practical sense becomes evident at length as bedizened nonsense.

experiences. He asserts that the Soul is simple and immaterial, and therefore different from those compounded bodies which alone are subject to dissolution. Then he brings in an argument that in a well-ordered universe each thing finds its appropriate good, and he asks wherein the particular good of the Soul consists. Evidently it can only consist in continued life, and life continued indefinitely is immortality.

I will not, point by point, traverse Plato's arguments. Where they seem to have any cogency at all they really assume what is desired to be proved, though the *petitio principii* may be deftly hid beneath the graceful phrasing. Of such, for instance, is the argument derived from the affirmation that the Soul had an existence before the body. It would seem to me easier, and more in the direction of least resistance, to turn the argument the other way; to make the assumption that the Soul is immortal, and then to reason that the Soul, thus assured of an existence after the body, must have had existence before the body.

Plato has exercised a wonderful authority as a thinker. No further weight should be attached to that fact than such as gives us the incentive to probe his thoughts with the most determined analysis and to test his arguments inexorably with the demand for rigour. If they have validity, they will rise only the stronger from this ordeal. As a matter of fact, they have no value of this sort, and the history of civilization is there to convince us that in a hundred realms beliefs may permeate the minds of men and influence their acts from generation to generation for two thousand years and yet be false.

The Greek philosopher failed to convince his own ardent pupil, Aristotle, who when he left his school had become disgusted, and cured, of Plato's mysticism. To have given the impulse, even by means of a spirit of contradiction, to Aristotle's great mind, in his course of exploration of the world of realities—that seems to me to be the most useful product of such a discourse as that of the Phædo.

St. Paul

The next philosopher who may be here noticed is one who has influenced the minds of men to a greater extent

than Plato; that is to say, directly and by the immediate prestige of his name, for most of the notions seem to me to derive from Plato, only to be presented in a less brilliant and weaker form by the new thinker: I mean the Apostle, Paul.

In examining his arguments, I am not now dealing with any question of inspiration. That rests on a plane remote from the one limited instrument on which I have relied to build up both the Principles of Psychology and the Principles of Ethics. That instrument is reason. If, however, ideas, though derived from inspiration, be presented in the form of argument, then it is competent for reason to seize upon them in their passage and to examine in how far they conform to its own standards.

Judged in this way, the celebrated discourse of Paul seems to me to be not only feeble, but couched in such a manner as to be addressed only to inferior minds.

The chief argument is that derived from the new growth from the seed that is planted in the ground. That is not an argument in favour of immortality in the individual, but only one of the myriad illustrations of the familiar fact of the reproduction of the race. Moreover, even in the description of this process, although he takes the notions that were current in his day, he gives no hint of a deeper and more spiritual idea of the continuance of life. He derives life from death, incorruption from corruption. A modern biologist more enlightened will see in the whole process a continuation of life from living cell to living cell, and even in what Paul dismisses as corruption he would find beyond that gross, material view a series of changes, mysterious activities, leading our minds on delicate filaments to conceptions of wonder and of beauty.

From St. Paul onward all the philosophers who have wrestled with the problem of the immortality of the soul have been less concerned to find the truth than to defend some dogma or position received by them in trust from their theological forbears. When the matter is presented in this bald way it seems indefensible, but when their minds are once infected with the dregs of old religious disputes they never do arrive at the candour which permits of such a simple statement. They fill themselves with the assurance that to

defend a certain doctrine is noble, patriotic, sanctified, imbued with high spiritual qualities.

Once again I am concerned only with the truth. I am even unable to understand the satisfaction that can be obtained in maintaining any assertion that is at variance with the truth. Were I to allow myself the same latitude of assumption that to others seems praiseworthy in Kant, or in Paul, or in Plato, I could prove anything; but having arrived that far, and finding myself free of the domain, with no obstacle in the shape of verity, I cannot conceive myself as being content to build up a world of bliss with the materials of sterile metaphysical discussions, ex-sanguined joys of humanity, spectral delights, or hysterical evaporations. I would set afloat a world, certainly of flesh and blood, for that is hitherto all of which we have cognizance, but a world of brilliant achievement and dazzling energy, where every faculty had reached its maximum of power, where even to breathe was a delight, where to throw a shadow of beauty was to cast a boon upon the world, and where perfect grace of physical movement was linked harmoniously with happy exercise of mind and fulfilment of splendid aspirations. It is possible that such a world may yet be realized. In the meantime we must turn our gaze upon the baffling world that we knew and endeavour to read its riddle.

Berkeley

Bishop Berkeley was one of those who arrogate to themselves the faculty of shaping the world to their content. Certainly he did not profit much by his privilege, for in the freedom of his imagination he gave us even of this very present world a fantastic account, of which the occasional outcome in sheer folly ought to have warned him that some faulty reasonings lay on the way. The logical outcome, not of the true theory of idealism, but of Berkeley's rendering of that theory, would be that only one mind existed as far as its world was concerned.

Thus the Berkeleyian idealist would speak: The whole world is but a mode of my mind, and you to whom I address myself are only so many strange winding ways of myself, devious paths full of surprises, disasters, even unexpected blessings, yet almost, as yet, unexplored.

Berkeley found, not by a patient analysis but rather by a sudden flash of his intuition, that all our impressions resolved into ideas; so finally, he said, all of life. And in the next throb of ecstasy of a deeply religious mind, the whole problem of Faith, Immortality, God-head, all troublous doubts and haunting fears, were solved. That is to say, to Bishop Berkeley's perfect content. The material world vanished at his touch. There was no Matter. The Materialists therefore had sunk into the abyss. Berkeley had cut the ground from under their feet. They had no material on which to live.

Allow it once to come to your mind, that fine flash of Berkeley, once become seized by the significance of the impulse that urged him on, and the whole of his work becomes lucid. The scope of that work may even be anticipated, and the exertion be spared of reading through his works, for when Berkeley is not inspired he loses all touch of the nature of things, and talks in high-strained mystic divagations. The legend that to Berkeley's mind would seem to have been set in flaming symbols on his banner had this one transcendent meaning: I have rescued God.

All these mystic fumes and roseate clouds have precipitated into something tangible. Berkeley's conclusions were inimical to science, but the only portion of his work which has any permanent value is a contribution to the theory of vision. This may be disengaged from his metaphysical speculations, and it serves to illuminate a certain tract of psychology.

Spiritualism

Each generation seizes upon some new avenue of approach to this question of immortality, and this very diversity of doctrines tends rather to indicate that none of those preceding have offered conclusive arguments. In our own day Spiritualism has become relatively important. If we were to believe all the stories that are related to us, in perfect good faith and with an abundance of proofs of a kind, we might consider the whole question solved once and for all, and regard the next world as little more remote from us in association than Paris is from London.

It would be out of place in this volume to examine the

whole case for or against Spiritualism. That has already been made a subject of a great number of imposing books, but one or two general observations that govern the case seem to be called for in discussing the question of the immortality of the soul.

In the first place, why is it that Spiritualism is of such recent origin? It may be argued that Spiritualism is as old as the hills, and that history and Holy Writ itself contain many allusions to ghosts and spirits of the next world, and to their intimations, generally by way of warning, to important persons in this world. But even if in all this we see fair grounds on which to base Spiritualism, we know of no era comparable to that of the last two generations where the belief in Spiritualism and the practice of the communications have been so active and so extensive.

This fact is usually put forward, not merely as a proof of the vitality of this new religion, but as a good ground for believing the truth of its tenets. To me that argument is somewhat disquieting. My reasoning is as follows: When men first began to observe electrical phenomena, they found by accident that here and there certain effects were produced. The same kind of effects were always produced in similar circumstances. Before the secret, in so far as we possess it nowadays, was discovered, we were dependent upon these hazards for our observations, and they were no more abundant at one time than at another. When at length we had arrived so far as to be able to control, to some extent, the phenomena, we obtained abundant manifestations, and gradually we have drawn from the great reservoir of nature various forms of energy which we have made useful for our own human purposes.

Now we do not know anything of the mechanism by which spiritualistic phenomena are produced, and we ascribe the activities to the initiative of the beings on the other side, though they require mediums, so called, through which to make their manifestations intelligible. The mediums do not themselves initiate such manifestations. They themselves are the first to assert that fact, and they rely upon that assertion to safeguard their good faith and to help to give confidence to others.

Now long before the Fox family in America began to

receive messages from the other world, in the simple and even somewhat puerile form of tapping on tables, many persons highly endowed had passed over to the other side, and many of extraordinarily sensitive and receptive nature had remained for a while upon the earth. When I say many persons, the mind in endeavouring to ascertain the meaning of such a term in these circumstances is carried away in a vista without end sweeping down throughout the centuries, and the senses reel with the vision of the untold millions of human beings.

The name and the fame and the works of some of these have been preserved in human history as a testimony of the admiration of men of the heights to which the intellect can reach. How is it, then, that none of these had initiated manifestations? If it be replied that the medium was also necessary, how is it that nowadays mediums may be picked up so easily and in the most unexpected surroundings, and with qualifications, or the lack of qualifications, which disconcert the inquirer? The mediums are very often uneducated people and also unintelligent, apart from the exercise of this particular function, and yet they are able to summon at will, and for a very moderate pecuniary reward, the spirits of Socrates, or Dante, or Shakespeare; and these great ones consent to interpret to a small group of friends the conditions of the other world, and as a further gracious mark of favour, give that message in the vernacular of the medium expressed in the manner of Shoreditch.

The Spiritualists in their endeavour to prove their doctrine have, I think, fallen into the error of proving too much. We have lately read, not in the style of impressive declaration but by way of ordinary narratives in the popular press, stories of the next world which make one rub the eyes in bewilderment. These stories do not bring us to a higher spiritual plane, but they introduce us to a prolongation of the themes which have interested us here. Quarrels, religious discussions, the themes discussed in public-houses and, moreover, even in that mystic world, discussed in spiritual public-houses whose atmosphere is little distinguishable from ours, and where, according to one of the best informed of

our great authorities in Spiritualism, spiritual whiskies and sodas are commonly drunk and enjoyed! ¹

We have had examples which strain our credence even beyond that point, examples which seem almost too trivial or too airy to be mentioned, were it not for the fact that grave men of science have bent their brows over the proofs presented, and after much examination have been inclined to accept the testimony. Thus we have a young girl from the country who has photographed fairies. This was an exploit in itself, but what will be thought of this wonder when these transmuted beings have carried their complacency so far as to pose for her in bobbed hair and ballet skirts?

There were profane people who asserted, for that very reason, that the photographs had been prepared by a process well within the skill of ordinary photographers, and that the model that came most readily to hand was some representation such as uninspired individuals exhibit for advertisements of pantomimes or for the decoration of chocolate boxes. To this pass does the discussion of Spiritualism lead!

I will leave the matter there without pressing too hard for a judgment.

There is one consideration which to my mind has greater force than anything I have yet seen advanced, either by the upholders or the opponents of Spiritualism.

The point is, that the Spiritualists, or those who have in any way pretended to have communications with the other world, have added nothing new to our knowledge. They have told us of many strange, and even startling, incidents, but all of these are fabricated by new combinations out of the old stuff of our thought.

To make this matter clearer, I would point out the results of exploration even upon our earth. No navigator has ever returned from a long voyage of discovery who has not brought something new into our knowledge, something more extraordinary than anything hitherto imagined by poet or humorist, such as flying fish, or the spouting whales that alarmed Nearchus, or kangaroos that amused Cook's sailors, or the octopus. All these have become familiar to us now, but they had never been delineated before being discovered.

¹ Cf. Raymond; Sir Oliver Lodge.

Then, too, we have from the record of the circumnavigation of Africa under the Pharaoh Necho the extraordinary story which Herodotus set down, though perhaps not believing it, that during part of their voyage the navigators found the sun on their left side as they sailed west and at another on the right side for a westward course. This experience is very familiar to us now, but for its entire explanation it was necessary to reach a conception of the structure of the solar system beyond the imagination of the people of that time. There, within a limited scope of human experience was brought to light a fact so significant that it baffled explanation until the thinking faculty had become expanded and illuminated to a higher degree than had hitherto been reached.

Then, again, suppose that the King of Siam had sent an expedition into unknown seas and that the adventurers had returned and had asserted that they had seen water solid; there again would have been an experience so extraordinary that it could not be explained without enlarging the scope of our knowledge with regard to matter and introducing new conceptions of great fertility.

If then the mind were to take a flight not merely to different parts of this circumscribed sphere, but into space, and into an unknown world where the ordinary laws of nature, as we know them on earth, do not prevail, we should surely expect something better and even more wonderful than any compound of the things which we already know. Certainly Spiritualists have strained their imaginations in order to present us with incidents even to the degree of being fantastic or absurd, but that does not correspond with what we have a right to demand. The communications from the other world have brought in no essentially fresh idea, have informed us really of nothing new, have predicted nothing, have explained nothing, have given us no deeper conceptions of science, or helped to raise our power of thought, or to extend the scope of the intellect.

Instead of that, we have had presented to us something of what we might have anticipated beforehand if we set down the communications to the somewhat forced combinations of ideas of persons whose habit of mind and scope of thought we knew. Thus an imaginative young lady gives

us a fairy-like dream of the other world. A man about town is unable to rise out of his habitual associations. From his telling one would think that the next world was a haphazard reproduction of Piccadilly Circus. A pious clergyman, on the other hand, if he be a devotee of Spiritualism, gives us stories of extraordinary prolixity, from which one would infer that the chief happiness of man consisted in ceremonies, in which white vestments play an important part, together with all sorts of rituals, and consecrations and ordainings, and gatherings in a well-ordered choir-like array, singing the while hymns of mediocre intellectual value.

Naturally every one is desirous of obtaining some knowledge of their relatives or friends who have died before them. On the other hand, nothing is gained by deceit or even by self-deception, yet this frame of mind seems to be deliberately cultivated by some Spiritualists. A book written recently by a lady whose title gave particular weight to her words has somewhat naïvely described this state of mind. She says that it is easy to believe if you make up your mind to believe, and that it is extraordinarily consoling to believe, and that therefore when the offer is made on these terms, of close communication with those who have been loved on earth, it seems ungrateful not to accept. Finally, in this frame of mind the desire to believe will produce belief, and if the critical faculty be henceforth banished with appropriate scorn the faith will stand every admissible test.

To all this I would reply again that the one governing question is not of gratitude or consolation, but of truth. If these stories be not true, then we must put them aside, for as compared with the marvel of the universe we have already found the fancies of the most exalted poets to be puerile. What therefore I demand is proof that will stand the most crucial test. That is the kind of proof which science is always asking for, and which never overthrows but continually reaffirms any valid principle. I will leave this subject now, not wishing to return to it until I hear from the other side of something that gives me a new light, a higher degree of thought, and a more illuminated vision.

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What is the Origin of the Universe?

There is a question beyond the scope of Spiritualism which seems to baffle human thought and drive the mind towards the brink of madness. That is the question of the origin of things. This earth is but a small part of the solar system, and the solar system is but a small part of the universe. Expand thought out to the remotest confines of which we have any inkling; what then? What contains all this? Pierce veil upon veil, unwrap fold upon fold of the reality which encompasses us. To what definite thing do we ever arrive? What is the commencement of it all? And what is the meaning of commencement? Of origin? Can we ever entertain the idea of a condition of nothingness? Of infinite void? And what would be the meaning of "infinite" then?

Our poor human reason cannot think of anything that never had a beginning, a source, a lodgment; and yet to conceive of the beginning of the universe—that is the impossible thought. When the mind tries to form a conception of the inner springs of things and rises from possible revelation to revelation till it stands confronted with the problem: What if all this had never been—what had there been then? It is then that thought is too terrible; the towers of the mind begin to totter in madness.

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The Monad Conception

Reflecting upon such matters I was once travelling in a remote part of a beautiful country at night, sitting in a railway carriage alone. Suddenly the light went out, and I stood up and looked out of the window. The night was fine and singularly beautiful, the full moon shining with marvellous brightness in the heavens. Yet the flakes of dark cloud now and then drifting before the face of the moon, the long stretch of bog-land before my eyes, the strangeness, the silence, and the wildness of the landscape did not fail of their effect. I was seized with a feeling not so much of melancholy as of a sense of all manner of exquisite desires unfulfilled; and presently the one touch wanting to have led my thoughts to the contemplation of the old fascinating problem was suddenly supplied.

Near the railway line ran a long strip of still water that reflected the moon and the clouds almost as distinctly as they appeared to direct vision; and looking down, gazing into this space so living in its character, so profound and yet so apparitional, my mind reverted to the philosophy of the idealists, or rather to those quick and seizing little hints thereof that Emerson has touched upon in various ways. Here was a world as vast, as clear, as that in which we live and move, and yet withal insubstantial as a dream. The mind was led to the suggestions of Spinoza, of Leibnitz, that a monad contained potentially the universe. Now in this strip of lake water, narrow juts of land ran out at intervals, and these interrupting the reflection, it so happened that suddenly the whole world vanished. The moon was annihilated, only to reappear at a further distance. I being the same, the world of appearances had vanished and become resurrected. Thoughts that had seemed to stretch towards infinity had shrunk suddenly into nothingness, then at a touch reawakened.

In my notes at the time I referred to Kant and Berkeley. I have since reviewed this whole problem, and a much wider one that contains it.¹

I found the analyses of Berkeley and Kant insufficient. I have shown that proceeding from the principle of idealism, and holding to it with complete consistency, we may arrive at a conception of objectivity, just as definite, but more precise and intelligible, than that of the Common-sense school. The principle of idealism is therefore sufficient for our interpretation of the universe, but when, with a new cast of mind, we regard the thoughts of another person, or of ourselves viewed objectively, we see that our conceptions must necessarily be limited. They are limited, for one thing, by the gamut of those little organic harps held up in space which we call our organs of sense, and which respond only to a small proportion of those vibrations which, in another manner, we know objectively to exist.

The Material Conditions of Consciousness

I speak here of the organs of sense, but elsewhere I have entered more extensively into the question as to the total

¹ In "Psychology: A New System" and "Principles of Psychology."

sources of our impressions or knowledge of any kind. I have shown that to every thought is correlated a physical condition.

This assertion may be attacked as materialistic. Therefore here I want to say a few words with reference to that aspect. There are people, even those of eminence in the world of science, who speak as if thought were a product of the brain; as if an idea were lodged in a brain cell, and even as if thought were a kind of substance excreted by the brain in its activity. Under such a definition, materialism is simply crude folly. Thought, I must repeat, is different from brain substance. The scent of violets does not resemble a piece of nerve tissue, nor is the colour of the sky an excretion of the brain.

When a new impression reaches the brain from the external world, an impulse is given to a sensory nerve; that impulse finds its way through devious paths to the brain. Its route is probably immensely more irregular than that of a traveller in the centre of London who changes trains at successive stations before reaching his journey's end. Arrived at a ganglion of the brain, the impulse produces a little buzz of excitement, the stream of blood at the place flows a little faster and warmer, and new impulses are sent from this centre. But all this when looked at from the outside, even if our senses were so fine that we could trace the movements of the molecules themselves, all this would give us not the slightest clue to the idea, to the thought.

The thought is something that follows after such physical phenomena; the thought is not a physical phenomenon. To say that there is a leap or passage over the interval from the material world to the psychical world is simply to make use of an image that has no warrant; that is nothing more than a gloss of words. All that we can assert is that to every thought there is a physical correlative. I reject therefore completely the position of the crude materialists, but I find that some so-called idealists are equally crude.

An idealist, for instance, will open his eyes if he wants to see. That is to say, he removes the outer curtain of the lids which prevents the waves of light striking on the retinae. What would he think if one were to accuse him of gross materialism, because he had lifted his eyelids? But at what

stage, then, of the physical process is he to intervene with his disrespectful epithet? Evidently he cannot properly intervene at any part of the process with the notion of stopping it there, so as to keep unsullied his notion of idealism.

Now we are coming near the crux of the discussion. If the senses be necessary to produce impressions or ideas or thoughts, then if the senses cease to function, thought, it may be said, must necessarily cease. I do not know that that argument is correct. The physical antecedent is necessary to our thoughts, as we knew them, within a limited scope of experience, but when we are dealing with such questions as the universe and immortality, we should recognize how limited that experience is.

A man is imprisoned, let us imagine, in a darkened cell, and no light enters except through a small pane of glass which has been purposely obscured. All the impressions that he receives from the outside world come by way of that obscure pane. Suddenly, as if for instance by an explosion from outside, the walls begin to shake, the pane becomes more and more obscure, the light fails. Then this is the end of all?

The light of new impressions has ceased, then with a more violent concussion the whole wall falls down, and suddenly, in an unimagined manner, floods of new impressions stream upon him in enormously greater variety and clearness than before. Who can say that nothing analogous may happen to the soul at death, if indeed there be a soul?

I have found no great illumination from the technical psychologists, but in the writings of good Sir Thomas Browne, author of "Religio Medici," I find these remarkable words :

"Every man is months older than he bethinks him . . . for besides that general and common existence we are conceived to hold in our chaos, and whilst we sleep within the bosom of our causes, we enjoy a being and a life, in three distinct worlds, wherein we receive most manifest gradations. In that prenatal world our time is short, computed by the moon, yet longer than the days of many creatures that behold the sun; ourselves being not yet without life, sense, and reason ;

though for the manifestations of its actions, it awaits the opportunity of objects, and seems to live there but in its root and soul of vegetation. Entering afterwards upon the scene of the world, we rise up and become another creature; performing the reasonable actions of man, and obscurely manifesting that part of divinity in us, but not in complement and perfection, till we have once more cast our secundine, that is this slough of flesh, and are delivered into the last world."

For the reasons I have advanced I find that we are entitled to hold as inconclusive the argument that necessarily conscious life in another world must depend on the senses in the manner in which we know of these in this world.

Deity and Design

The question of immortality is linked with that of the existence of a Deity, but the association is not inevitable. An atheist believes that he is enjoying this world without a God; there is nothing in that fact alone to inhibit the thought that he shall traverse another world without a God. On the other hand, a religious person may believe in God, and yet think that his own experience in this world will make the sum of his conscious life.

Nevertheless, I think that the existence of a God, and also the existence of design in the world, lend strength to the argument for immortality, because the very fact of creation implies a meaning for that creation, and since we have no other standard higher, a perfection of that design.

It is not uncommon for people nowadays to assume a certain superiority in laughing at the argument of design, which they associate with Paley. I attach, on the contrary, great value to this argument, though I have little regard for Paley. I do not think the suggestion was original with him. I find it put forth with much greater power and scientific knowledge in the discourse of the great anatomist, Bell, on the Hand. Paley's argument is derived from the mechanism of a watch, but that is also valid as far as it goes. This consideration is easily separated of the old false teleology as, for instance, of the good pious man who thanked Providence for making the rivers run through the towns.

But we can rise from Paley's watch, or Bell's hand, to a much higher and more universal conception. As our knowledge of the external world increases we become more and more impressed with a sense of its order and regularity. Our solar system itself is a piece of architecture of a wondrous kind, beyond the highest reaches of our thought, yet it is built upon a simple plan, and the main law is capable of a form of expression easily understood.

Yes, it will be argued that these laws are the expressions of our own mind in the endeavour to understand, and make a tally of, the working of phenomena. Yes, again—but what is it in the external world that allows us to reach these simple and harmonious formulations? The atheist replies: It is all mere chance.

To this again I reply: What is chance, and what created chance? If everything depended upon chance, "on the fortuitous clash of atoms," then if everything had been arranged in order by chance except one essential element, out of a million million, the order which would otherwise take place would have disappeared. I will not pursue the argument of chance further, because it is evidently both gratuitous and crude.

We may accept as proved, and with the demonstration as complete as we reach in any matter—more complete than that of the negative arguments—that the world is ordered, that the whole procession of phenomena move according to simple harmonious laws, and that the various lesser harmonies that we encompass are but parts of a completer plan. Let us therefore at this stage sum up all the arguments.

It is not well to rest upon reasons which are themselves faulty. We can find arguments which are sound and which suffice. We must not evade the arguments of denial. We must face these, accepting all that they prove, but probing and testing every position. We find, then, that these arguments are not conclusive. We find that there is nothing in science inconsistent with the conception of the immortality of the soul.

Then when we look abroad upon the world and see how each part which, taken separately, would be incomplete or meaningless, yet joins in with the general perfection, then

we are entitled at least to hope that in our human thoughts, the most wonderful of all that we behold or feel, there will be the same working out to some eventual harmony. Otherwise would be found in vain all our greater hopes, our deeper affections, and all those inextinguishable aspirations which give the stimulus and glory to human life. Even the very madness of our endeavour, "the despair of a soul searching an answer, the mutiny, the impious rage, the searching out devilish inventions"—these are often a tendency to the same great purpose.

I am content to leave it at that. The bewilderment, the fever, the subtly intimated prepossessions, the drift of the mind towards a larger expansion, the forcing outlet for a high part of the being, all that is at least a primordial instinct of all of us. And though the certitude never arrive to us, yet we are nourished in the hope of immortality, and it is at least in the hours of deepest contemplation, of most inspired thought, of noblest aspirations, not only in the power of our individual life, but towards the larger harmonies of the world that sweeps about us, that the aerial voice whispers its note within our ear, that the mystic hand seems stretched from above to sustain us.

CHAPTER II

IDEALS AND PURPOSE

IN discussing ideals and purpose we are in danger of losing the firm supports of reason on which we hitherto relied in the establishment of the main principles. We seem here to be entering into the hazardous regions of poetry and speculation, and to live in an atmosphere possibly of illusions, and at best associated with a sort of weakness despised by "the strong sons" of earth.

In the assemblies of the men who are most active in carrying on the world's affairs there is seldom any appeal to an ideal, except where that is something of convention, such as loyalty to a party or to a form of government. The speeches that are most appreciated are those in which the standards, definitely expressed or tacitly assumed, are those usual in business, such as can be assessed in a ledger, or those that recognize authority derived from material things and capable of enforcing material sanctions.

I would be loath, then, to suggest that the actions of individual men or the policies of communities could be influenced by anything so remote and tenuous as ideals, if I considered that the so-called practical men had clear views of all the scope of things that encompass them, or are in the habit of ascertaining the sources of their motives.

Yet the discussion of ideals is not out of order, for these should not escape the laws of reason. Even in poetry if a statement be offered, or there be utterance even of something inspirational of a higher kind but intelligible, it is evident that it falls within the domain where we can examine it and relate it to our previous knowledge.

The outcome of such reflections is found to be that while we are vaguely conscious of some ideal, or of some purpose, influencing our destinies, we are unable to define such ideal, but we may be able to indicate great bounding lines, as of

the watershed of a country, within which our intellectual progress and moral development are contained.

We have already seen, and traced in certain instances, the lines of relation between the subtle thoughts and flashes of genius of high minds and the final precipitation into the concrete corollaries of vast material works—the great bridges, the railways, the steamships, the vessels that navigate the air, the installation of wireless telegraphy, and the rest; and we have noted that science is the “woof of civilization.”

But what is the purport of all these works? Have these ways of communication, by which journeys that formerly took weeks can now be accomplished in a day, no other meaning than that of bringing together people of minds indifferent to these wonders except in as far as they serve their little appetites and their little round of material enjoyments?

Science

Neither in the origin, nor in the results which arise, is such a supposition probable.

Just as the inventions of the telescope and the microscope, which themselves took shape from delicate considerations on scientific lines, gave rise to floods of new ideas that had a repercussion on mental development, so all the material works which give us a control over the forces of nature form the structures on which new phases even of intellectual development are formed. Hence it becomes suggested, even on the grounds of material advance, that the desire to know and to control nature affords us already an ideal which will lead us on for countless generations. This seems the more striking when we reflect how recent is the new impulse of modern science.

By slow successive steps it took mankind many thousands of years to reach from the stone age to that of the polished community which flourished for a brief period in ancient Athens. Then came a retrograde movement, and, finally, during the last three hundred years, an extraordinary activity of mental energy. That activity, however, is only at its beginning; the great expanse of knowledge is becoming subdivided for our needs into various sciences, and then

again into special disciplines of study; and in each of these a great array of problems springs up, baffling, tempting, fascinating. The solution of any one problem brings its reward, often in forms not anticipated, on account of the wide field of application of the processes of nature.

Here there is room for hope of the ideal, or at least of an ideal.

When we reflect that in the Middle Ages it was possible to rouse the soul of a people to enterprises of conquest in remote territories full of perils, and with but nebulous gains as a recompense, it is not too much to hope that in our day, or that which will immediately succeed it, we may set on foot great intellectual expeditions, exploring in a thousand directions the secrets of nature and reaping at every turn splendid rewards. The whole of our civilization must swing on a new axis of thought. The visible banner of this new movement may be designated as science. This will be found eventually to mean the building of a new epoch of civilization, and the institutions that will arise will afford scope for the activities of thinking men for centuries ahead.

There is one immediate aspect of the question, however, that is of particular importance. There never has been a time when, side by side with the study of science in a few quarters, there has been so great an outcrop as at the present time of spurious thinking, irrational notions, absurdities erected into religions, new religions formed on false bases and worn arguments; and these inferior notions are more widely spread and more powerful in popular regard than true science.

There is a revolt in most minds against the drudgery imposed by the discipline of science, and there is a desire to discover something new by short cuts and without pains and patience. This is the effect of an education in which the stimulating elements have been in excess of the solid intellectual nutriment. We find currently a form of argument, recalling that of the Middle Ages, which consists in proceeding from a starting point to a conclusion by means of a shimmering texture of thoughts that baffle definition. Hence have arisen a number of pseudo-sciences that owe no allegiance to reason, and of which New Thought, Intuition,

Vibration, Christian Science, Spiritualism, Telepathy are but examples.

Now every lack of correspondence between the functioning of our thoughts and the reality of external nature is an element of mental aberration, of which the extreme form is lunacy. The intelligence of the generation is seriously ravaged in that direction, and as minds that refuse to brace themselves to the effort of long-continued thought are prone to encourage specious theories, and these in turn render the aberrations more numerous and difficult, we find ourselves in a vicious circle of error.

What is here needed is the discipline of correct thought in the science that holds all the others in its matrix. Psychology, properly understood, illuminates the mental processes employed in all sciences, and it stands at the portals of research. The thoughts that proceed from such a conception, adapted to various degrees of intelligence, should be impressed on young susceptible minds so that our mental development may be won from wasteful effort and may proceed on the lines of sanity.

This is but one of the numerous aspects of Education that will be made increasingly clear when the ideal of Science is set on high.

Art

At this point we may refer to a saying of Goethe that the greatest intellectual need of the future would be fulfilled in the development of art.

If the full purport of the discussion on toleration¹ be grasped, this development of art will be seen not to conflict with that of science. The conception of art will, however, be modified with the progress of science and with the extended view of the world which science will afford.

We have missed in life, and we have not succeeded in recovering it as we recovered Greek science, that sense of the beautiful, not as something trivial, or accidental, or apart from other things, but transmuted into the conception of things so as to become a criterion of excellence.

We do not restore that sense simply by having detached works of art, even of high merit, in a museum. The sense

¹ See page 288.

of beauty should be interfused right through the population, and should find expression in everything turned out by human agency, and finally in the spirit of ethics itself.

Art is not something merely imitative, reproducing some passing phase of nature, such as the body of a human being in a statue. If that be great, then since it is imitation of the reality that reality should be greater. That seems to me so obvious that I would pass on did I not know that it is a doctrine quite unacceptable to artists and amateurs of art. The persons who admire a fine statue with an excess of appreciation, regard with indifference the model whom it reproduces. That I could understand if the artist improved the model, or merely taking the model as a sort of human note or memento, produced in marble the expression of some fine sentiment.

That I say is superior, but it is rare, for artists are generally praised for their technique, which is an affair of practice in special mechanical skill, or for the high degree of resemblance to which they have brought imitation. These things are excellent of their kind, but the representation of the ideal, if wrought with equal skill, is higher. But even here I assert the superiority of the mode that can reproduce these in living examples. Let us take it even as a new form of art, of vaster scope, to work with plastic human material instead of paint and marble, and to produce masterpieces.

That would involve a whole course of education, physical as well as mental; but there should be nothing on that account to discourage us, for already we spend much effort and large sums of money in producing inferior forms as the result of defective education.

It would be a part of a complete ethical system then to secure a development of art not shown merely by isolated works, but exhibited throughout the population in well-formed bodies, graceful bearing, good manners, especial cleanliness, sound and well-kept teeth, superior condition of the organs of sense, especially the eyes and ears, and high efficiency in those nervous reactions which underlie skill in games.

There is nothing in this to preclude excellence in the more technical arts, sculpture, painting, music, and the rest. On

the contrary, in accordance with what we have occasion to discover in studying toleration, each faculty, trade and workmanship should be developed with a certain completeness that brings out an effect of art.

The development of all art, and particularly that of literature, which is the most varied, the widest in range, and yet the most intellectual in expression, should correspond to the same principles as those that indicate the progress of the race, and therefore these arts will reflect the ethical spirit.

This is possibly what Goethe had in mind when he said that the future development of art would be on more "objective" lines, for objectivity implies generality of application, and that is in accord with ethical principle.

There is some hope, therefore, that we may have a new epoch of literature of a broader, deeper, more powerful character than what he have known, while losing nothing of freedom, or poignancy, or effect.

Beauty

There is one point here in regard to beauty, the discussion of which prepares the way for a reference to Purpose.

Certainly as beauty is generally represented by artists and poets it seems admirable and delightful, but hardly strong enough to serve as an ethical motive in itself. That which is the unconscious feeling of most men is not without an element of justification.

When a definite object of beauty is set apart for adoration, or where a too obvious pose is offered amid graceful exercises, or where the goal of effort is discovered in the cult of artistic production, even of wonderful virtuosity, there seems to be something not only inadequate but savouring of decadence. This is to be found even in the sense of finality that is imposed on such development, but the success of the vague feeling of inquietude is deeper.

The beauty that we must place high as an ideal, the beauty that sets its own seal on high accomplishment, is not something found apart as a concrete entity, but rather the final flash of harmonious perfection that arises out of all successful demonstrations of energy.

That, I think, is more in accordance with the best Greek

spirit, and that is the meaning ascribed to beauty by the poet who, of all moderns, approached nearest to the Greeks, but who added a sense of divinity of his own—John Keats.

Viewed in this manner, beauty should be sought, not as an occasional object of delight or consolation, but as something everywhere pervasive and appearing in all forms and movements where these give some expression of energy in the highest degree of efficiency.

Beauty therefore is not a slight, frail, or contemptible thing; it is on the crest of the wave of the highest reaches of our life. Therefore we see that the motives that are strongest are not those whose gross material aspects strike us at first sight, but those of a subtler kind which appear to us in their allurements when we aspire to new conquests in our upward development. And that is why, although I have found it almost absurd to speak of ideals as though supposing that they may become immediately accepted as motives, I have yet thought it worth while to hold up these ideals as ethical standards; for though ignored they yet determine by their own criteria the degree of development, even of those who reject them. They are nature's standards whether we will or not.

Love, Beauty, Truth are the sign and seal of what, for the sake of a more formal exposition, I have chosen to exhibit as Sympathy, Energy, Truth.

When we say these are nature's standards, we imply an objectivity in our ethical principles which lifts them beyond the scope of our well-meaning or ill-meaning, or of our present ethical appreciations. That strain has run through the whole exposition. It is implied in the generality of the applications, and it is set in evidence by the illustrations that could be multiplied beyond measure of the frail and variable character of subjective views of ethics.

Purpose

With this conception, therefore, arises that of a kind of intention or Purpose running through life. That, too, I accept, and I find the strongest arguments in the writings of those philosophers, principally biologists, who trace out the course of evolution, as though by the continual intervention of some chances or hazards that allow the survival of certain

types. We have already asked, what is the meaning of chance, and how these chances have arisen? But even the multiplication of chances to infinity does not serve to explain the events, for there may be different fields of development, each of which must co-operate with extraordinary co-ordination to produce certain results, so that the chances must reach a plural power of infinity, and even then at each of the infinite number of small moments in time these chances must be maintained.

Of instances of such co-ordinations I have given some curious examples drawn from biological research,¹ and I could multiply these, but it may suffice to take an ordinary case. When we ask how do we obtain a sense of direction in sight, we may refer to a diagram where we see a ray of light entering the eye at the centre of the cornea and impinging on the retina. That line has direction, but in reality we have no sense of it as it is exhibited in the diagram. The organ of vision is not at the cornea, and we do not appreciate the ray as a line. The impression on the retina makes us aware of a certain disturbance. We have a sensation of light. But as the eye is moved a different part of the retina is affected. But how do we know the disposition in which the eye, or eventually the retina, is held? The eye is moved by a series of delicate operations and adjustments served by a number of little muscles attached to the eye-ball. Each delicate movement corresponds to a system of innervation of this set of muscles, and each process of innervation, when it reaches a certain degree of intensity, is made known in consciousness even though by some mechanism not well defined by our physiologists.

It is by the co-ordination of these sets of impressions that we form a judgment of direction; but parts of the mechanism are derived from elements of development different from the others, the difference having taken place at an early stage of our evolution. How then have these adjustments been made? By chance? Why, if that be the case, is chance so constant and so obedient to our needs?

If we read the work of a biologist and philosopher such as "Le Genèse de l'Energie Psychique," of J. Danysz, we find in tracing out the development of man a series of steps.

¹ See page 71.

When these are looked at by a mind of high order seeking for explanations, we find how difficult at each step it is to define, or even to imagine the exact process, and we have the impression of an immense number of steps with intervals each of almost unscalable height.

At each step though invoking some law, say that of Natural Selection, the biologist has the air of leading and pushing his mechanism in a manner which gives a strong suggestion of art rather than of a selection of hazards, and which could only be successful because he knows whither he is going. At length he arrives at man.

But if he had to trace out a course ostensibly directed by design, such as that of a boy fashioning a model yacht, he could suppose at each turn a multitude of chances and the happy selection of the right one, and in that case, as compared with his history of the evolution of man, he would be required to make far fewer gratuitous assumptions and claims of unknown hazard to operate in his favour. Purpose is stamped with immensely greater certainty in the development of man than on any series of our own intentional designs and acts.

Nothing of this rejects the operation of Natural Selection, nor of Lamarckian adaptation. But since these means of operating have been discovered only recently, and since we have no inkling of any principle of division that can assure us that we have exhausted, or even examined the field of modes of action, how can we simply close on these and say they represent the only ways of development? They are but instruments of Purpose, and as our knowledge increases we will see the mechanism develop more clearly, though possibly without ever discovering the inner secret of the Purpose.

Nevertheless that is not necessary even to a scientific exposition. We may be correct without being precise. It is in this way we must regard our Principles of Ethics. We have won them from the consideration of the constitution of the world itself, and by their aid as by a lamp we have illuminated many domains of human conduct, and we say: Within these great guiding lines, and by these standards, the ethical development of man is guided, while beyond us and above us, dimly felt at times and holding the certitude of a higher destiny, looms the sense of purpose.

Part IV

COROLLARIES AND APPLICATIONS

Illustrations of the corollaries and applications of the system. Forms of government, questions of war, various ethical virtues, and the manner of regarding disease, and wastage, and pain, broadly discussed.

A brief summary indicates the main conclusions of the book.

CHAPTER I

QUESTIONS OF GOVERNMENT

It would not be impossible to devise a form of government that would best secure the development of the higher activities which we found to be in the line of the progress of the race. Most men are, however, suspicious of any construction of the kind. The reason maybe that to pin one's faith to a theory implies a comprehension of that theory and therefore serious study and reflection. . . . I will proceed in the contrary direction, beginning at the base of the edifice, and we shall see that eventually the same results will be arrived at if all through we have regard to the true principles.

In the first place it may be noted that though human societies and governments have in the past suffered a series of violent changes, or revolutions, yet there is nothing in the nature of human progress that renders revolution necessary or salutary in itself.

Revolution is generally followed by a period of chaos and disorder before stability can be given to institutions which, in our present state of society, we find to be indispensable for education, legislation, and administration. Disorder of any kind means loss of energy, and, further, it produces evils not only immediate, in the shape of all manner of injustice, but also by way of giving rise to revenge, rancours, suspicions and the storing up from generation to generation of hatreds and prejudice.

All that being said, it does not follow that revolution is never justified. A form of government is condemned which does not contain in itself the power of renewal and adaptation to new forces, new discoveries, new not only of the objective world, but of the mind of man.

Those who are fond of analogies from natural history will find much to interest them in comparing the processes of decay and death in a nation with that of a plant, where

the increasing solidification of the stem which affords structure and support contains the causes of decay.

When, therefore, a mode of government, conceived at one phase of national development and realized in terms that gave it power and durability, has become rigid and inapplicable to contemporary conditions, the decay of the community begins. The nation may in such a case be faced with the alternative of sinking to an inferior phase of evolution or of throwing off, even with violence, the institutions that oppress it.

In such a case there should be no hesitation. Obscure though our notions be of the ultimate intent and purpose of all our endeavours, the sentiment that favours progress is as inherent and as natural as that which exults in physical strength or that demands food to satisfy hunger.

Countless generations have passed away from the earth, often with little or no record, and what we have as a resultant gain, forming the glory of the human race, are those means of civilization embodied in science, in literature, institutions, customs and the like that have ensured progress. A high standard for human conduct is therefore given by progress itself, and wherever it is found that any human institution stands in the way, then, at whatever cost, even of revolution, it must be eliminated.

Such principles made inevitable and salutary the overthrow of the Roman Empire, the successful revolt against the attempt of Charles I to establish divine right, and at length the French Revolution, which forms a beacon light of immeasurably greater value than those others on account of the immense uprising of a host of new and enlightened and generous ideas.

The downfall of Tsarism in Russia and that of Kaiserdom in Germany were both not only unavoidable in the circumstances that had arisen, but well indicated on ethical grounds, for these systems were both reactionary and rigid.¹

The Feudal System

All through Europe the feudal system is on its trial, and those nations are destined to succumb which do not either

¹ This is said without either criticism or approval of the systems that have followed, for that would lead too far afield.

throw it off by revolution or, more wisely, deliberately prepare the way for a new development by evolution.

The feudal system has exercised a fascination over the minds of poets and artists, and it has given many words to our language that breathe of a high spirit of honour. By study and reflection, and by allowing my mind to roll and float in the poetry of the era, I have sought at times to gain something of the spirit of those who lived in its prime days, their minds steeped in the admiration of its institutions.

In the outward show there was much to stimulate the senses, for a prancing steed richly caparisoned is more picturesque and more sympathetic than a railway train. The polished armour, the emblazoned shield, the nodding plume and the keen lance speak louder of the knightly skill of battle than the drab dress of a modern soldier with his rifle.

Multiply these incidents in the person of the bold cavalier, brave, haughty, imperious, yet nearer to nature, more simple and naïf than captains nowadays; give full effect to the immense influence of women in social affairs, their susceptibility to show and form and immediate effect, the lure of the superficial graces; and we begin to see the pervading stimulating feeling of high life that the feudal system afforded.

Then with the tournaments, the plain shaking with galloping horses, world-famed knights coming from what seemed far-distant provinces; the scene in which brightness and gaiety mingled with the splendour and pomp that bedecked the stern business of war; the tier on tier of ladies in silks, in lace, and gold brocade, beautiful as festoons of living flowers, that graced the lists as the knights, all senses alive and lances poised, dashed to the fierce encounter; realize all this with the affections, the passions, the floods of emotion that swept over the crowd; the contest brought to the concrete thing of the trial before all eyes of famous champions, the fanfares of triumphs, the ceremonies gracious and imposing of the reward of the victor!

Imagine, further, that in an age with little literature, without newspapers, of widespread ignorance and superstition, but with minds receptive and souls ablaze to the

stories of high renown, how the talk would run, and the verses fly, and the real poetry of such scenes sink into the senses and flash in the memory of all.

Then again reflect how all this was woven, organically knit, into the system of government and the power of the King, whose authority was kept at a high level both by the mystery, the prestige of his power and the reality of the cruel persecutions of those who thought lightly of his right; and, further, that with all this united, the influence of the Church, supreme, uncontested, forming the very texture of men's thoughts and playing with invisible fingers on the structure of their brains. Then some faint dawning arrives of the meaning of the strength of the feudal system. That it was wicked to question its goodness or its eternal duration might seem obvious, but a deeper curse would rest on those who resisted its allurements, for certainly they must have appeared even more lunatic than vile.

Let us now examine this system from the standpoint we have already gained in our civilization, and we will see how much of the admiration it excited rested on shallow and artificial grounds.

In the first place it was founded on force, and the main feature of that force was physical prowess.

Richard, the hero of England, the favourite king, though he spent but a few weeks of his life in the island and disdained the language of the Saxon—Richard could swing a battle-axe larger than that of any other knight. Hence he became terrible in war; he was surnamed *Cœur-de-Lion*. Bertrand du Guesclin, of France, arose from meaner origins. He was the professional of knighthood, who for his matchless skill became ennobled and was received at length into the family of kings, sharing with them their burial place.

Yes, but the qualities these men exhibited are not unexampled nowadays. A certain champion of to-day, not less celebrated, known to a far greater circle in his world-wide fame than Plantagenet or Du Guesclin—Jack Dempsey by name—has performances to his credit that impress me far more than those of Richard or Bertrand.

True, he is only a boxing man, but we are now stripping the show of its adventitious aids and looking to the essentials. Jack Dempsey is finer in physique than any knight of whom

I can find authentic record, and the stories of his prowess are more alive with the sense of skill and speed and adaptability and cool, unfaltering courage than that of any recital of the slow though spectacular jousting. But in education? In mental endowment? There again I give the palm to the modern fighter. He is intelligent; he can read and write; he has never disgraced his strength by acts of fiendish cruelty nor given the exhibitions of vanity or besotted rage that are so common in the mediæval tales. Certainly, I do not draw the inference that Jack Dempsey should rule over the English-speaking world; I am only using his figure to give us a scale to measure the structures of the past.

The Peter-the-Hermits of to-day are found in their finest forms in those missionaries of salvation like the late General Booth, who taught peace and forbearance and mutual help, and in their most characteristic examples in those semi-insane priests who preach Holy Wars in some Moroccan or Turkish town.

A German scientist has said with as much accuracy as we have a right to demand in an epigram: The heroes and saints of old are in the prize rings and the lunatic asylums of to-day.

Then, further, apart from the personalities who figured as of high importance in the pageant—not the obscure Roger Bacon nor the vilified Galileo—when we come to the principle on which their greatness rested, we find that the chief criterion was that of material goods. The prowess had its merit in acquiring these, and every form of violence, greed and cunning, was excellent if it could show such possessions as the fruit of the work.

Amongst a people where few nobles could read or write, and where even those who were instructed could not perform simple feats of casting up accounts, where science was thought despicable when not dangerous and wicked, and where music was played with the fist, high thought, noble aspirations of progress, enlightened views of life, or of men, or of women, or of the animate or inanimate world, were out of place. The "science" of the time was that of the intricate study of artificial signs of pomp and power; the literature was that of the songs that spoke of love or of war, that pleased the senses and flattered the pride of the great.

Here, again, if from a detached point of view a glance be taken at the route of human progress, it will be seen with what pain and difficulty the thoughts, and the careers, and the discoveries, and the toil to win a better state, have been wrought.

This example may help us to make the effort to get beyond the prejudices and the superstitions and false views of our own time, for every age is an ending of an imperfect past and the beginning of a struggling future.

Democracy and Aristocracy

Having, therefore, cleared the ground to some extent, we may now consider how best to build up a form of government suitable to our own time.

We must not allow ourselves to be carried away by mere shibboleths, whether of democracy or aristocracy. These terms, or others that will perhaps replace them, may be susceptible of definitions that will reconcile them. The modern manner of using democracy as a flag has the air of being a revolt against the undue pretensions of aristocracy, but that is not the best ground on which to advance its claims.

All have an interest in the government of a nation upon whom fall the effects of its laws, and this involves the whole population of the state. To this interest some adequate expression should be given, and the question arises as to the manner of representation.

It is obvious that young children, though they have rights which should be respected, cannot themselves adequately protect their rights, because they have not the power and because they have not intelligence sufficient to guide them in the steps necessary to safeguard their own interests.

In this case some form of representation is necessary, and the question is now presented as to more general forms of representation. The persons who are best fitted to represent children are those who know their wants and who are placed in such a relation to them that they would be most likely to use the power conferred by representation for the benefit of the children; the parents would here be generally indicated.

With regard to the whole population something analogous

happens. They all feel the incidence of laws, whether by reason of taxation or of acts which demand their services.

It is obvious that the whole population cannot deliberate together, but this difficulty can be met by delegation of authority. The obstacles to deliberating in large numbers are not the only difficulties. Many of the regulations or laws that are framed in a country are of general application, and the ordinary plain man is not fitted to deal with matters involving many issues and exhibited in complex form.

This truth is obvious, one might suppose, but politics—and we are now entering upon that domain—excites passions and jealousies, and shibboleths are apt to be evoked which make little of obvious facts. I remember the case of an Australian Prime Minister who had begun as a demagogue and who developed into an upholder of the old Conservative institutions. He inquired, in this later phase: What can a man following the plough know of complicated matters of finance?

This question gave great offence, yet if in his democratic days he had expressed the same difficulty in another manner and with another intention he might have been approved. For example, he could have suggested that, whereas the man following the plough is certain to feel the incidence of taxation, and that this taxation often falls upon him with undue severity, therefore it is highly important for him to have a friend at court, or in the council chamber where laws are made, who will sympathize with his needs and who will exercise a watchful outlook on all the intricacies of the legislation that affect him.

Thus expressed, the proposition might be acceptable. Whom, then, shall the man following the plough, or any man of a village community, select to represent him? Perhaps there is no one in the village gifted enough in knowledge and intelligence to perform that function. That is not unlikely, for in my experience of Parliaments I have very rarely met with anyone both sufficiently experienced, sufficiently educated and sufficiently endowed with acumen and balance of judgment, to trace out all the effects in succession of an important act of legislation.

Questions of tariffs, for example, involve complicated relations with foreign powers, and these relations again

depend not only on the points of commercial contact, but on all manner of contingent questions of good will, power to support allies or to inflict harm in any crisis, and so forth throughout the whole range of the diplomatic field. All the affected nations are, of course, within this purview, and there is the further question of balancing their relative importance. Then there are the important internal questions, and these involve considerations far beyond those of the trade affected by tariffs, for though a favourable tariff may act by way of stimulation to a struggling industry, it will not supply the place of organization. The organization of an industry is a matter, again, which implicates many elements of the nation's life in a subtle way, embracing moral questions concerned in credit and confidence, and also wide-reaching matters of education, including highly specialized scientific education.

Here we have but touched the fringe of the subject, but I will not insist, because the discussion of the whole matter would develop into extraordinary complexity. Briefly let it be said that just as a man would not send a valuable watch for repair to an auctioneer simply because he was eloquent, so when dealing with a living mechanism, such as a State, of far greater complexity and sensitiveness, one should avoid here the mere orator or manipulator of political tricks, and seek the advice of those who have studied such problems scientifically.

It is extraordinarily rare that the worse course is not adopted, and with most existing forms of legislation that inferior result is inevitable.

A like strain of argument will convince us, even if practical examples did not make it evident, that in the multitude of counsellors there is not always, nor even generally, wisdom. The popular sentiments in regard to internal affairs of the great mass of the people of a country are generally right, because, apart from personal advantage, a sense of justice, born of truth, prevails. But when a question of opinion as to ways and means arises, the decision of the majority has no especial value.

In matters involving great knowledge of diverse matters and high intellectual processes the opinion of a majority has, in its own character, no value at all. It is not by accident,

nor even by intuition, but by a strain of serious and patient thought that one arrives at the solution of any problem, and the greater the number of factors concerned the more probable is it that any conclusion otherwise obtained is likely to be wrong. That, moreover, has been the history of the world. There have been many times when, even in matters that redounded in great material interests, the opinion of one man was worth that of millions who differed from him.

Galileo's opinion on a fundamental point of mechanics was worth that of the whole educated world when he decided that if he dropped two pellets of lead of different weight from the tower of Pisa together they would reach the ground together. Darwin's opinion was derided almost unanimously by the people of his day, but it has since prevailed. Clerk Maxwell's opinion on the similar nature of electrical and light waves was of more value than that of the rest of the population. But these are matters of science, it may be said.

Yes; and the reason why the question of the effect of laws is not so regarded is that the factors are more complex than we meet with in many sciences, but our ignorance of the matter, or our indifference to the intellectual side of these questions, does not prevent the disturbance of the system of the state operating duly.

This discussion has really cleared the ground a little. Obviously it would be rare to find in a limited community a man capable of dealing with the complex affairs of state regulation. In each community, however, it would be possible to point out the man best fitted to be a representative. Here the opinion of the majority might be relied on, for even if occasional mistakes are made, they could not be grave, and they would become balanced. By such means, then, we secure an elected body, but this is also too large and unwieldy for practical purposes.

Each of the selected representative men would now be able to take a wider survey of things than the average individual of his electors. A wider area, involving several of the smaller communities, could now be adopted as the constituency of a new election, in which the electors would be those first chosen.

This being the principle, its extension is easily seen, and

it can be continued until a small and manageable body be at length obtained to take charge of legislation. At each stage of the process anyone might be eligible for election, even of those missed in the earlier elections.

I will not work out all the details of such a mode of selecting a government, but a few remarks may be desirable to prevent misunderstandings. This method was in the mind of the framers of the constitution of the United States of America, but they did not carry it out elaborately. They simply interposed an electoral college between the original voters and the chosen assembly of legislators, but they had not foreseen the extraordinary development of political engineering in America, the effect of which has been to render the electoral college almost like a system of mechanical recorders.

This defect I would remedy by having the elections at various times, so that the general interests could be regarded and not the cries of a rushed electoral campaign. Further, I would give definite responsible functions of a certain durability to each of the successive elected bodies, beginning with something of the nature of parish councils, and increasing in scope and outlook up to the administration of departments and the legislation for federal states.

In this way also, while the value of the legislature would be enhanced, the importance of mere politics, as a trade or a distracting influence upon the activities of the country, would be diminished. The reduction of the influence of the legislative assembly would give greater power to the executive. Finally, the chief authority would be vested in one man chosen, preferably, by the last of the selective electorates.

The legislative assembly itself would give way on all matters involving decisions based on special knowledge to councils set up in part by itself and duly armed with authority.

The president, chosen for a term of years, say four or five, but with eligibility for fresh election, would be invested with great power both of initiation and control, though kept within the limits of a constitution subject itself to revision and progressive amelioration. The model finally reached is somewhat reminiscent of the First Consulate of Napoleon

Bonaparte, though resting on the consent, duly ascertained in a better way than then adopted, of the people.

That such a system would be democratic is sufficiently assured by the wide basis of the first electorate, and it is seen in this example that there is nothing inconsistent between democracy and aristocracy when the aristocracy arises by free selection for the purpose of the service of the whole community.

Hitherto aristocracy has been based on hereditary privilege, but that system is false by reason both of the hereditary character and the privileges. The laws of heredity are not yet well ascertained, but from what we know by way of science and from what we are able to observe and to find in the records of history, it is evident that they give no warrant for supposing that the virtues which have made a man acceptable for a position of power will be transmitted to his descendants.¹

The other condition that now exists, that of privilege, is still less defensible, for in our glance at the main character of the principle of feudalism it is evident that these privileges were gained, not by qualities that told for wise leadership, but rather by modes of violence, which have in the course of progress been relegated to an inferior category.

The crisis of development which is felt in most countries of Europe arises, indeed, less from the principle of aristocracy in itself, if this be properly understood, than in the wrong determination of aristocracy by haphazard and now obsolescent methods.

The vesting of the highest power in one man and considerable power in a small body of men is fraught with

¹ Even in the cases where races are kept exceptionally pure, as in the breed of racehorses, there is no ground for assuming the hereditary transmission of excellence. If there were, the Derby winner would be automatically succeeded by his first male offspring. So far from this being the case, the breed is kept efficient only by continual and severe tests, and the inferior stock becomes, not carefully preserved as in the human institution, but eliminated.

The analogy must not be drawn too closely, for racehorses are prized only for one kind of test, and they are subject to control and careful training while being fitted for this special form of election. With human beings the faculties required are far more complex and varied, and less susceptible to direct training. The only available test, even in a scientific manner, of merit, is that of actual trial.

certain dangers against which safeguards may be introduced, but when proper modes of choice are adopted and limited terms of office instituted, the evils are kept within bounds.

The choice is between such forms and that of large assemblies, as, for example, the Houses of Parliament. Here a point of experience comes in, and from all that I have observed of such bodies I regard them as very inefficient.

In all matters where definite action on the part of the state is involved a decision must be taken. Stated in these terms that proposition seems almost absurdly simple, but when the decision is taken by one person the act is clear and the responsibility is definite, yet when a decision is taken by a large assembly, though the responsibility is less well defined, the consequences of the act are not on that account conjured away.

For example, I have seen a great assembly come into a state of war, without preparation, simply by drifting, because it fell to no one to assume the responsibility of facing the impending crisis; and, when a crisis had arisen, I have seen the same assembly fail by reason of defects both of intelligence and character.

The only chance for an assembly in such a crisis is that one man, by his ability or character, should dominate it, as Themistocles was able to override the inferior proposals of the council set up for the defence of Greece. Such a dominance implies a form of selection, but it is better that the choice should be obtained by methods that ensure a full consideration of all the factors.

As a matter of experience it will be seen in the records of history that most of the great works which have advanced and adorned humanity have resulted, not from the wisdom of assemblies, but from the clear-sighted vision and the energy of one man or a small group of men.

Suppose, now, that we had begun at the other end, and in the attempt to devise a suitable form of government had invoked our principles of Truth, Energy, Sympathy, we should have arrived at similar conclusions. It must be borne in mind that the continual reference to first principles may become too unwieldy, but that, in complete accord with scientific method, we may found institutions that are

governed by these principles and that then afford us convenient guides. Thus the navigator guides himself over the trackless waters by the stars, but when he comes near the land he steers by beacon lights and other signs that he has set up.

If, then, we wish to institute forms of government that will foster the progress of the race, we look to find a governor endowed with the principles of Truth, Energy, Sympathy. These being translated in this case into other terms that are familiar in public affairs imply high character, great ability, public spirit, and knowledge of the conditions of the people. If, then, we set about finding these in the state, and with the general consent of the governed, we shall be led to considerations that reproduce in the inverse order those from which we previously started.

When a good government shall be finally obtained, its functions should less suggest the noisy and rather futile assemblies of the present time than the deliberate and effective grappling with practical problems such as are involved in the removal of obstacles to progress. These are not all nor even mainly political, though the lessening of chances of war belongs to some extent to that category.

Take, for example, the question of tuberculosis. The ravages of that disease when expressed in money value alone, as estimated by the limitations of life value in the nation, must throughout Europe run into hundreds of millions of pounds. The misery caused by its ravages is not less than that of a great war.

That disease can be extirpated. That fact alone stands in the way of accusation of our defective governments, for hitherto only the feeblest and most inefficient attempts have been made to deal with it.

It would lead too far to discuss this in detail, and I have used it only as an instance. I say from experience that there are a great variety of examples hardly less striking where a great and enlightened government, guided by science, could introduce ameliorative measures which would give an immense impulse to progress, even in the sphere of material interest.

The physique of the people is wonderfully adaptable to improvement by improved conditions, and on this line alone

a far greater scope of life and a larger volume of happiness than now prevails could be secured.

With the energies of the nation feeling the stirring of a new onward march, art and literature would develop in new and higher forms in correspondence.

The care of the "common people" should be a sacred charge to the governors, but this is consistent with efficiency.

International relations are susceptible of enormous improvement. Then when we envisage the whole earth we find what vast resources we have hitherto left uncultivated while suffering from overcrowding, according to present conditions, in certain areas. That overcrowding can itself be ameliorated by a better study of scientific means of utilizing the resources at hand.

Finally, while in this way we pay particular attention to progress as measured by material standards, we find a higher ideal, though not incompatible with this, in the direction of our powers to the conception of a great ethical purpose.

CHAPTER II

WAR

THE question of war is becoming even more important as civilization develops. No discourse of ethics should ignore its existence, for evidently our whole standards would be modified if war could be entirely eliminated, as compared with what would prevail if war were for ever a necessity of human society.

Looked at as an objective problem, we see in the world all sorts of forces which tend to make for war, and we see forces resisting the operation of the others. Can this resistance be so organized as to render ineffective the war-producing forces, or will these become gradually modified, or changed, or eliminated?

Suppose, to take an illustration, that we had a number of material particles or systems endowed with various movements and all enclosed within a limited space. The agitation of these bodies would continue for an indefinite time, and it might happen that their movements would never resolve into that particular form which we had taken as representing peace. In the social world, is it not possible at least that the incessant shock and reaction of emotions and interests in myriad diversity might be of such character that the movement would never resolve to peace? If that really were so, then, however attractive the ideal of universal peace might be, it would be absurd to build our ethics on that basis.

Let us examine the question dispassionately. The facile and commendable attitude is to disapprove of war and to praise the blessings of peace. On the other hand, there are men, as, for instance, von Moltke, who consider war as an ordinance of God. Even Milton lays down, as one of the qualifications of a good citizen, that he should be fit for the arts of war, and that requirement implies that war is looked on as a permanency. Napoleon at St. Helena could hardly

comprehend the state of mind of a people, I think it was the Manchurians, who did not make war, and who therefore possessed no warlike weapons. That was perhaps the professional point of view, but I have also known a man of peace who did a great deal of distinguished work in science and who, as a result of his philosophic reflections, concluded also that war was both necessary and salutary. We made great play during the world war of the writings of Bernhardt and others of that school, but they could be easily paralleled for their barbarity by writings of authors in this country or in any other of the Allies.

There is this much to be said also, that those nations which have despised war have always been dependent nations. That was true of the people of whom Napoleon spoke. It is true also of the Burmese, who have a fine code of morals, greatly superior in many respects to anything that prevails in more civilized nations, and who have given practical effect to their pacific theories. They labour under one great disadvantage which might well outweigh the horrors of war, that is, that they are subject to another people.

It is evident, therefore, that the problem is not quite so simple as it looks, or as it is declared to be by those moralists who settle everything by an appeal to a sort of quietism, as if that state represented the highest beatitude of man, and who deal with all difficulties by refusing to look at them.

On the other hand, Lord Roberts declared that war brought out what was best in a man. I am tempted to say from many examples that I have seen that if it brought out this best, it succeeded also in keeping it out. In this respect we come to the same fallacy that we meet with in the so-called character-forming games. These games may help to form character, but the characters they help to form are simply those best adapted to play those games. Chess, for instance, is supposed to be mimic war, and it certainly promotes foresight and planning, but the man who makes himself a proficient chess-player does not always make use of these qualities in other exercise than that of chess.¹

¹ The celebrated Paul Morphy, when he astonished the world by his brilliant tourney in Europe, where he beat all the chess champions,

With regard to cricket, I have read that it trains to rapid thought and bold decision. That is perhaps true with respect to playing the balls one meets with in cricket, but the general tendency of the game, especially in those who have devoted too much time to it, is to produce rather a slack attitude in regard to business, and occasionally a feckless character. Cricket simply trains for cricket.

So it is with war, and here the training may be of varied character. Let me cite two different instances. On one occasion a soldier whom I knew found himself surprised at an outpost. Three men suddenly jumped at him; one shot him through the leg, another plunged a bayonet into his breast, and the third fired at and missed him. Without being disconcerted for a moment, he shot the first man with his own rifle, pulled out the bayonet and rammed it into the body of the other, and clubbed the third with the butt end of his weapon. His own wounds were severe, but he walked back to camp, and in a month's time he was again eager for service.

The other instance is that of a man who was specially trusted and favoured by his superior officers, and who was placed in charge of a railway junction. He neglected his duties, and he intercepted to his own profit some of the provisions consigned to the Commander-in-Chief. Amongst this booty was a keg of whisky. This he broached, and added the crimes of drunkenness, desertion, and violence towards his superior officer to those of abuse of trust and general neglect of duty.

Which of these two men are we to ascribe to the credit of war? The question is rendered still more difficult by this fact, that these two were the same man.

We must regard all these matters eclectically, and when we find a case of heroism in war not impute it directly to

was summoned home by his friends to stand as candidate for the Presidency of the United States. They thought it a pity that so high a genius for planning, deliberation, and foresight, should be lost to the service of the country. Morphy, however, had no talent for statesmanship, and even in his own more modest business of solicitor he was not a conspicuous success. The simple fact is that chess had trained him to be a good chess-player, but had rather unfitted him for other pursuits. On the other hand, Napoleon Bonaparte, who was a past master at the art of war, played mediocre chess.

the refining influences of that ennobling pursuit. On the other hand, when we find instances of scoundrelism and brutality, and low forms of morality of an ordinary kind, we must not derive these either immediately from the influence of that contaminating occupation. It is usual to commit both these errors.

When from time to time I have read of the exploits of a hero who has gained the Victoria Cross, I have had the suggestion come athwart my mind, even in spite of myself, that it would be necessary only to change the names and the locality in order to have a thrilling description of a first-class burglary or the exploits of a foot-pad.

It may be said that the hero has ever before his eyes the high idea of duty, and that this sustains him, and that therein consists the difference between himself and the highwayman. I take leave to doubt in certain of these exploits the abiding influence of a high ethical motive. It seems to me that we are simply face to face with a case where a man of good physical endowment and reckless disposition sees a chance of giving a great display within his power. The comparison is not altogether devoid of justice, because we may resist being unfair even to the highwayman. The fact that he is breaking the law stands to the debit side of his account, but that is no reason why his qualities of courage, coolness and resource should not have full credit.

From a consideration of cases of this kind, and from all that I have read, especially of the after fate of soldiers, I conclude that war is a good training simply for war, just as chess and cricket are good training for chess and cricket.

When therefore Lord Roberts says that war brings out the best in a man, the qualities that he terms best are those specially serviceable in war; but if war were to cease altogether, these particular qualities, if they were not useful for peace only, might be allowed to fall into desuetude. At this point we seem to have an instinctive revolt; we are proposing to allow to decay shining qualities which have won our admiration. Upon reflection, however, we see that that is inevitable, as we pass from one stage of evolution to another. Further, in as far as these qualities may be required in peace, then peace will afford an adequate training just in as far as these qualities are advantageous.

Napoleon, who was one of the most successful commanders of all time, was careful not to allow his own prestige to rest solely on his talent for war. When he formed a court, he insisted upon a certain etiquette, and he kept his great generals waiting in the ante-chambers while he transacted civil business, in order to show to them that they occupied in the whole machine of government a less preponderating part than they might otherwise have imagined.

Let us now look at the actual history of war itself. It is true that there never has been a period in the history of the world where warfare has not been practised, and it is also true that those who have waged warfare most successfully have dominated other peoples and imposed upon them their laws, their customs, and their ethical systems, or at any rate some formal obeisance to these.

Rigidity of the Military Mind

It is true also that at no time has progress in the art of war itself been due to trained warriors. From the most rudimentary condition of society where one individual throttled another with his bare hands, or brained him with a club, we rise slowly to the state of affairs, as for instance such as described in the Iliad, where shields were used and pieces of armour were employed for protection, and where weapons such as javelins, the product of skilled artisans, replaced the bare hands or the club. Protective armour and the weapons were not fabricated by the warriors. It was Vulcan and not Mars who gave power and dignity to war.

The military mind is in general limited, and rigid, and devoted to routine. Thus it happens to be true that, as I first heard expressed by Anatole France in a tone of philosophic irony, the highest military leaders, the great world-conquerors, have usually been "not soldiers at all." He cited Alexander. Alexander was not a soldier who had entered the ranks and won his place successively by attention to work and efficiency in the details of his business. He was "the son of his father." Philip was a far more competent soldier in that sense than Alexander, but it was precisely because Alexander had never had his mind drilled, and his talents ankylosed in the routine of a soldier's profession, that he was free to form great conceptions, and

elastic enough in spirit to receive and adapt new ideas. Alexander was a poet of great exploits, who seized on war as his instrument of expression.

Take the next world's hero—Hannibal. Hannibal's training, such as it was, resembled that of Alexander. He was early made acquainted with war, but his mind was never broken by the details of a subaltern's work. He took chief command, not by having won it through successive grades, but because he was a personality of another kind from that of the ordinary soldier.

The next example cited by Anatole France was Julius Cæsar. Julius Cæsar, when he was sent to take command of the army in Gaul, was little of a soldier but rather a politician. He was a *dilettante* in literature, a man about town, a pleasure-seeker who had debilitated his constitution in fatigues that had nothing of the martial about them. He had, however, the inestimable advantage of a plastic, lively mind, open to new impressions, and adaptable to new conditions. Consequently, when he did take command, he sent the impress of his own genius throughout all the ranks of the soldiers whom he led from victory to victory.

As I listened to the unfolding of this remarkable thesis, I held in reserve the great example that would overthrow the whole edifice of paradox. "Napoleon Bonaparte!" I said.

Anatole France smiled with that indulgent smile of the man whose knowledge is large and whose tolerance is proportionately great. "Napoleon Bonaparte," he replied quietly, "was not a soldier.—That remark may require a little explanation. It is true that Napoleon Bonaparte had some training at the military school at Brienne, but as a trained soldier he had no recommendation beyond that of a second-lieutenant of great ignorance and mediocre value. With few intermediate stages he leapt to the chief command of the army of Italy, and bringing to that field a fresh and powerful mind, accustomed to reasoning, he out-distanced the professional soldiers, such as Augereau, or Rampon, or even Masséna, or rather, he showed himself to be a thinker and a man of action of superior quality."

Returning now to the question of arms and tactics, we find there again how slow and ineffectual has been the

military mind in regard to the improvements of the means of warfare.

In the Iliad we have the impression of fierce but erratic fighters, greatly dependent on rules and little apt to well-thought-out concerted action, or to good team work, or to efficient direction of a general staff. The device of introducing a wooden horse into Troy is one of those strokes of genius more likely to be praised after success than to be recommended previous to trial. It has the puerility of a fairy-tale, and we cannot even ascribe its success to the credit of military training, for the Trojans were equally trained, and yet they allowed themselves to be deceived and ultimately beaten by so crude a theatrical effect.

The first great improvement in methods of carrying on war was that of Alexander in his formation of the Macedonian phalanx, but that was only likely to be successful against such enemies as he encountered, who endeavoured to make up for a lack of military capacity by the vast numbers they threw into the field.

The Roman soldier carved his way through the world with his short sword. In reading the accounts of Roman warfare, one has the impression of a well-organized system followed from generation to generation with a sort of religious faith. The system is solid, efficient within its own line, but limited in many respects. The Latins were successful because they met with foes less advanced intellectually than themselves, and who opposed the Roman discipline and solidity and efficiency with gusts of impetuosity.

The ancients had used horses, but except in a few instances the horse was rather a means of transport. It was not until the days of chivalry that the horse was used as a weapon. The use of the horse and the lance was answered by the elaboration of defence to that extraordinary degree which has left us the image of the knight of old weighted from head to foot with his harness, and riding a horse also ironclad to an egregious extent. This made it necessary that the horse should be above all things a weight-carrier, and therefore proportionately slow and unhandy. The knights lived in an age when war and religion, according to their ideas, had both reached their culminating point, and the records of that age distress us, even at this lapse

of time, not merely for their barbarity and cruelty, but for their ignorance, superstition, and stupidity.

Out of the interminable intestine struggles of petty states, which led to nothing except confusion and fresh slaughter, we have the splendid, romantic, and picturesque exploits of the Crusades. The net result of these, educationally, appears to have been a shaking of the faith, or at any rate a modification of the forms of devotion of some of the great crusaders, and the teaching of severe but useful lessons as to the art of war.¹

The use of gunpowder, which made its first appearance in a field of battle at Crécy, changed the face of war. But here again we have an invention not due to the intelligence of a practitioner of war, but resulting from the scientific researches of a learned but poor and despised monk.

The next notable advance in war was that adopted by Marlborough, who recognized that not only was the horse the weapon of the individual soldier, but that the massed power, represented by the drive of a compact body of cavalry, would sweep away the ordinary resistance of the enemy.

Frederick the Great added something to the military arsenal. He welded together separate forces into a solid bar. Napoleon retained the cohesion of such a force, but broke up the bar into a flexible chain. His astonishing military successes were gained on fairly simple lines of strategy and tactics, and it was not until his career was near its termination that any of his antagonists discovered the secret of those tactics, and sought appropriately to counteract them. Napoleon himself, for his part, did little to develop or improve the new forms which in his early years he had introduced into warfare.

¹ The crusader, with his iron-encased figure, riding his pompously caparisoned but over-weighted farm-horse, his helmet bedecked with nodding plume, was extraordinarily picturesque, but somewhat ineffective. He recalls at some distance those imposing grenadiers of the father of Frederick the Great, to one of whom that irreverent young man tossed a guilder, promising that he could keep it if he could only stoop to pick it up. The Saracens were lightly clad and lightly armed, and mounted on lively little horses. In single combat the knight of chivalry stood little chance with such a type. That was, I think, in the main the story of the Crusades, though the returning warriors told their own tale, and, as is not unusual in history, we have an unconvincing account of the actual happenings.

It was reserved for an agricultural people, in quite another theatre of life, to show the world a new system of defence, whether by trenches or by the careful selection of the irregularities of the ground. It is true that trench warfare had been employed before their time, but never in the same manner and certainly never with that sort of fertility of resource which gave the suggestions acted upon in the world war, where to powers of offence such as exceeded the dreams of Napoleon were opposed powers of defence still more remarkable.

Throughout this whole brief review, touching on the salient points of development of warfare, perhaps the fact that is most conspicuous is the mental inefficiency of the great professors of the art. The military minds remained faithful to their tradition. On the part of the commanders, with a few brilliant exceptions, we had colossal blunders covered up by the sacrifice of holocausts of soldiers.

If war were then to be a permanent institution in our civilized life, we must necessarily accept it, and mould our ethical conceptions to fit in with that condition; but even then we could hardly refrain from a regret at one of the incidental consequences of war, that on account of the prestige and glory and popularity which it brings, we would be compelled to submit to the rule of inferior minds in matters of general education, of science, and of ethics.

Advantage of Co-operation

Let us once again revise the history from another standpoint. When two neighbouring cave-men met, and fell to gouging each other's eyes out, or tried to smash the brain pan one of the other, the fittest may have survived; that is to say when the word "fittest" is interpreted as we have already seen in discussing the question of evolution. It does not follow for that reason that such a conflict was something excellent ethically or in any way beneficial to the race. One of these men, the fittest, for example, might have gone hunting so as to be able to lay in a store of provisions for both, while the other, now lying with his skull battered in, might have been employed meanwhile building a habitation which would serve a useful purpose for both. War, even at this rudimentary stage, runs directly counter to that principle of

co-operation, whose sanctions are founded not merely on our own notions of approval or disapproval but on the very foundation of the world itself.

In our own day contests of the kind, though modified in detail, are continually being carried on. Here are two small farmers, for instance let us say in Kilkenny, though it may be anywhere in these islands, whose boundaries march with each other. They have all sorts of reasons for helping each other, and with mutual co-operation they could not only make out a comfortable living for their families, but also improve their worldly positions. They quarrel over a little strip of ground a yard wide. They fight it out not with bludgeons or firearms, but by going to law. Neither will accept defeat, and they persist with dogged obstinacy in bringing the case from court to higher court, until one has at length triumphed, but both have been left exhausted and ruined. There again the fittest may have survived, but it is once more evident that nothing is more misleading than the wrongful use of this particular term.

We have observed in these simple examples a lesson that might be applied to the struggles of nations, and we see how unphilosophical is the use of that principle which has served to build up portentous books to the detriment of the nation which produces them. To be a great philosopher it is not sufficient to misinterpret Darwin.

Proceeding from the combat of our two individuals, we next reach the feuds between different clans. We have already seen that the reforms of Cleisthenes consisted in main part in breaking down the cause of the hostility between the clans, and joining them in co-operation, but we also find in our retrospect that mere progression of time has no immediate relation to the advance of civilization.¹

¹ This fact was brought home to me vividly when I paid a pious pilgrimage to the burial place of one of my own kinsmen in the Scottish Highlands, Rob Roy MacGregor. After gazing on his tombstone, and observing an epitaph in Gaelic, which reminded me of the depths of the roots plunged in the past, I glanced round the graveyard. There I beheld on another tombstone a fierce accusation against my clan by a representative of the Maclaurens, who accused us, or at least my maternal ancestors, of having crossed the mountains surreptitiously and fallen upon them in a murderous attack.

While recognizing that this lapidary pamphlet of the Maclaurens was a partisan statement to which we had vouchsafed no reply,

The story of the Greek villages and of the Scottish clans is represented also in the histories of little Italian towns, which still remain to delight us by their beauty, Pisa or Verona or Ravenna, Florence or Genoa or Venice. These towns that lived in a state of warfare with each other, more or less continual, now enjoy mutual interests; they are but parts of a united nation which has been formed by welding together smaller nations still more disparate than these. Has Italy lost by this result? Or have the individual towns found this union to their disadvantage? Not even the most pronounced war-maker would say "yes."

The history of Italy in this respect is similar to the history of most countries of Europe. But Italy, which has been formed by the junction of so many different smaller powers, is itself but a small power in the whole system of Europe, and the whole of Europe occupies only a part of the complete system of mondial relations stretching from continent to continent.

content, perhaps, with their own acknowledgment of our superiority, my attention was forcibly struck by one or two facts. One was that both clans spoke Gaelic, both clans had the patronymic "Mac," and both clans had no doubt an origin either identical or closely associated. Then again there was the word mountain; a mountain only divided them. The mountain had no particular attraction in itself, since it was considered a sufficient barrier. Yet these two clans could think of nothing better than mutual slaughter, and since even the most warlike people seem to require some pretext for slaughtering, there can be little doubt but that feelings and emotions and grudges and points of honour and clan patriotism had been worked up to boiling point in the breasts of the MacGregors and the Maclaurens.

Then we have all the evils of the after-game of war. It is considered not merely honourable but in the highest degree praiseworthy at certain times to slander and vilify our enemies, to misrepresent them, to spread all manner of false stories concerning them, to whip up our own prejudices until mere prejudice itself seems a virtue, and to deny excellence to the enemy, even in those works where some great mind has transcended petty limits of time and space, and given to the world something, some happy stroke of genius, of art, or of science, that adorns or raises humanity itself. This misrepresentation is replied to in kind. The falsification becomes precipitated into our histories, and serves to misinform and contaminate the minds of growing children.

Looking at the matter in this light, I confess that I was warned to take less pride in the glory of clan history, and however much I may have been tempted to plume myself upon the success of the MacGregors, I had formally to acknowledge that the whole affair was deplorable.

The Avoidance of War

We therefore arrive at the point where we can ask the question as to whether it be possible, by the united consent of all these people, to secure such a state of affairs that war becomes eliminated. There are two ways of securing peace. One is that a great power should subjugate all the others, and bring them all under the domination of its own form of civilization. That actually happened, though for a comparatively brief period, under the Roman empire; but, as we have seen, that empire fell to pieces for the want of elasticity and illumination and central brain power.

At this stage of the world's progress such a solution seems both difficult and undesirable. What other solution is there? That of a League of Nations. I do not say *the* League of Nations, for that would refer to the actual form of a League of Nations as set up by some of the Allied Powers after the war. That particular form of League was not well conceived in certain of its essentials, while in some of the details it showed a lack of statesmanship such as rendered its operation impracticable.

It is not part of a work on ethics to deal with controversial political matters in a partisan spirit, though, on the other hand, a work of ethics would be incomplete and indeed futile if it did not advance the principles on which such institutions could be judged and criticized even to their details.

I leave the matter there, with this general indication which should be sufficient. The question which I set out to discuss was as to the necessary permanence of war. I conclude from the forms of development that have already taken place that war is not a necessary institution for civilization. It can be eliminated, and if it can be eliminated, then, because it has so many contemptible and atrocious features, it must be eliminated.

The human race will not lose by the disappearance of war, for since man's ultimate struggle is with the forces of nature, there will always remain in this vast theatre enough to try his finest sentiments of courage, of sacrifice, of good-fellowship, of devotion and heroism.

CHAPTER III

FAVOURITE ETHICAL QUALITIES

Courage

ONE way of treating the question of ethics is to select some striking quality, such as courage, or self-sacrifice, or benevolence, and to extol this quality, magnify it, and elaborate it so that the actions of the world, as far as morality is concerned, seem to revolve round it.

The method itself is faulty, for it is evidently tentative; there is not shown a derivation of the principle from a deep source, nor any commanding reason for selecting this good quality in particular, nor any means of exhibiting it in relation to other good qualities which would be assured of our immediate approbation.

Even if this were attempted, we should be reduced at length to a category of virtues which we could recite as a litany, saying: Our good man shall have each of these virtues. Then we might recite the list of the faults and vices which he must avoid. Then the story of ethics could be told.

This would not be satisfactory, for in contemplating a human being, and especially in studying his development, we have the sense of a certain plasticity of the qualities, physical, mental, and moral, that go to make up the personality, and we see that much depends on cultivation and on the conditions of the environment. Then we appreciate, more or less distinctly, the need for the standards to be adjusted in regard to some purpose or intention or mode of life and career of the individual.

To give a list of the virtues and declare that the individual must possess them is a counsel of perfection, and yet it fails on account of not giving us a sense of structure, of development, of the life of an organized being.

Let us consider courage. I know a queen who sets in

the highest place of all her admirations Richard Cœur de Lion, singling him out for that high honour entirely for his courage.

Another eminent personage who at the time of speaking was following the prosaic occupation of a Member of Parliament assured me also that the first and greatest of qualities was courage. I was struck by the way in which he uttered the word. He spoke it with conviction, with an air of restrained admiration, yet with a sort of lingering regret, as though such shining virtues were not for our time. Subsequently he found his opportunity during the war of realizing his own high conception of courage, and he did not fail to distinguish himself.

In these little incidents I seemed to get the clue to the treasuring, deep in the intimate recesses of the mind, of this quality that hitherto I had associated with rough men—bushrangers, pugilists, butchers, or sailors—rather than with the refined but somewhat enervated beings who enjoy the privileges of society.

Courage is the romantic virtue, or rather the virtue of the heroes of romance. It brings in a flood of suggestions of haughty spirits, of dancing plumes and shining swords, and superb disdain of danger amid the fierce encircling fires of fate, and of the triumph of the graceful, supercilious knight over the coarser and uncourtly man of brawn. It brings in sweeping visions of paladins, desperate charges, and victory resting at last, as if by Divine right, on the oriflamme of the perfect knight.

I am sceptical of this representation of the heroes of history, for having seen men at the work I should be inclined to trust one trained in a hard school—the Australian bushwhacker or the American Indian fighter—rather than the type of the *matinée* idol.

It was an Indian fighter who gave me a very different reply from that of the M.P. nourished in literary ideals. He said that he laid no special stress on courage, because everyone had it. The remark surprised me even from one whose blessed memories went back to the days when he rode with Custer and fought side by side with men who died, not theatrically but fiercely fighting to the end, and who flinched neither from fatigue nor privation nor from danger.

But even the talk of my friend made me circumspect, at least in my admiration of courage. Custer, he said, lost his life and sacrificed the object of the expedition with which he had been entrusted by a want of balance between his courage and his intelligence in tactics. His next in command, Reno, saw him and his troop perish without raising a hand to save him. That might have been difficult or even impossible, but my Indian fighter thought that here the tactics were in excess of the courage. Already, therefore, we are departing from his sweeping assertion of the universality of the quality.

If we turn our minds deliberately on that question, we find that the great art of war has been built up by way of restraint of courage. To protect oneself by a Macedonian phalanx, to shoot an arrow at a foe from behind a wall, to encase the body in a suit of armour in order to ride down a less protected opponent, to mass troops so as to overwhelm the enemy by ten to one, to lie, to resort to subterfuges and to deceit, to starve the other side before attacking—in short, to carry out to perfection the lessons of taking every possible unfair advantage; all this savours less of courage as first presented to us in dazzling form than of astuteness, cunning, fraud, and brutal force.

I do not mean to argue that courage is not useful; on the contrary, it is indispensable at times to serve the tactics which have been conceived in cunning and prudence. But when we find courage, not the end, but the means, not the finest triumph of our plans, but one of the instruments of execution, it is evident that as a subsidiary quality it takes a place secondary to the main motive.

The more we examine the matter the more settled will become our conviction that courage is not anything in the nature of a definite possession which one has in his control, but rather a form of activity of the mind, changeable, elusive and various. The same person may be very courageous at one time and deficient in courage at another, or courageous in regard to one set of circumstances and timorous in other conditions.

Napoleon Bonaparte, who had often shown great personal courage on the battlefield, trembled and hesitated when, as he proceeded to suppress the Directory, the members rose

and shouted their disapproval. Here the Abbé Siéyès showed more fortitude than the great soldier.

History contains numerous examples of great heroes fleeing under ignominious conditions and resorting even to feminine disguises to preserve a life that had been fearlessly risked in battle.

Themistocles, Hannibal, Bonnie Prince Charlie, Marshal Ney are amongst those who illustrate the fact that men of reckless courage will stoop to mean devices to preserve in life the repository of that virtue. I have noticed within my experience how mercurial a quality courage may be. The same troop that yesterday fought with spirit and tenacity may run to-day from some unexpected attack.

Courage may also be greatly developed by acquaintance with the conditions and dangers and also, progressively, with familiarity leading to mastery in the use of arms. A man who cannot ride or shoot may well hesitate to take part in a hazardous expedition where these qualifications are requisite. If he is a master in these accomplishments, then he feels that he can acquit himself on fair terms, and he is eager to show off his prowess.

This consideration just mentioned is of importance. Vanity, which is not in itself a virtue, is a mother of heroism. The term vanity here must not be used in too disparaging a sense, for it is the sign of an amiable trait to wish to stand well with one's fellows and to win their respect. Hence, as Napoleon, who had unrivalled experience in these matters, remarked, the rarest of courage is the two-o'clock-in-the-morning courage.

Skill in the work affects the display of courage, as is strikingly evident when, in face of a chance to rescue a drowning child, two persons stand, one of whom cannot swim or keep afloat in the water, while the other is a strong swimmer.

The courageous person is willing to take risks, but he desires a chance of life. If his fate be already determined, and he yet marches on to certain death, then the term we apply is that of sacrifice or martyrdom. The courageous man may shrink from that; the man who has the stuff of the martyr in him is usually not of the type of fiery courage.

The courageous man is often feeble or irresolute in the

council chamber. Napoleon said that Augereau, the type of the swaggering professional soldier, was despondent even after a brilliant victory. On the other hand, it may be that the man who will formulate bold plans and carry them through with iron will may be timorous in an actual conflict. Stambouloff, the Bulgarian statesman, was such a type.

Courage is not always highly rated in the sphere where it shines most brilliantly and where it is essential, and that is in battle. Marshal Blücher, for example, was the type of neck-risking, forward-driving swashbuckler, but the very impetuosity of his courage helped to bring about his numerous defeats. On the French side there were similar leaders, and Napoleon severely blamed Vandamme for the defeat at Ulm, brought about by the general's dashing tactics at a time when caution would have been more serviceable. In the last war there were numerous instances when hosts of men were sacrificed by leaders whose courage was in excess of various other qualities necessary to the complete equipment of a leader of troops.

When from these examples in the mass we come to single combats, we may study the forms of courage with less distraction. When two trained boxers are in the ring, their tactics are marked less by the flaming generosity that the romanticists associate with courage than by the multitude of tricks, feints, dodging, side-stepping, retreating, and guarding, by the whole category, in fact, of the less celebrated qualities of deceit and sensitiveness to danger.

This last point deserves to be emphasized, for it is habitual to praise a champion for his overweening confidence, his imperturbability. It is true that in time of stress it is necessary for the boxer to keep all his faculties efficient, but the state of mind corresponding is very different from that of insensibility, or what is sometimes called in current literature, lack of imagination. One of the most famous boxers, Corbett, has said that the best boxers are highly nervous at the beginning of a contest, though this is quite consistent with holding that magazine of nervous force under powerful control.

The boxer who has been avoiding the onslaught of an aggressive and perhaps more powerful opponent suddenly sees a chance of delivering a telling blow; the effect of the

blow, and also the safety of the boxer, depends on the promptness with which he decides and the energy with which he carries out his decision. A courageous boxer may succeed where another may fail.

This review, brief though it has been, may have helped to give a notion of courage different from that which seems popular.

When we examine more closely we find that the sensitiveness of the boxer is part of his magazine of the qualities useful for fighting. A blow is aimed at his head. He sees the blow coming, swift though it be, and he avoids it by a sudden but powerful movement of the muscles, mainly of the neck. In a short time a great variety of nervous reactions have taken place, and they have required a high state of efficiency of a very complex mechanism. The eyesight must be good. From the retina a nervous impulse is conveyed to the brain. This is related in association with a complex system of stored impressions, and out of this reference appears, as a resultant, judgment, and then a directive to action. That directive is conducted along various strands of efferent nerves, carrying motor impulses to an associated set of muscles, which must act in well balanced co-ordination. If the counter-blow be immediately delivered, then there has been necessary the receipt of a new set of afferent, or sensory impulses, giving a good picture of the actual situation, and related at once to stored impressions enabling the mind to form a judgment not only of the actual situation, but of the expected movement of the antagonist.

Then a decision must be taken at once, and this decision involves many considerants and delicate adjustments, as, for instance, whether the blow shall be delivered with full force, with the danger of exposing the boxer should it be ineffective, or whether it should be delivered with considerable force, but yet in such a manner as to prepare for a new situation.

I do not mean that the boxer reasons in this way. Certainly he does not speak in these terms, but the processes are necessary, really in far greater detail and complexity than I have described, even though these processes be in part automatic.

The proper carrying out of these processes involves again

a high state of efficiency of the organism, and since the time employed in the reactions is of importance, there is further implied a considerable preparatory training leading to a liveliness and sensitiveness of the whole nervous system. Given the required physical condition, with the implication of previous training and familiarity with the means of offence and defence, and favourable general circumstances, then courage will be present. Depress any of these beneficial conditions and courage will be diminished.

It is true that there are men, and nations, in whom both the physical aptitude and the quality of courage stand at a higher level than others; but their superiority depends on matters involved in heredity and in race. These again depend eventually on mode of life, exercise, nutrition, health, experiences, and other factors; but since the formation of stabilized races requires a vast amount of time, we may use the term race to cover certain acquired results.

Finally, summing up, we say that courage is not a certain definite possession of the individual, but is a quality—of a somewhat elusive and plastic kind—varying from time to time and in regard to different circumstances, depending on disposition derived from race and personal heredity, but capable of considerable development in the individual, and on his training, his general health and his physical disposition at the moment.

Courage comes under the general principle of energy, for the criterion that we have seen, in all the cases examined, is that of the most effective display of energy.

Prudence

Prudence is generally taken as the obverse of courage, and it is usually regarded as a less magnificent but safer attribute. Neither of these judgments is necessarily, or at all times, true.

The classic example of prudence is Fabius Cunctator, the skilful Roman general who opposed Hannibal. It is probable that almost any other form of tactics and strategy than those he adopted would have uncovered Rome to the enemy, and so Fabius gave a great prestige to the virtue of prudence which he possessed to a high degree.

That virtue has often been made the refuge of timid or

incapable minds who have covered their own deficiencies under this great term. In history, and in my own experience, I have seen disasters of the greatest magnitude which have been the direct result not of true prudence, but of the meaner forms of the negative virtues which have assumed the name.

Properly speaking, prudence no less than courage should be the servitors of energy. The test of the value of both should be found in the actual accomplishment of the work in which these qualities have been manifested.

If, for example, a commander is sustaining a siege, and if it be materially impossible that aid can come to him within a certain time, and if he cannot successfully oppose in an open fight the forces that are investing his stronghold, then prudence would dictate to him to make an inventory of the available resources of the place, particularly of foodstuffs, and to strengthen as far as he could all his material defences, and not to waste either food or munitions or men in useless attacks.

It would not be courageous, but simply foolish, to adopt an opposite procedure, and from this example we see that there is no incompatibility between courage and prudence. Both are forms in which energy finds, according to circumstances, its best manifestations.

I have been told by an Arctic explorer that if when on an expedition he began to feel the approach of fatigue, there was a tendency to become alarmed and to push on rapidly to reach the base. He said that in his experience he found it better to ease up a little and to avoid all unnecessary distress by hasting. Here was a fine example of prudence.

If a boxer be inferior in strength to another, but rather superior in staying power and skill, it would not show a lack of courage but rather a commendable prudence to avoid close fighting until he had tired the other by long exertion, and so improved the chances in his favour.

Or if a man be disposed to enter into any business whatever to embark his fortune and to stake his career upon it, it would be commendable, as a matter of prudence, to make himself acquainted with the conditions that he would have to face.

All these examples of prudence that seem so simple in the

statement are reversed in the actual world of affairs in a great proportion of cases. On the other hand, prudence may be consistent with the greatest energy and rapidity of action, and indeed inconsistent with any other course.

When Nelson found the French fleet at Trafalgar it was the height of prudence on his part to sail in to attack and destroy it, for in this way he removed the danger of the invasion of England.

Or in the slower movements of politics, if a statesman see a rival nation making extensive preparations for war which must eventually be directed against his own country, and if his own people are unprepared and the issue of the war will possibly be fatal to their independent existence, then it is not prudence that induces him to gloss over the facts and lull his country into a false security.

Napoleon Bonaparte gave his opinion that Wellington as a general erred by excess of prudence. On the other hand, Wellington's remarkable consistency of success may stand as a powerful answer on his behalf. Napoleon himself possessed in fine balance the qualities of prudence and courage, regarding them rightly as two sides of the one medal. Napoleon III, on the other hand, erred by excessive caution in the use of his reserve troops. He reserved them at times till the battle was lost, whereas their proper use was to decide the issue when the crisis of the battle had arisen.

In the South African War Joubert had the opportunity for a brief time of winning. Success, however, would have depended on using the whole of his resources at once with the utmost energy and determination, and in such a manner that loss would have meant exposing the defencelessness of his country. He failed, either by want of intellect or of temperament, to rise to the occasion. He missed the chance of victory, but he did not ward off defeat.

That is the point that the over-prudent man leaves out of account. He misses the decisive moment, but he makes the ultimate result only the more unfavourable.

When the history of the world-war is written it will be found that on several occasions it was in all probability within the power of the Germans to have determined the conflict in their favour, if they had been led by a man of

great military genius and of sufficient authority to realize his plans. When they had reached almost to the gates of Paris they hesitated between two plans. The excess of prudence thus manifested cost them victory.

The British expedition to Gallipoli depended for its success on swift and resolute action. At one period this was possible, and had the expedition been successful the whole course of the war would have been changed, and hundreds of thousands of lives saved. But every mistake of over-prudence was made. Time was wasted. Secrecy was lost. The expedition was finally launched under unfavourable conditions, and the result was failure. For months the prudent men of the Cabinet were debating, hesitating, shrinking from possible disaster, and rendering it inevitable by their hesitations.

From these examples we see that prudence, like courage, may be measured by its effectiveness in regard to energy.

Moderation

Moderation is a quality of the same order as prudence, and equally liable to be misconstrued and abused.

Aristotle made great use of the virtue of moderation, and since his time it has been held in high favour by the moralists. I accept what Aristotle has said of the "golden mean" when referring, as he desired, to qualities of temperament, but there is a manner of applying the term to questions that admit of a scientific determination, and there moderation may or may not be indicated.

Moderation is allied to compromise, and these terms have been so much praised, especially in assemblies such as the House of Commons, that many persons find safety in adopting moderate opinions without thinking, and mediocrity has become appreciated to an immoderate degree. The praise of moderation has interpenetrated into our proverbial sayings, partly because the vogue of a proverbial saying depends upon its acceptance by persons constituted mentally and morally within average limits. Thus, for instance, we have an expression in such phrases as: "Slow and sure"; "Leave well alone."

These sayings are consolatory to the majority of mankind, but they do not express always the summit of wisdom.

It is not the slow greyhound that is more sure to catch the hare. It is not the slow steamer that is most sure to arrive at its destination in the most convenient time. It is not the bullet with slow initial velocity that is most sure to hit the target. It is not the man of slow wit who is the most likely to form a good judgment.

The advice to leave well alone is serviceable amongst those who do not care to accept responsibility, and who are content with mediocre positions, but it is immoral if applied, as principles of ethics should be, universally. If we had been content to let well alone we should have made no improvement in any art or science; we would be using the distaff or the spinning wheel to this day, and railways or telegraphs would be unknown.

We must respect the moderate man, for he is the representative of the majority; we must not respect him too highly, for he is continually endeavouring to reduce to his own level the only works that imply the advancement and the glory of the race. The moderate man, the man of compromise, who always strikes the golden mean without hearing the arguments at all, is a fool unless he seek some profit for his apparent balance of judgment, and the man who invariably compromises on that score is dishonest.

For it may happen that the truth does not lie between two extremes. Thus the old theologians, and the politicians who had to keep within popular prejudices, believed the earth to be flat; Eratosthenes believed it to be round. This was an extreme view, for the Greek philosopher was almost alone in holding it. Yet it was right, and the man of compromise who would say that the earth was shaped like a sausage was not a model of wisdom.

Newton said that all particles of matter attracted all others with a force that varied as the inverse squares of the distances. There had been attempts, previous to Newton, to discover the law, and some philosophers had endeavoured to establish a system on the basis of an attraction varying inversely as the distance. The man of compromise appears on the scene and tries to reconcile the two theories; he asserts that the law of attraction is that the force varies in a manner between that of the inverse of the distance and the square of the inverse of the distance.

This looks absurd in science, partly because in that case the moderate man must express himself with some approach to exactitude and because the question can sometimes be put to the test of experiment. In religion and in politics it is otherwise, and in those realms the moderate man is especially content with himself.

The man of extremes may drive a wedge through the enemies' lines, though at a loss of one hundred and fifty thousand men; the man of the other extreme may be content to sacrifice the points he was holding rather than risk a battle. The moderate man forms no decision, and finally loses half a million of men for no result.

Two schools arise, one for strengthening the Western front, the other for finding a chance of disrupting the plans of the enemy at Constantinople. The moderate man decides to send an ineffective force to Salonika.

Two fleets are in presence. The extremist-man wishes to destroy the enemy in the style of Nelson, even though with the loss of some vessels; another extremist wishes to sheer off so as to preserve the naval force intact. The moderate man loses a moderate number of vessels and then sheers off.

A kind of speech that I have often listened to in the House of Commons, where compromise is an open sesame to the hearts of members, might be thus rendered: The measure before the House is one of the most mischievous I have ever known, it is without precedent, it is un-English, it will ruin the nation, break up the Empire, loosen the marriage tie, prepare the way for revolution, anarchy, and bloodshed . . . but if it be adopted by the Party to which I have the honour to belong, then I assure you that it will have no more faithful supporter, no more devoted advocate, than myself.

A speech of that sort is seldom received otherwise in well-ordered assemblies than with approval, and with an underlying appreciation of the speaker as a practical man. Accordingly, as I have seen in actual experience, the quality of mind here manifested becomes a recommendation to office.

Moderation and compromise are certainly of real value in cases where no especial principle is involved but only a clash of material interest, where both sides to a dispute insist upon looking at it entirely from a personal and selfish point of view.

The influence of moderation is also beneficially felt in cases where men, either in large or small assemblies, are liable to be swept away in gusts of sentiment, whether of patriotism or of revenge, of hopes or of fears, and to advocate acts which in their cooler judgment they would regret.

In these cases, however, other factors beyond those of a mechanical formula of moderation come into effect—the sense of justice, the capacity of forming a fair estimate of the consequences of certain actions, political for example, and the judgment that some acquire, if ever, only from experience, but others from reflection.

In matters of this kind the moderate man, with his foresight, his calm judgment, his manner of deliberation, his reasonable argument and weighty utterance, is a figure that acquires respect. But for the man who is moderate only from calculation, or as a mask to his own lack of intelligence or ulterior personal motives, for the man of whom it might be said as of Cicero that his excess is moderation, I have—for I have seen him at work—a deep distrust.

Temperance

Allied to prudence and moderation, though not necessarily associated, is temperance.

The discussion of this virtue may also take place under that of energy, for the object of temperance is to render the person efficient in his work, especially when a call may be made upon his faculties at a sudden crisis.

If, for example, the indulgence in alcohol made a man healthy, wealthy and wise, there would be no opposition to its use, except in the case of those whom the very word alcohol fills with repulsion.

Our indulgence in the pleasures of the table brings its own punishment, not only in the immediate disability, as, for example that of drunkards, but in a whole train of consequences—gout, Bright's disease, gastritis, and heart disease, among others—and in the general degeneration of the tissues, which leave the individual less resistant to any form of malady. These lessons should be a sufficient deterrent, but there are also to be considered the incidental detriments to others, which in extreme cases involve misery and ruin.

Eating and drinking should be regarded not as ends of existence or rewards for particular exertions, but as necessary—to use a phrase I once remarked in a life of Julius Cæsar—for “the refectation of the body.”

This refectation does not imply an unduly severe and formal attitude to diet, for part of the process of digestion depends upon appetite and the appreciation of good cheer. Then it seems to be as little meritorious in the eyes of nature to be ascetic as to be gluttonous. The ascetic doctrine arises from the old suggestion met with in Plato, who probably derived it from the East, and which prevails amongst fakirs of to-day, that the body is an unworthy vessel for the soul, and that it is meritorious to treat it badly.

Yet an astronomer who kept his glasses dirty would hardly be praised for that fact, nor a mechanician who purposely used the wrong materials for his motor and neglected to clean his machine. The consideration of temperance is therefore seen to fall under the general heading of the principle of energy.

Temperance, it is evident, should be practised, but easily and temperately, according to our ethical system.

Humility

Amongst the tame virtues seized upon by popular teachers with predilection there is none with which the moralist seems more safe than with humility. Here, as in the case of so many of these negative virtues, it is rather of the things that are recommended to others than chosen for personal use.

Humility, therefore, forms a part of all official religions, for the framers of those codes of ethics that support authority are less concerned with individual development or with high national ideals than with the means of securing obedience to the masters of the hour. The praise of humility is of the same nature as that bestowed by Cæsar on fat men; not that he cultivated fatness in himself, for his energy did not permit of the accumulation of adipose tissue, but because fatness was rather the evidence of a lazy disposition, peacefulness, content.

Humility is considered to be the antithesis of the qualities of arrogance or of those that savour of egotism, or vanity,

or self-assertion. Certainly no one is less sympathetic than the man who has an overweening sense of his own importance, and who is always vaunting his own excellence and setting his own qualities on a height which is not justified; but the man of humility reaches his favourite state of mind through warped estimations of things and a mawkish kind of self-consciousness.

If a man judge his own work by the same standards that he applies to others, then, if he have any merit, he must be aware of that fact. If, further, he has accomplished good work in any domain where the standards are not merely those of personal taste, but where demonstration enters, then he ought to have a fair estimate of the value of his achievement.

When Pythagoras solved the problem of the right-angled triangle he sacrificed a hecatomb of oxen—in this case of milk and honey—in honour of the event. Did he therein display immodesty? Surely not! Had another accomplished such a work, Pythagoras would have appreciated it; and then, because it had been given to himself to add a glory to the human race, should he hide his light under a bushel and treat the wonderful feat as of no value? In that case we should have seen a morbid vanity peeping out from the folds of the dress of humility.

When Sir Humphry Davy separated potassium from moist potash, and so found a new element, he danced round the laboratory with the spirit of a Bacchante intoxicated with the subtlest wine. That sort of feeling, however, seems to me natural, and not deserving of frowns.

In an athletic contest one may have regard to the feelings of the beaten side, and in that case it may be commendable to restrain one's exultation, but apart from such a case, or from the good motive that here enters, there is often an element of perverted vanity in modesty. The over-modest person wishes to be pursued, to be discovered, and to be brought against his will into the light.

Shakespeare, it is said, took no pains to collect his plays, and he is praised by his admirers for that trait of character. But they admire these plays, and they would think it an act of vandalism of the most abominable kind were some tyrant to destroy all the copies of Shakespeare's works.

Why then should it have been a merit in any man to be indifferent to such a catastrophe? And if the reason be because they were his own works, we could see at once the false importance attached to self.

There is also something wrong in the eulogy of humility for this reason. If it be a virtue used only as a subterfuge to gain ulterior ends, then these ends supply the real motive power. If, however, humility be a virtue in itself, why promise as a reward for its exercise some future enjoyment? Why not place the over-modest man in such a situation that he can find every means of indulging his humility? The position that arises out of a true system of ethics is not that of humility, but something more natural, easier, more truthful, and more sympathetic.

Sacrifice

Most of the popular religions present us with ethical codes that are made up almost entirely of negations, and even in these negations they gain their effect by holding up a scheme of conduct that strains the true balance of nature. That a scheme of conduct can be built up by a list of forbidden actions already implies a something in action which tends to run athwart these limits, and that something must be impelled or led by positive purposes. It is these purposes then that are of prime importance. The commandments are rather the rules of the game of life which indicate the limits of digression, but not even in a chariot race or a football match do those rules which indicate penalties give the impression of the meaning, the interest, or the fascination of the sport. So it must be in the effort of life.

The insistence on a scheme of things forbidden has influenced all those philosophers, such as Kant, whose ethics have been derived from and coloured by the old controversies of theology. In Carlyle's "Sartor Resartus," which has been derived from Kant through Fichte, and others of the German philosophers, we find *Entsagen* (Renunciation) held up, not as the tragedy of some unrequited effort after good, but as an end of philosophy and something desirable in itself. This brings us to sheer absurdity, from which the only escape is to apply the principle of Renunciation to this delusive but ostensibly fascinating doctrine of *Entsagen* itself.

In the same category I would class all the ethical systems that make a high virtue of sacrifice for the sake of sacrifice, and at length strain this virtue to afford a salvation for others whose virtue is a fervent desire to profit by the sacrifice of others. Historically the doctrine of sacrifice may be traced to the practice of those bloody rites which in the religion of Baal have been held up to shock the conscience of modern man. Whether seen in the car of the Jugger-naut, or in the terrible ceremonies of African savages, these sacrifices have their origin in the conception of a powerful and cruel deity who can only be propitiated by offerings that recognize his power and seek to glut his cruelty.

It may be said that the self-sacrifice of the hero who remains at his post is inspiring, as in the beautiful and pathetic figures of Casabianca and Jack Cornwell. Yes, but in none of these cases is the object of the action, still less of the life, that of self-sacrifice. The object is to maintain the ship, and the object of the effort so indicated is to win the battle, and the object of winning the battle is to safeguard the country. It is true that in pursuing the question in this way we may eventually arrive at some object, or policy, which is not ethically good or great—in fact, when two nations are in conflict we must certainly find an ethical deficiency in one of them if not in both—but the secondary motives which become predominant may be great enough to hide the eventual motive from which they ostensibly take their source.

It will happen often that in the pursuance of some good object the occasion will arise when the agent must summon up all his fortitude to resist opposing forces, and in the course of this effort he may meet with death. That case is not parallel to one of voluntary self-sacrifice for the purpose of sacrifice.

Moreover, though the value of an heroic action may not be lost, as for instance by virtue of the inspiration of example, yet we must be careful here not to confuse such influence with that of a boon conferred by the loss of another.

If the hero inspires his comrades he makes them, within the measure of their capacity, ready to emulate his deeds; but there would be something shocking in the notion that his action, by putting up a big amount on the credit side,

would entitle his comrades to escape their duty and to pay their fair scot of peril sharing, not by realities but by the glorification of one who had paid for them and absolved them.

It may be accepted then that the negative virtues, or the commands of forbiddance, can never serve to build up a complete system of ethics; they imply, even though they do not expressly bring into evidence, some motives more powerful and of higher quality. It is upon these, therefore, that we should fasten our attention.

The negative manner of regarding the notion of conduct may be even the cause of great injustice. It is as if in a balance no heed were paid to the credit account, but only to the debit. Hence a system of little output, but of small expense, would seem superior to one in which the business was on a magnificent scale, but in which occasional severe losses were incurred. A man's conduct, and the purport of his life, should be judged by his total achievement, and not by an insistence on some fault imputed to him without consideration of the circumstances that may have modified its aspect.

Tolerance

That tolerance should be dignified by the title of a virtue speaks ill for the community in which it is so esteemed, for that society is but a degree better than one in which intolerance is practised. Tolerance has reference principally to matters of opinion, or the practise of some ritual or etiquette, for if it touch upon acts which are hurtful in a material way other terms come into use. The immunity of a footpad, for example, is not a matter of tolerance, but of inefficiency of administration; but the freedom, say, of a Catholic in a Protestant country, or of a Protestant amid Catholics, is spoken of as a matter of tolerance, although in an enlightened community it should be regarded as a matter of common sense and justice.

In order to discuss the matter I will take rather a wider range and endeavour to elucidate the real importance of this quality.

We have seen that evil may follow intolerance even in cases where some offence lay to the debit side.

The case is worse when the fault imputed is not really an offence when judged by a high standard of ethics, but merely an infraction of some ordinance of the accusers. When Huss was burned and Galileo imprisoned, it was not for crimes as we now understand the term, but for acts which honoured their name and heiped the progress of the human race. That will now be readily agreed, but as it is not possible to inflict severe punishments upon individuals in a well-organized society without justifiable motive, it is evident that these matters were regarded by their contemporaries in a very different light. In the records of the processes against these men—and they are taken simply as types—the expressions of moral indignation, the feeling of over-strained patience, the appeal to justice, the fervid prayers for right guidance, and the sense of duty are exhibited on the part of the accusers, not of the accused, and were so accepted by the populace.

Again we all agree, and plume ourselves on having developed to a higher plane of rectitude and of intelligence. I say, however, and I could show it in a thousand instances of various details, that we are in our time immersed in the same kind of atmosphere. The names, by the appeal to which we condemn, have changed and the actual punishments are not so barbarous as of old, but the spirit of intolerance is not less real that it has become more sedate and more impenetrable.

The whole system on which the government of civilized countries is founded, the force of established opinion, whether that of a state-aided religion or that which apparently more free is supported finally by something equivalent, the whole ethics of a people may even in our day be turned against the expression of certain opinions which bear the banners of Truth and Liberty.

But it is said, the expression of these opinions may run counter to definite laws or to traditional beliefs.

That is what was said with slight variation of terms by the men who burned Huss. He outraged the sense of all that they regarded as holy. Galileo added to this offence by introducing notions that seemed preposterous.

What then is the standard? I say, never a secondary standard where an appeal to truth is obtainable.

In any case of doubt we should exercise if not intelligence, at least toleration. We have seen the gradual progress of our knowledge even of the exterior form of the earth, and we are beginning to form a few clear notions of those inner harmonies which we range under laws of nature. At each stage of our development we have discarded some false ideas and it is by virtue of that ascent in intelligence that we deplore the intolerance of the past and resent that of our neighbours.

To each individual, however, who sets forth his own notions, or even his own faith, as a standard, this conscience must be present: Countless æons have been required to produce thinking man, and since the dawn of his intelligence he has risen in the scale, winning often with extraordinary labour and sometimes by the gift of some wondrous inspiration new possessions for the human race; that process has culminated in me; what I believe is true; to add or to subtract from the product of my thought, in certain matters, is a crime for which few punishments are too severe; human evolution, having reached its apex in my intelligence, has now come to rest.

The men who hold these beliefs, tacitly maintained if not exactly thus pronounced, are not those examples whose virtues or whose intelligence impress themselves upon the general admiration of mankind; they are generally ignorant or falsely educated, and they are almost always destitute of any merit of having contributed anything to civilization except the defence of their class and order.

We should be admonished by history to be chary of intolerance in matters of creeds, but the spirit of intolerance does not stop there. There is a disposition on the part of men to cut and carve the world after their own ideas, to create a god according to their image, and to reduce, in the manner of Procrustes, every one to their own mental and moral size. An extreme example was the Sultan Omar who gave orders to destroy all books except the Koran, for these books either agreed with the Koran and were superfluous or they disagreed with it and were wicked.

Here is a high type of faith in action, but for such an example to be admirable we must be sure that the brain of Omar had comprehended the universe and that

the Koran had discoursed truly of all things fit to be known.

Without labouring this aspect of the question, I will say at once that in all our laws, institutions, social customs, we should trust far more than hitherto to the sane development of nature, and cease to try to direct her by putting her in splints and bandages of our own devising. If all the parts of an organism round out to full development, the health of that organism will be better assured than if, with imperfect knowledge, we try to cramp and stifle any of the functions.

Let us make this a little more concrete by applying a severe test, say the growth of luxury in a community. The popular moralists tell us to go back to the simple life, but that counsel is not easy to follow; we cannot be simple, in a complex community, merely by wishing to dispense with wealth and luxury. Good, honest, unadulterated food, and serviceable raiment, and healthful conditions are not at the command of the poor.

Moreover, once a community enters into the path of growth and development the entrance of luxury is inevitable; and we must accept that with toleration at least with regard to others, however simply we ourselves may prefer to live. Take the fabrication of cloths. There was an epoch when the garments that we now look upon as indispensable would have been regarded as high luxuries. But at what stage must the improvement of fabrication stop? Remembering that intolerance if pursued to its logical conclusion means forcible interdiction, shall we say that it is laudable to fabricate badly a coarse garment, but it is a crime to make a finer garment with higher skill? Here we come down to the condition not only of the person who enjoys the luxury, but to the consideration of the intelligence and the development of the powers of the workman. At what stage shall want of discrimination or indifference to the product cease to be faults and become virtues?

Or again with foods, our interdictions will lead us to like absurdities; that it is laudable to make coarse bread mixed with foreign and unnutritious substances, and a sign of decadence to exercise upon this important product that sort of developed skill and effort in improvement which in

another sphere produces high art. Shall the rude villager who puts up a shelter against the wind and rain be praised, and only blame reserved for the architect who makes use of a highly trained faculty to give us buildings which look imposing to our gaze and which form the delight of refined tastes? Shall bad music be laudable, but good music the work of the devil? Shall a street artist be rewarded, but a great idealistic painter be condemned to starvation?

To ask these questions is to answer them. I sum up this argument then by a plea for tolerance even in matters in which an individual mind may not find itself in accord. If in a great state every faculty reaches a high degree of development, the general intellectual resource, and the material power of the community, will be found enhanced. The remedy even for the invasion of luxury is not mere interdiction, but a stimulation to a higher and completer general development which aims at a harmony of greater scope.

There are indeed a thousand indirect ways in which a spirit of tolerance favours a state, but I will leave the matter there, only calling to mind finally the hideous nature of all intolerance which runs counter to our own.

Benevolence

On the opposite side to intolerance we find benevolence, which Shaftesbury and Hutcheson and a host of other moralists have made the principal pillar of their ethical edifices. The insufficiency of this view has been already pointed out, but the question may now be taken as to whether benevolence is in all its manifestations one of the factors of a true system.

Those who adopt the sentiments of benevolence, dissociated from all regard of circumstances, generally regard themselves as of superior morality, and they represent any contrary view as destructive of the finer feelings of affection, pity, and the desire of amelioration of the lot of others.

That is true, but there would be no need to conceive of any system of ethics at all if we could always be infallibly guided by our tender sentiments. But we have seen already in considering sacrifice and heroism that there are occasions when every faculty of the mind must be braced up to resist

giving way to impulses that in other circumstances give life its reward and pleasure. Every officer who commands a charge, every surgeon who performs an operation, recognizes that there are motives higher, in certain circumstances, than the facile and obvious sentiments of benevolence. It may be said that there should be no circumstances in which a charge of soldiers is allowable, but that again is one of those counsels of perfection which are not at present universally applicable.

But quite apart from such cases there are others inevitable in the nature of things where the tendency to unreflecting benevolence must be resisted.

The natural play of reproduction would soon produce a disastrous state of affairs on earth, for reproduction proceeds by a rate of multiplication while the means of sustenance, though containing great unexplored and unused tracts and though depreciated by inefficient methods, are yet limited. Therefore whether by agencies within our control or otherwise, some restriction must necessarily be imposed on the population. This reduces us to consider, in as far as we intervene at all, certain grounds of choice.

Now the eugenicists have furnished us with statistics that make our knowledge more precise, though without these the main facts are evident, of certain kinds of families—lunatics, diseased and degenerate people generally—who are not deficient in powers of reproduction but whose offspring are destined to lower, physically and morally, the average level of humanity.

Most of the moralists, and especially those whose self-interest constrains them to advocate certain opinions, refuse to look such facts in the face, and they confuse the issue by creating prejudices against those who desire to see the way out. In this attitude the moralists are guilty of that fundamental immorality which consists in the perversion of truth.

Without insisting on this point further, we may find some of the advocates of benevolence who will have honestly endeavoured to adapt their principles. They will not favour drunken, lunatic or degenerate families to multiply at the expense of the saner and healthier population, though they would treat with care and even indulgence those of them who are actually living and whom they regard as afflicted.

This position, however, is within the compass of the eugenists, and so we see that benevolence finds it necessary to take into account other factors that refer to justice and to the general efficiency of the race. In this way referring now to deep bases, we have been led on this narrow line of argument to associate Truth and Energy with Sympathy as fundamental principles.

Pleasure

The sense of sacrifice, abnegation, *Entsagen*, and the cultivation of the negative virtues correspond to a certain view of the ethical world of which the original source is the propitiation of a maleficent and jealous deity; the next step is the cultivation of the faculties and practices which tend to ensure happiness for others; the third step, which is really the most direct and natural, is the desire of pleasure or happiness for oneself.

The philosophy of pleasure was preached by Epicurus, possibly as a reaction against the extreme doctrines of the Stoics, just as the practice of the Stoics arose in part from the contempt that men of strong character have always felt for a life of self-indulgence.

In the development of English philosophy the doctrines of Hutcheson, by insisting on the advantages of benevolence, have through the principles of utilitarianism influenced first Bentham, then the Mills, and, finally, Herbert Spencer.

All of them adopted pleasure as a standard, though as they were, each in turn, of a rather dry ascetic cast of mind, their notions of pleasure were not especially attractive.

John Stuart Mill said that the highest pleasure was to be found in intellectual enjoyments; and he denounces sensual pleasures. In so doing I hardly think that he is either fair or philosophical. When pleasure is taken as a standard it is pedantic and intolerant to prescribe to others the form and quality of their pleasure.

His dictum as to the relative values of pleasures has no general authority, for Mill by his constitution and his training, and by virtue of principles early inculcated, was cut off from worlds of interests and emotions which go far to make up the attractive forces that many people find in life. Even

his intellectual regards have a peculiar sense of restriction and lack of vitality.

Another individual at the opposite side of the scale of the Epicureans may vaunt the deep strength of the sensual pleasures and sincerely reject Mill's academic delights. If pleasure be made the standard, on what ground shall one or other of these tendencies be made predominant?

The verdict would be of doubtful value even of one who had experienced with full zest both series of pleasures, for the enjoyment depends on elusive circumstances of time and place, and the same man may leave one for the other, and then return to his abandoned love.

Lest there should be chance of misunderstanding I say definitely here that I reject the standard of pleasure. Yet again, and although my soul abhors the little gods of the pleasure-hunters with their piggish appetites and their snuffling little enjoyments, yet I am not in the least persuaded that intellectual pleasures, as pleasures, are more powerful than those of sensual origin, especially when both are found in normal exercise.

The necessity of the maintenance of life, without which refinements of ethical systems would have no value, have brought it about that the great primordial instincts of the satisfaction of physical needs and of reproduction have the accompaniment of profound pleasures which reverberate through the organism, and which have a deep poetry of their own.

On the other hand, it is difficult at any one point, and apart from results of knowledge and command which are eventually given, to appreciate the peculiar pleasure of intellectual work even at its highest. Ampère, who was one of the most highly endowed minds of the human race, and one whose work has been most fertile, said that he found ennui in work even as he found it in idleness.

If a measure of joy be given by the sympathy which the charm of possession arouses, the great observers of mankind have not given the palm to high and abstract thought. It is not the mathematician's study but Juliet's balcony that excites vivid emotions. Goethe when he wished to renew the emotional life of Faust did not propose to take him through a new course of metaphysics; he intro-

duced him to Gretchen. Here it may be remarked that the pleasures promised are not all sensual, but that they consist in a world of associated desires, emotions, impulses and aims.

But so it is, I think, in the main with the intellectual pleasures. From Pythagoras to Archimedes, to Davy, the great thinkers have often been overjoyed by their discoveries; but the immediate intellectual satisfaction has been immersed in a feeling and a vision of the irradiation of the discovery in the society of men.

The poet in his dreams knows ecstasies which are high and pure, but they are also fleeting. His contact with the world is in this region remote and indirect. Weeks, months, even years elapse before he can publish his works, and the reception is hardly ever such as to recompense him. The appreciations, the joys, the rewards are given to popular books; and products of contemporary favour, which are popular on their sole literary merit, are rare. Keats and Shelley died unappreciated. Southey and Tupper enjoyed remarkable vogue.

It is in this relation to the cold facts that we must examine the thesis of the superiority of intellectual delights; for however facile the tacit acceptance, few popular writers admit formally that the chief end of man is to produce mediocre literature. I do not seek to discourage work of high intellectual value, but I wish to discover the secret of its power and not to rely on promises to which experience gives the lie.

Before definitely entering upon the path of solution, however, I think it worth while to refer here to one or two of Herbert Spencer's conclusions. He adopts the standard of pleasure, and he writes at times as if in depreciation of intellectual power and energy. He is carried away by that deference to moderation which is also part of the Epicurean philosophy, and as there is contradiction here with his own example and the impulses which drive him forward, his writings in this instance are far from convincing. Asked to give an example of the fulfilment of a high ethical work he cites that of the mother suckling her child, because here is an act which gives pleasure to both.

But if we pursue this line of argument we would find

something ethically inferior in the mother who compelled her child to take some necessary medicine or who disciplined the child to give it a stronger character. Here we have a case which will illustrate the divergence between the pleasure philosophy and the view of ethics which this present work presents.

There is nothing that justifies us in selecting pleasure as the end of life, and when we cast our glances along the immense vistas of the past and see the gradual rise of man, and when we open our eyes to the visions of the future, and feel something like the stirring of new faculties within us in lifting our aspirations to the alluring future; then this search, as the object of life, of pleasure for pleasure is too mean and petty to satisfy the pleasure-seekers themselves.

Nevertheless the world is so ordained, and it is so of necessity, when we have regard to the development of man from inconscient, or little-conscious, organisms, that pleasure is a concomitant of the normal exercise of faculty.

Pleasure is therefore a guide rather than an end, and a guide that at times must be disregarded in view of a wider scope of ethics than that of immediate fulfilment of desires.

Duty

The case of the mother and the child becomes seen in its proper perspective. Here is an exercise of faculty, involving no great complexity of mental effort, which, because it is fundamental and natural, is accompanied by pleasure, and for a similar reason is accompanied by pleasure in the child. It is possible, however, that countless mothers should suckle countless babes without the ethical standard becoming thereby advanced. These actions spring less from any kind of calculation, or speculation, than from a desire to satisfy a want, under conditions also where the neglect to satisfy that want will produce pain.

Between these primordial wants and our highest motives lies an intermediate structure, often complex, of secondary motives; but we should not on that account lose contact with the primordial motives, nor seek to deprive them of their freshness and beauty. It was because of the loss of that contact that John Stuart Mill, as he relates in his autobiography, became extremely unhappy, even while pursuing

his intellectual aims in a manner that should have, were his own theory correct, stimulated and rewarded him with highest delights.

But we should not rest in the lower motives. It is evident that these do not form the end, but the base on which something higher rests. That higher we must seek to build; and here naturally come into play the intellectual faculties.

The natural exercise of these is accompanied by pleasure of a subtle and delicate but none the less real kind; but not in this case more than in the mother suckling the child is the search of pleasure the motive. The motive is the response to something within which is partly an allurements, and partly what Walt Whitman calls the "urge," and what the Germans call *Treib*—"drive"—of which the factors are found in the whole constitution, physical and mental, of the man.

Here now we can understand Ampère without depreciating him. The monotonous course of life, the incessant effort, the prolonged strain of work, caused "ennui," but Ampère worked none the less, and even in that work found a certain satisfaction, and in the results occasional high reward.

We have reached here a point where in view not only of the existence of the individual, but since ethics must be general, in regard to the welfare of the community and the advance of the race, we may speak less of pleasure than of "duty" as the standard.

Duty is a term that demands for its proper definition a consciousness of some motive or higher end; but in each path of effort the higher considerations will become more or less evident.

Here again to prevent misunderstanding I dissociate myself as determinedly from Kant's Categorical Imperative as formerly from the pleasure philosophy. There is a clear way between the two. Duty in the life of man implies no unnatural strain, and in the ordinary exercise of life it is accompanied by due rewards of pleasure and happiness.

The nearest approach here is to Aristotle, but with a shade of distinction, and perhaps with a medium of spirituality, if that term be properly understood. The view of conduct is again something between that of the Stoic and the Epicurean. The tolerance, the easy manners, the

diffusion of goodwill and pleasure, are valuable accompaniments of the mode of Epicurus; but these must not be mistaken for ends; and for the severer crises of life the sternness, the hardness, the unflinching heroic qualities of the Stoic must be called up from their reserves.

“A calm great Epicure, a Stoic without strain”; that is the model of the structure of a character.

These considerations must now be referred to that larger sweep of realities and thoughts which we have found in the discussion of the Ideal and of Purpose.

CHAPTER IV

CERTAIN MORAL PROBLEMS

Disease

HAVING laid down the main lines, and indicated modes of development, leading eventually to definite institutions, let us see our system in its application to delicate problems of ethics, where some deep fault seems to lie between theory and experience.

It will be noticed that in the manner in which the principles of ethics are here presented there is a far greater regard than usual to great objective conditions of the universe, to a world which is itself unconscious but none the less determinative in regard to our actions, and that there has been less appeal to our own favourite states of mind, attitudes of praise or blame, or the cultivation of self-righteous or disapproving feelings.

Thus, for instance, physical weakness, bad heredity, predisposition to certain diseases, which are often esteemed as rather endearing than otherwise, would be here regarded as definite defects, inevitably bringing their own peculiar disadvantage and disgrace, if that term be dis-associated from emotion and rendered independent of our own favourable or unfavourable sentiments.

The suggestion might be disconcerting to class together in the same category of deficient two young women, one of whom was predisposed to phthisis and the other wantonly vicious. It would be said at once that one was guilty of sin, while the other was only a victim of misfortune. The point that I wish to throw into relief, even at the risk of misapprehension, is that nature keeps no special record of sins as sins, in the metaphysical or theological sense, and that indeed a false and strained conception of sin has been the cause of much evil and misery and finally of sin in our social life.

I do not mean to say that the moral regard counts for nothing. Sentiment has its definite influence in averting, or in arresting, some course of degeneration, but when once that degeneration has taken place and is definite, it takes the same part in nature's tally whether we call it sin or misfortune.

Nature knows nothing—or perhaps we should say takes little heed of our social distinctions, or of our categories, often artificial—of praise or blame. The day has passed, even to our conception of things, when a Louis XIV could say seriously: "God thinks twice before He removes a man of my rank."

That saying of the great Sun-King sounds a little shocking to those who do not find it amusing, but it is not more so than the phrases and sentiments which we accept every day as orthodox and admirable. We hear, for instance, of the young woman, intelligent, beautiful, and virtuous, sympathetic—the type of the May-queen of the village—who has been smitten with consumption. In addition to her other virtues, she has the special grace, we learn, of being deeply religious and exact in her devotion; and if her religion happens to be the same as our own, to our sympathy and distress is added a touch of surprise. We are tempted to ask: Can this be so? And we add: Such a good girl!

When we look at the matter closely, we find that the sentiment is in a disguised form that of Louis XIV. Let us take another point of view which, however, brings us nearer to realities. Phthisis, we now know, is caused by a definite bacillus. Even that notion was in quite recent times not only difficult to entertain from the medical point of view, but was extraordinarily shocking to the religious sentiments of those who considered that the best way to combat disease was to rely upon some form of exorcism or enchantment. Nowadays, however, amongst most intelligent people though not all, it is considered that phthisis is caused by microbes. At once then we come to the brutal point that the microbe has no religion. When we realize that fact we are thrown into a different set of ideas, and we see how absurd, not merely from the scientific point of view but upon ethical standards, has been our previous reasoning. Once launched

upon the sea of these ideas we cannot turn back, and accepting the situation we endeavour to find new guides.

We strike very deeply when we recognize that there are not Protestant microbes and Catholic microbes, nor even Pagan nor Christian microbes. It is not quite true to say that they fall upon the just and the unjust, for they exercise discrimination, though the ground of their choice is not contained in our own somewhat sophisticated definitions.

There are certain soils on which they grow more readily than others. The reason is partly that they there find food that is suitable, and partly that their own immediate enemies, the phagocytes, are less active. Phagocytes are our own microscopical soldiers of defence against this invasion, but the health and activity of the phagocytes have only a remote connexion with official scales of excellence. It has happened in the history of the world that a soil favourable for the tubercle bacillus has been found occasionally in men of the highest intellectual and moral endowment.

Having reached thus far, the suggestion arises to inquire what are the causes that produce any particular temperament or, to use a term which was formerly more popular, diathesis. The diathesis is really determined by a thousand factors, including those of race, family, heredity, environment, mode of life, nutrition, personal habits, and state of health, which is in itself dependent upon a great variety of factors. The question of health is also one that involves peculiar features. Immunity from disease does not depend entirely upon the health in the ordinary sense, or on fine physical development or high vitality. Some races endowed with these qualities fall victims to the tubercle bacillus, while some dwellers in towns are relatively highly resistant. This resistance follows a certain deterioration of health produced by a previous attack, or depends on causes which have eliminated from the family or the race the individuals who were most likely to succumb.

The question therefore of the prevention of disease is already seen to be one of great complexity. Step by step in our analysis of causes we are led to study new factors, and new domains, and we are far away from the original simple conception from which we started. We see also how far afield in our education the study of this question has

brought us, and how much higher is the development of mind corresponding to the comprehension of all these forces compared to that of our former ignorance. We are led in this study to the same sort of considerations as when on a previous occasion we investigated the question of energy as exemplified by war.

Let us take an example of another time, amongst other people, for we are never so ready to see the absurdity of superstitions, or the evil of prejudices, as when they run counter to our own.

Prayer for Divine Intercession

When Philip II was King of Spain, he had a son, Don Carlos, who was endowed with all the virtues that make a hero of romance, except that these virtues were imputed rather than really possessed. Looked at from the biological side, he was a degenerate type whose faulty heredity had become accentuated by a bad education and false environment. On one occasion while still a youth, Don Carlos, who had already some of the bad traits of a more mature development, tried to seize a young girl of the people. She ran screaming down a side alley, and he in pursuing her fell and broke his skull. He was carried to the Royal Palace, and for days he remained in an unconscious condition. Prayers were offered for him, not only by his own family, but by the whole nation, or at any rate by as many of them as were "well-thinking people." Yet he did not recover.

At that time Vesalius, the great Belgian anatomist, happened to be in Spain on a visit, and though his practices, such as that of the study of anatomy and the questioning of nature, were looked upon askance by the Spanish authorities, yet in times of political exigency even science may be honoured. Vesalius was brought to the bedside of the unconscious boy, and he was asked whether he could do anything to help him. The king, and all the courtiers and all the ecclesiastical authorities, and all the "well-thinking people," beheld in the scene the great catastrophe of the son of the great Prince of Christendom struck somewhat too sharply by the Hand of God, and they had tried to conjure away the evil by propitiating the offended Deity. Vesalius saw a delicate boy suffering from a fracture of the skull

which had caused a portion of the bone to press on the brain. He judged that the best way of conjuring the evil was not by prayers to the Deity, but by lifting the bone. He therefore declared his confidence that he could be of assistance in the case.

The king and the train of ecclesiastical magnates agreed to allow him to try his plan, but they were not content with having failed on their own line of action. They therefore insisted that while he was performing the operation certain bones taken from the skeleton of a holy monk, who had died in the odour of sanctity, should repose upon the bed. Vesalius made no objection. He carried out the operation with all the skill he could command. It was successful.

One would like to add the sequel, such as we have even in the fairy tales, that the anatomist, hitherto treated with disdain if not with obstruction, received the recognition due to his art and that he lived happy ever afterwards. Life is, however, not a fairy tale. The truth is that when the operation was completed, and the boy began to show signs of returning life, the ecclesiastics raised pæans of praise to the bones of the holy monk, and when with equal truth and imprudence the assistant of Vesalius claimed some credit for the surgeon, they were both driven from the palace in ignominy. That was the beginning of, or perhaps rather the continuation of, the misfortunes of a great man who had dared to be enlightened beyond the superstitions and prejudices of his time. Vesalius, wandering as an exile, was shipwrecked on a deserted island, and he died of fatigue and privations.

That story dates from an age that seems in many ways remote from ours, but I say deliberately that it is paralleled in our own time, if not quite in the direct manner of the brutality, at least in the superstitions which are still living and artificially fostered by various public and private endowments.

When in our own day any illustrious personage falls ill, public prayers are offered for his recovery; that is to say, if his station in life be high enough. If now we recall the main lines of the activities of microbes, we should require to see in what way the intervention sought for takes place. If we brush aside all questions of detail and simply insist

that it does take place, then we come back to the position of Philip II and his ecclesiastical counsellors. If any difference separate us, it is simply that of the rightness or wrongness of the fine theological points which separate one Christian sect from another, together with the tacit assumption that the Divine Intervention will not operate to relieve pain and suffering, or yield to faith and devotion however intense, but is simply bestowed on a point of theological etiquette. I leave the matter there for those interested to proceed further, well knowing that nothing is more likely to bring upon one fierce denunciation than the simple operation of seeking truth and tracing out an argument to consequences consistent therewith.

It may be said that though prayers are now publicly offered, by order, for certain persons illustrious enough to receive this attention, yet all the resources of medicine are invoked as well. Yes, but that is exactly what Philip II did, and it was only after Vesalius was successful, and the boy was well, that he turned the vials of his wrath against him. The plea makes the position from an intellectual standpoint more ridiculous, even more outrageous than otherwise, for the prayer is to the one great God, and the assumption in such a case is that even in response to the most heartfelt cries of the chosen and faithful the Omnipotent cannot act without the aid of the bistoury or the pill of a sceptical doctor.

In India people die year by year from drinking the water of some holy well teeming with cholera bacilli. We look upon them not in admiration of their devotion, but rather in contempt of their besotted ignorance; but we never think of applying, with changes according to circumstances, the same standards to ourselves. But if the wretched Hindoo insisting on drinking the contaminated water describes us as materialists for offering contrary advice, we reject the term, but we bandy it about quite freely in dealing with those who run counter to our own superstitions.

Let us take a case where there has been a long drought in a country. National prayers are offered up for rain. The implication here is that by our intercession, in this particular manner, we can change the course of nature and suspend the operation of universal laws. How does the man of science regard this problem? If he took the com-

plete view of it, he would have recourse to the science of meteorology, with which, on account of its diversity and complexity, I have compared the study of ethics itself. He would see that the reason for rainfall or drought depended less on our state of mind than on causes operating naturally and inevitably in the physical world. Is he even a less helpful citizen on that account? No, for if he could have his way, he would take steps to prevent the evils that follow upon a drought. He would construct reservoirs, or he would conduct water from lakes even at a great distance, and he would have appropriate schemes for irrigation. It is possible, by the study of natural phenomena, that he might at length devise means of causing water to fall from the sky. One sees from this example alone how wonderfully more educative is the scientific system. Step by step, even by the very pressure of our necessities, we are forced to study nature; and the more we study nature the more we are inclined to recognize in her not a cruel step-dame, but a patient mother of our own, who answers all our questions invariably, and always consistently, and so leads us step by step to the knowledge of her secrets. She may require of us at times, even with severity, to cast away the incubus of tradition and false education that may have depreciated our intellect and warped our morals, but I would ask simply whether the loss of such a burden is an unendurable evil.

Contrast with this educative style that which would result if the limited conceptions, let us say of a Philip II, were to prevail. If the simple demand for intercession were to be successful in one case, why not, unless the Recording Angel consults an *Almanach de Gotha* in Heaven, in all? If in this way we can suspend the activities of the microbe, why not also suspend the operation of gravitation? So that when a child fell into the water, it should be saved at any rate if its rank were high enough,¹ not by swimming, but by grace.

What should we come to eventually? Why should not grace suffice for everything? But if this were so, we should cease to cultivate either our minds or our bodies. We should cease to lay store even by virtues which are of high moral

¹ This insistence is not mine, but always implied in the mind of well-thinking people.

quality, for all our difficulties would be resolved by faith. When the process were perfectly complete, the human race would have degenerated, even according to standards which all the world respects, until it became extinct in sheer decadence.

To carry out, however, to its full the other system: When swimming is necessary, the grace is swimming. If we are stranded in mid-Sahara, with just enough water and provisions to carry us to the nearest oasis, the grace is our intelligence and fortitude of mind and the strength of our bodies, developed by exercise assisted by temperance in living. Here, too, we come to another notion of praying, or the appeal for Divine Intercession. I do not say that that is not possible, I only maintain that it is a rudimentary or degraded notion to suppose that we are absolved by prayer from developing our own powers, or that we may be saved from the effect of natural laws by throwing ourselves into a state of mind that may be entirely futile. To pray genuinely is to work; the beauty of the prayer resides in the efficacy of the work. If the work be well conceived, and adequate to requirements, then when the work is completed the prayer will have been answered. The proper attitude of prayer is that of putting the shoulder to the wheel.

Sin

If we look to the operations of nature sanely, we find unerring justice. There is never in nature, wherever else it may arise, the impression of a Being gentle, meek and mild. But there is always in every place, at every moment of day or night, and in whatever way we may ask the question, the inevitable and infallible answer, always equal to the occasion, never inadequate, never in excess. There is the one great example of immanent Justice.

Now let us return to the conception which, when first presented, may have seemed either wantonly audacious or paradoxical. I bracketed together, though in a large category, the tendency to phthisis and the inclination to drink, while noting that one is called a misfortune and the other a fault.

In pursuance of my argument I say that it is inevitable in the world, in a large scope, that every fault is a mis-

fortune. Why is the tendency to phthisis a misfortune? Why is phthisis itself an evil? It is evidently an evil because it impairs energy and, finally, destroys life, causing during this process much pain and suffering, which again are measured in part by a loss of energy from the vital streams diverted into wrong channels.

Why now is drunkenness an evil? Because it leads to physical and mental deterioration. It may be said that it also leads to moral degradation, but when we inquire as to how the moral degradation comes in, we find that we are led back to the standards we have already employed. We associate our disapprobation of drunkenness with that of the cause of drunkenness—beer, or whisky, or other alcoholic liquors. If drinking of these liquors were followed by an excellent development of the body and mind, we should not place them in an evil category. But when they produce physical incapacity and mental deterioration, we treat addiction to these liquors as a vice. If the liquor were in some way forced upon us, independently of our own control or even desire, we should not be considered blameworthy; we should come under the category of the unfortunates.

Let us take another step, less obvious, and say: Suppose that under certain conditions these liquors had been rendered compulsory to us, but that by the exercise of intelligence, and will power, we could obviate the conditions under which we were forced to succumb, should we then be free from blame, and merely unfortunate? I think most of us would say: No.

Here, however, we come to a point where we see approaching each other two such evils as drunkenness and phthisis. Phthisis, be it remembered, eventually causes the loss of the mental faculties as well, if only by depriving us of life. If then we have a means of avoiding phthisis, either for the individual or for the community, the same kind of blame ought to rest upon those who encourage, or fail to counteract, the ravages of phthisis as upon those who encourage drunkenness.

I do not mean to say that the mental regard or the desire of the individual does not count for something, but it should be considered as counting only to the degree in which it helps in obviating or in combating the onslaughts

of either drunkenness on the one hand or phthisis on the other. When we investigate the conditions which are the ultimate causes of drunkenness, we get far away from the contemplation of the iniquity of the individual, and our analysis will lead us into considerations diverse and complex, such as those which arise when we study the sources of phthisis.

If we see two races, one degenerating on account of phthisis, which might be eliminated were it not for the faults of ignorance, or prejudice, or selfishness; and another falling a victim to drunkenness, which could be eliminated were it not for the ignorance, the prejudices, or the selfishness of the community; then nature, regarding both with equal eyes, sees both going down the scale, from causes which have similar origins and which march in parallel directions.

The current conception of sin becomes modified, I grant, by these considerations, and it is well that it should be so. I have endeavoured to strike deep down in the fermenting abysses of nature, and in this way we arrive at truths which are more fundamental and lessons which are more potent than those of ecclesiastical origin. It is a relic of the Middle Ages to regard sins as so many entities classified and labelled, and which may be possessed by some individuals and not by others, and where an account is kept in a sort of ecclesiastical court, and where the culprit is asked in terms that admit no equivocation: "Did you, or did you not, have in your possession such and such a sin at a given time and place? . . . Did you, or did you not, commit this offence against ecclesiastical law?"

I pass over the punishments bestowed for a wrong answer, for they are really too dreadful to contemplate. I turn now to nature's method. There, too, is a continual questioning and answer, even where the answer be not conscious. Our states of mind, our contentment, our hysterics, our anxieties, even our blessedness, all count for something, but not for all. Nature is weighing everything and to each act is apportioning, never in fury or in feebleness, but always with justice, its due consequence, and at every moment the tally is being made up accordingly.

Turn now to the conception from which we started—that the whole series of grave causes which have produced

phthisis should be outbalanced by a state of mind. That looks now inequitable, an example of bad moral book-keeping. We shall see this more clearly if we regard it from the contrary point of view. Suppose that we had acquired merit and so had chalked up a big score to our credit, would we care or would we be pleased if, by a temporary lapse into a wrong frame of mind, we not merely suffered for that wrong in itself, but had our honourable score wiped out at one fell swoop? No, in contrast we fall back for solace now upon the unerring justice of nature.¹

Wastage of Intellect

More difficult at one time it was to me to understand, even from the point of view of good works and economy, the waste of genius.

When a young man of "career" dies, and his friends point to his fine talents and the brilliant future that seemed opening up to him, one may sympathize in a human way with these friends; but looking on the career that has been closed and the talents that have been wasted these seem from the outside point of view ordinary in character. The matter is one of ambition, honourable enough, but moved by selfish considerations. There is nothing here with which to impeach nature.

But at first blush the case seems otherwise when some bright young mind is bent on work that is not selfish, and which might serve to illuminate the path of mortal man. Newton said of a young friend: "If Mr. Cotes had lived we might have known something."

Why did not Mr. Cotes live? Why was a mind developed

¹ Calderon, the great Spanish dramatist, would say, Yes. The great theme of his plays is that the most splendid virtues are but filthy rags if faith be absent, and that even a death-bed repentance and acceptance of the faith wipes out the most abominable crimes. Calderon with his dramatic genius gives this theme in all its beauty, and I feel inclined to thank him for his clear-cut expression of the dogma. To me he has reduced it to the absurd; it is even more ridiculous than wicked. Yet I prefer Calderon with his cold sculptural granite faith to the petty weaklings and humbugs who will neither hold the doctrine nor turn away from it, but who wilt to every shaft that reason drives home, and yet by lies and hypocrisies obscure the position and reassert their doctrines. Here is the deepest of immoralities.

in good work until it had reached a point where its efforts would bear valuable fruits, only then to be lost for ever?

Or why was Keats given a glimpse of the inner meaning of things such as was vouchsafed to no other—only to be withdrawn, to suffer miserably, to die in obscurity, and to live in memory misunderstood even by admiring friends, his message misconceived?

Or why did Bichat bring something of the sacred fire of inspiration, of imagination and enthusiasm, into the realm of physiology that to most would seem so dull and arid; why did he reach the point where every fresh step would mean a fresh discovery, only to go under, his work truncated, his illumination lost?

Why did the great genius of Fresnel perish so early? Why were his career and his untimely end paralleled by Hertz, whose work during his lifetime has left his name as a scientific term in wireless telegraphy, and whose posthumous book on mechanics makes us see to what great ends his subtle and powerful mind was reaching?

Why did that most astonishing soul of all, Evariste Galois, burn so brightly, so briefly, leaving his mathematics, into which he had seen more deeply than all others, a dream?

To all these questions the answer is now determinate and even consolatory. Nature is far more varied, and deep, and great than that of any of the minds that seek to interpret her; and the constitution of man himself has been built up through ages so long and from so many myriad factors that we cannot imprison that life even in the concentrated effort of genius.

In stimulating that genius there has been neglect of other faculties necessary to the development of man, and the individual has paid the toll of a sin against nature, conscious or unconscious.

Cotes was of a delicate constitution, rendered even more tender by a spirit unbraced to the rough world. If mathematics were to be a sufficient prophylactic against disease, the understanding of nature would be more complicated and less satisfactory than now.

Hertz died of tuberculosis, and if we have found that the bacillus knows nothing of religion, it is also unacquainted

with science. Fresnel and Bichat died from the effects of overstrain in their fervid devotion to science. Galois was killed in a duel. It was a tragic happening, full of poignant pathos, but, again, would not the world be still more difficult if the path of projectiles and finally the law of gravitation were liable to be changed by such forces as the power of high speculation?

But here is another still more difficult problem: How is it that in the moral world when we have struck into the right path our development may become hindered? How is it that so many obstacles, baffling obstructions and difficulties, and cruel circumstances fling us back into inferior lines, and cause a retrogression in our ethical values? Truth is our only guide, we say; why is it that because of truth we are so often thrown into the shallows and the mean quarters of life so that we starve in our mental growth and finally even lose the force of truth? Why is it that of two men, one of whom has no principles, no regard for truth, no great aim except personal ambition, and no scruple as to the means of success; another walking "ever in my great Taskmaster's eye," reverent of truth, tenacious of principle, and lifting his mind to high motives; how is it, I ask, that the first of these is the type of man who reaches to power in the State, and by wielding power finds the opportunity of doing considerable moral good, while the other is so often wasted? To whom or to what are we to render the account?

Milton in his "Samson Agonistes" has a striking passage, not less arresting because he speaks with the bitterness of experience, where he describes the fate of misery that has been meted out to so many of the great ones of earth. The poets are familiar with sorrow, and Wordsworth asks why it is so difficult "to keep the heights the soul is competent to gain?"

Ah, here perhaps we have a little light as to the solution. For what Wordsworth and his school would call the heights, especially in his regenerated days when his poetry made obeisance to the inferior things of mere pomp, perhaps those heights to others would seem depths. That is a question of moods, and of the relative values to be placed on them.

We have no right to constrain nature to our values, for unless we have derived them from some deep sources and by

true reasoning they are conventional and, when we get a little away from the main broad lines, sophisticated and false.

Nature is always right. If a man follow virtue all his life, and find no material reward, it does not follow that he has missed his way. That phrase which has come down to us from old and which once I thought of as irony: "Virtue is its own reward," I now accept without after-thought, simply, naturally.

If we have been praising virtue for a concealed motive, then it is that motive that is the essential, and we should be judged by our service to such motive. If we have had no other motive than virtue, then we become rewarded. It is useless for us to cast our looks of envy upon the careers of men who are called successful, for if we have been true we find no need for envy, but rather pity, for they have not been true even to themselves. They have been led by the motives of others.

Pain

There is only one other point that remains. Apart from the metaphysical conceptions of sin, suffering, simple direct human suffering, exists. Why?

In the first place when we reach the normal view of a true mode of ethics and a sane state of society, involving of course good health for the individual and the community, there will be comparatively little physical suffering, and far less psychical suffering than now. In one of its aspects pain is a warning, and since so few of us are inclined to accept advice in matters where physical health and inclination conflict, the sharp command of pain is at times salutary.

Then again I do not know that we should escape or wish to escape that strain which is short of actual painful suffering.

When an engineer builds a bridge, he builds it to resist strains, and any part is superfluous or detrimental which does not bear its strain. And so with human beings. We have work to do, even though we do not clearly see to the end, nor understand the present meanings. There is a healthful feeling in the exercise of our faculties, and we have

not employed those faculties to the full unless we have felt the strain, at least to elastic limits.

Pain shows when this line has been overstepped. Then indeed there appears some imperfection; but the imperfection is with us for our neglect of this kind of warning. In a larger scope of things, with more knowledge and illumination, and from a standpoint in which we see better the perspective and the order of things, the imperfections seem less, and ultimately they may be reconciled into a larger harmony.

GENERAL SUMMARY

THE study of ethics is one of the most important as well as most fascinating objects to which the mind can be directed.

The great problem is to find in the constitution of the world itself the directives to human action and the criteria by which we should estimate the degree of development.

This problem is extraordinarily complex and demands the subsidiary study of the physical, biological, and mental sciences.

There are three methods of founding a system of ethics : (1) the authoritative method, (2) the empirical or academic method, (3) the scientific method.

The first two have no especial value. The scientific method is that which is here chosen.

In the history of ethics we find comparatively few attempts to found a system on scientific principles, and these have been all tentative and faulty. Aristotle's system is the most complete, but it fails for want of a deep base and satisfactory general principle.

Most other systems fail by reason of being too subjective, and responding to the opinions and temperament of the authors. Kant's system is vitiated by his desire to safeguard certain preconceived notions ; it is not established on a fundamental base, and the argument is a vast *petitio principii*. Both Kant and Hegel are dominated by the institutions of the Prussian State.

Kant has influenced, directly or indirectly, writers of genius, Coleridge, Carlyle ; but the philosophical faculty of these has been deficient. The Kantian ideas and phraseology are prevalent at most of the universities of the world, and this has accompanied a lack of fertility of thought.

Hutcheson, Hume, Adam Smith and others have attempted to build ethical systems, but in each case the analysis has been deficient.

Herbert Spencer is the only one whose comprehension

has been wide enough, but his doctrine of evolution is not a principle of nature, nor even, on account of its lack of quantitative definition, a satisfactory guide to classification.

The science of biology has had an importance which accidental circumstances have rendered exaggerated in the history of ethics. The biologists have put forward great claims, but they have shown a lack of psychology. The study of progressive developments, or transformism, in the biological world, is highly interesting in itself, but the biologist cannot immediately rise from that basis and pontificate on questions of ethics.

M. Lévy-Bruhl has denied that a science of ethics, in so far as it is legislative, exists. His arguments are acute, but not conclusive in the sense he indicates.

* * * * *

The second part of the work establishes the principles of Truth, Energy, Sympathy as fundamental parts of the structure of ethics.

When these are examined with particular study the principle of Truth becomes extended into the development of science. The direction of human activity so indicated suggests one of the criteria for which we are searching. The life of the nation should turn more determinedly round science.

The principle of Energy concords with this, and gives rise to the standard of efficiency, which again affords criteria for the establishment of institutions which serve us for more immediate guidance in practical questions.

The principle of Sympathy implicates that of co-operation, and at length that of justice, and it is the vivifying spirit of the social developments of intercourse, of the plastic arts, and of the poetry of the nation.

These principles are not only fundamental but they are supreme, as in the competition of systems of ethics they will prevail by their intrinsic power.

A further search of criteria suggests a re-examination of the biological data with a new purpose.

We find that the physical qualities do not suffice for the development of man in the satisfying of his needs. The development of his intellect is indicated, and this affords us new criteria.

We adopt Herbert Spencer's standard of "mass of life," and conjoin it with that of energy implied in the complexity of development according to a series of co-ordinations and controls. This complexity of development must be in accord with the conditions of external nature.

Keeping therefore in view the fact that secondary motives must not outrun so as to throw into desuetude the original motives from which they arose, and recognizing that the great primal impulses give driving power in life, we are now able to lay down the great structural lines and to show the principle of development of our system.

The formative principles are: Truth, Energy, Sympathy; from these principles should be deduced the series of institutions which in a state form the immediate guides; complexity of development corresponding to co-ordination in accord with the conditions of the external world affords the criteria of degree of development.

These principles will direct institutions, and the social activities of science, art, literature, and affairs, as well as the cultivation of the physical qualities of the population. A complete and easy development requires a spirit of tolerance amongst the people.

* * * * *

Part III deals with the problem of the immortality of the soul, and with questions of ideals and purpose. The problem of immortality of the soul is vital to Ethics, for we direct our actions according to realities, and not to delusions, and every kind of activity requires reward or recognition, or some form of satisfaction. The arguments of the religions, those of Plato, of Paul, of Berkeley and others of the idealist school, are all faulty.

It is possible to show that science is not inconsistent with the doctrine of immortality.

Our aspirations, and all that make the meaning of life, depend on immortality. The psychical world without immortality would be a chaos of broken meanings, yet the more we explore the world, the greater and surer is our sense of law and harmony. The verdict is for the immortality of the soul.

In our lives it is not the immediate violent and forceful

things that supply the most enduring motives. These are found in aspirations, hopes, endeavours; the seal of them at their highest is beauty.

Over all our lives looms a great Purpose.

Part IV deals with forms of government, war, and with some of the principles on which thinkers have founded systems, and finally, with some of the most difficult problems of social life and Ethics. These are now seen in truer relation and in better perspective.

The best form of government is found by taking the widest base and rising from that by a series of selections until a small and manageable body of government is chosen.

Governments may be made far more efficient than at present.

War is not an eternally necessary part of human life. It has a character of stupidity which is not less revolting than its terrible destructiveness. War must be eliminated.

The favourite ethical qualities, courage, prudence, tolerance, benevolence, become better defined.

Pleasure is not an ethical end, but a guide to activity.

The motive force is not found in pleasure, but in the natural satisfaction of needs that correspond to development.

New ideas, in accordance with our principles, will arise concerning disease, sin, sacrifice, and wastage of genius.

Defects, wastage, pain, will be lessened in a society founded on these principles, and finally even all that makes discord in our intellectual conceptions will be reconciled, in the extended scope of things, into a larger harmony.

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