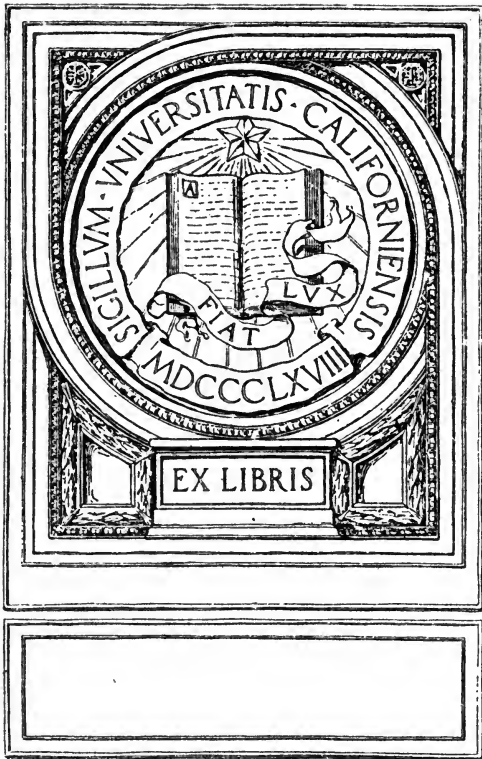


LIFE AND
HUMAN NATURE

SIR BAMPFYLDE FULLER
K.C.S.I., C.I.E.



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LIFE AND HUMAN NATURE

LIFE AND HUMAN NATURE

By SIR BAMPFYLDE FULLER,
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LONDON :
JOHN MURRAY, ALBEMARLE STREET, W.

1914

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TABLE OF CONTENTS

PART I: THE ATTRIBUTES OF LIFE

CHAPTER I

	PAGE
INTRODUCTORY - - - - -	3

The study of human nature—its attractiveness—the surprising anomalies and inconsistencies of man's disposition—if man has risen by evolution up the ranks of the animal kingdom the roots of his behaviour must stretch down the animal kingdom, and must, indeed, lie as deep as life itself—the essential nature of Life cannot be discerned by our senses, may only be inferred from its manifestations—what are these manifestations?—the marvellous energy of Life—instincts, impulsive and directive—consciousness and volition—memory, habit and imitation—sensitiveness and responsiveness—changefulness—Life not the result but the cause of the substances and organs with which it is associated—the proofs of this contention—Life's disregard of such natural laws as express the workings of lifeless matter—functions without organs—anomalies of development and reproduction—its invasion of new environments—the repetition of its schemes with altered material.

CHAPTER II

CHANGE - - - - -	24
------------------	----

Man's inherent desire for Change—the ceaseless round of change in the substance of our bodies—also, by death and reproduction, in the constitution of a species—the changes that have resulted in the evolution of species—Darwinism—Mendelism—the former cannot, the latter can explain the occurrence of useless features or qualities—illustrations of such useless developments—has evolution resulted from capricious changefulness or has it been guided by design, or by environment, imitation or habit?—the difficulties involved in the spread of new characters from the individual to the species—possible influences of environment of imitation—man's changefulness of disposition illustrated by his migrations, and by his pleasure in the ludicrous, in gambling and in drink.



CHAPTER III

	PAGE
SENSATION AND REACTION - - - - -	46

Sensations are produced in the brain, not received by the sensory organs, and, so far, resemble memories and hallucinations—the typical sensory organ—sensation without sensory organs—our sensations are not descriptive but symbolic, and give us no true ideas of the things that excite them—moreover, they need to be constantly corrected by memories and inferences—the nature of memories—they may be mistaken for sensations—sensations of ourselves—the connection between sensation and reaction is primarily automatic and inevitable—its control by other sensations and by memories, impulses and habits—reflex and ideo-motor actions—the mysterious workings of directive instinct in the lower animals—the origin of consciousness in sensation, in the feeling which accompanies an impression—pleasure and pain, derived from sensation—their ambiguity as guides to behaviour—erroneous conceptions of their utility—their influence in the formation of habits.

CHAPTER IV

INSTINCT - - - - -	63
--------------------	----

Man's behaviour is actuated not by nerve ganglia but by instinctive impulses of which the nerve ganglia are the instruments—impulses aroused by memories as well as by sensory impressions—resulting complications of behaviour—distinction between impulsive and directive instincts—the liberation of impulses into action by sensory impressions and memories, by imitation and the passage of time—impulses consciously liberated are accompanied by emotions—these follow and do not precede the promptings of impulse to action—happiness and unhappiness are the consequences of satisfied or unsatisfied impulses—their distinctiveness from pleasure and pain—these emotions and feelings cannot be original guides to behaviour, but they assist in the formation of habits—and they act like impulses in expressing themselves by muscular reactions—laughter, tears, facial expressions—classification of impulsive instincts—Individual, Social, Reproductive, Provident.

CHAPTER V

INSTINCT (<i>continued</i>) - - - - -	82
---	----

The impulses of Kindness and Cruelty—the Æsthetic impulses of self-abandonment—the Ethical impulses of self-restraint—the distribution of these eight classes of impulses along the ranks of the animal kingdom—mankind possesses all of them—but they vary greatly in strength between individuals and races—and in the same individual they may

actuate different behaviour upon different occasions— they are liberated in varying assortments and are affected in varying degrees by reason, will and habit—their multiplicity reflected in the numerous schools of philosophy—Directive Instinct, its independence of experience—illustrations—its inability to infer—its command of the internal functioning of the body throughout the animal kingdom—the weakening of its authority over external behaviour as we ascend the scale—its survival in human aptitudes or talents—Reason—its processes described, and compared with those of directive instinct—its possession by the lower animals, and indeed by all animals—its development in man assisted by consciousness and by language. PAGE

CHAPTER VI

MEMORY, HABIT, AND IMITATION - - - - - 104

Classed together as representing repetitive influences—the Memory stream—our personality depends upon its continuity—peculiarities of its course—the effect upon it of emotional impulses—influenced by the will it becomes imagination—the statics of memory—direct and symbolic recollections—visualization—correlation of symbols and objects—recollections that adjust our sensations—Habit—its effect in regulating the power of instinctive impulses—its immense importance in directing behaviour—the influence of mental habits or fixed ideas—comparison between habit and directive instinct—how far may habit innately alter behaviour or character—Imitation—is the impulse which underlies education—its conflict with habit—the conditions which enable it to overcome habit—its possible effects in stimulating mimicry and in the spread of evolutionary changes from the individual to the species.

CHAPTER VII

CONSCIOUSNESS - - - - - 128

Its origin in the cell as a feeling that accompanies sensation—its development through diffused (sometimes apparently localized) subconsciousness into the flower of selfconsciousness—the sympathetic awareness of the brain cells a possible explanation of our capacity of observing our recollections and ideas, and of such phenomena as thought-reading—the bearing upon selfconsciousness of the phenomena of hypnotism—the effect of selfconsciousness upon outlook and behaviour—the idea of personality—its growth within recent times—the effect of consciousness in widening the scope and intensifying the power of reason, and in affording opportunities to the will—also in leading mankind into errors and unhappiness—errors of apprehension, confusion of the visioned with the observed—errors of inference, mistaken linkings of happenings

as cause and effect—the unhappiness caused by conscience— PAGE
 the misery resulting from conflict between will and instinct
 —the appreciation of injustice.

CHAPTER VIII

VOLITION - 150

The distinction between suggested and original resolutions—only the latter manifest spontaneity or free-will—the determinist denial of the existence of free-will—the arguments which appear to show that man possesses it—its unusual strength in eccentric or original men—its function concerned not with invention but with choice, whether between methods of satisfying an impulse, or between different impulses—the struggle of temptation—the connection between spontaneity and the separateness of living individuals—spontaneity appears to be a universal attribute of Life.

CHAPTER IX

RECAPITULATION - 161

Organs derived from impulses, not impulses from organs—evolution is the result of an impulse to change, guided, it may be, by environment, habit or imitation—individual development, activity and conduct are the products of a swarm of impulses, controlled by directive instinct, or by reason, will and habit—infinite possibilities of differences in innate strength, combination, or control, account for differences in the disposition and behaviour of individuals, and for varying conduct of the same individual—deceptiveness of our senses—fallibility of our reason—apparent duality in Life and Nature—through much that seems confused, evolution has at least developed freedom, but at a heavy cost in degrading error—hopes for the future—the extraordinary antagonism of our impulses—they may be marshalled in two opposing ranks, representing, perhaps, the influence of Life and of Matter—correspondence between Christian precept and the impulses which may be attributed to the spirit of Life.

PART II: CONSTRAINING INFLUENCES

CHAPTER X

RACE - 179

Difficulty of distinguishing between the effects of race, environment and culture—racial peculiarities of feature—racial peculiarities of character—illustrations of their distinctiveness and persistence—typical characteristics of peoples—comparison of the Baltic and the Mediterranean peoples—the origin of racial peculiarities—their connection with en-

vironment, which appears to stimulate the production of certain types and to spread them over a locality—the disturbing effect of changeful variations or “sports”—the levelling effect of marriage which tends to reduce a nation to the uniformity of a family—the disturbing effect of migrations—the levelling effect of infertility which eliminates alien traits that are unsuited to the environment, or out of accord with the genius of the native race—illustrations of migrations—from Northern Europe to India and the Mediterranean—their influence upon the history of India, Greece and Rome—the impermanence of northern characteristics compared with those of southern races. PAGE

CHAPTER XI

ENVIRONMENT - - - - - 205

Its effect upon the individual—in modifying features, disposition and habits—its effects upon the race, that is to say, in producing peculiarities which are heritable—the possibility of this denied—facts which appear to prove its actuality—hereditary peculiarities of size, colour and degeneration which have proceeded from environment—the effect of environment in stimulating mutations, or “sports”—its influences may be unintelligible, but should not be denied on this account—illustrations of the association amongst mankind of distinctive features and complexion with particular environments—similar illustrations in respect to traits of racial character—the direct influence of environment in modifying character, its indirect influence in guiding habits—effects are hereditary in the former case, not in the latter—its influence upon human fertility—the effect of a changed environment upon migrants—less in the case of southern than in the case of northern peoples.

CHAPTER XII

CULTURE - - - - - 229

Is the tradition passed on by each generation to its successor—its dependance upon language for its formation and upon writing for its continuity—owes to reason its elaboration and also its errors—confusion of visioned with observed causes, and the resulting conception of a double set of ideas, visionary and practical—illustrations—the inferences of reason may confirm the lead of unreasoning impulses—the genesis and spread of culture—the initiative genius of inventors—imitation by the crowd, formerly reluctant, latterly more eager under a growing desire for change—other impulses which conduce to imitation—reverence for authority—the prestige of a conqueror—sympathy—instinctive satisfactions—the pressure of circumstances—reason—the effect of imitation in producing new habits of mind—culture cannot alter racial disposition or change the innate impulses that form character—culture and population—its effects upon the birth-rate.

PART III: HUMAN ACHIEVEMENTS

CHAPTER XIII

PAGE

MATERIAL PROGRESS - - - - - 255

The provident impulse—signs of it amongst the lower animals—its need of reinforcement by other impulses—the domestication of fire, of animals, of plants—the success of the ancients in agriculture—the beginnings of private property and of marriage—of the art of building—the invention of tools, of dress, of writing—the development of trade—its civilizing effect—the rapid material progress of Northern Europe—assisted by the freedom of women—changes of ideal that have accompanied it—their comparison with the ideals of former times—the extension of the new ideals to other parts of the world.

CHAPTER XIV

SOCIAL PROGRESS - - - - - 274

The growth of polyandry and the matriarchate out of the promiscuity of the herd—war introduced the patriarchy—the impulses which combine to support the institution of the family—the development of the social fabric—blood-brotherhood—propinquity the original stimulus, ideas of propinquity a later refinement—neighbourship—the esprit de corps of castes, guilds, and similar associations—patriotism and loyalty—the bonds of religion—nationality—social institutions—slavery—helotage—foreign dominion—the relation of employer and employed—influence of liberty as an ideal—its dangers and disappointments—the spirit of kindness—its helpfulness to the poor—State education—riches and poverty—the causes of poverty—its extent and its compensations—review of the impulses which have contributed to social progress.

CHAPTER XV

MODERN ECONOMICS - - - - - 293

The term "wealth" limited with reason to material possessions—the peculiar value of things that can be pledged—the usefulness of money in stimulating industry by enlisting the co-operation of a number of impulses—modern industrial civilization—likened to a whirlpool which must be kept incessantly in motion—prosperity dependent upon the rapidity and volume of the current—circumstances which contribute to its rapidity, communications and enterprise in retailing—and to its volume, credit and low prices—the development of industrial civilization from earlier stages—the effect of advertisement—of good government—the swelling of the wealth-stream by foreign trade, borrowings, investments and

CONTENTS

xi

subsidies—the appropriation of wealth by capitalist enterprise, by trade, by the rendering of services—wealth attracts wealth—the influence of the spirit of kindness—services rendered by the rich—the prospects of Socialism.

CHAPTER XVI

MODERN POLITICS - - - - - 311

The multiplicity of the interests that are aroused by modern politics—the simplicity of ancient political ideals—the head of the herd—the council of patriarchs—the warrior king—religious authority—the conflict between monarchy and aristocracy—the interference of the masses—how their introduction to politics came about—fundamental distinction between democracy and the political liberty of particular classes—although gratified by the possession of the franchise, the people are not generally anxious to exercise it—the stimulus of emulation or party feeling—the party system and the group system—efficiency and prospects of the latter—effect upon elections of jealousy and chauvinism—weakness of democracy in foreign affairs—the party pendulum—influence of an earnest desire for reform—so far has expressed itself generally in non-official propaganda—its prospects of increased authority—declining status of professional politicians—local government independent of party feeling—review of the various impulses or ideals which have operated at various times to bring about political reform—the fundamental influences of national character—political progress by imitation—the unrest occasioned by each change of ideal—conclusion.

PREFATORY

WHAT, it may be asked, are the qualifications of the writer of this book for entering upon so difficult a subject? I have travelled much, and have enjoyed favourable opportunities of observing the behaviour and comparing the ideas of different races of mankind. And, during many years of my life, I have been occupied in the task of governing men—of inducing large numbers of both Europeans and Asiatics to carry out the desires of the State; and it is probable that in this business one gets a closer insight into the complicated working of human nature than by any other course of experience or study. So much for what is empirical in these discussions. For my psychology and evolutionary biology I am, of course, immensely indebted to the many able and eminent men who have written on these subjects, and especially to Professors William James, E. D. Cope, E. B. Tylor, W. McDougall, C. Lloyd-Morgan, F. W. Gamble, W. A. Bateson, R. C. Punnett, William Ridgeway, Karl Pearson, Sir Francis Galton, Houston Stewart Chamberlain, and MM. Gabriel Tarde, J. H. Fabre, and Henri Bergson.

February, 1914.

PART I
THE ATTRIBUTES OF LIFE

LIFE AND HUMAN NATURE

CHAPTER I

INTRODUCTORY

HUMAN nature is a subject that is studied by everyone. It provides a philosopher with material for the curious speculations of psychology ; but it is not less interesting to the crossing-sweeper, whose livelihood depends upon the disposition of the passers-by. It may be vulgar to gossip ; it may be wrong to talk scandal ; but they have charms that can hardly be resisted ; and to many persons newspapers would be very dull reading were it not for their personal paragraphs. Human nature is the most attractive and the most exciting element in politics : it is the source from which dramatists, poets, and novelists draw nine-tenths of their inspiration : painting and sculpture are generally devoted to its illustration, and even so abstract an art as music is in great measure content to express the phases of human emotion. Nor need we marvel that human nature should be so engrossing a study. Our happiness is conditioned by the way in which others behave towards us. We win success in life by our ability to read and to influence the character of others. And, apart from these practical interests, human nature attracts our regard by a particular fascination. It is so extraordinarily variable, it abounds in such astonishing

inconsistencies, that it offers to us, at any moment, the exciting surprises of a dramatic entertainment. It is not only that cruelty and kindness, selfishness and self-denial, strength and weakness, distinguish different members of the same community: the same person may unaccountably display these opposite qualities at different moments of our acquaintanceship. For what diversity of purposes does man use his tongue! "Therewith bless we God, even the Father; and therewith curse we men, which are made after the similitude of God."

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By the variety as well as by the complexity of his nature man is separated from the brutes by a gulf that appears to be unbridgeable. Yet, if we accept the doctrine of evolution, we must believe that man has crossed this gulf to win the privileges of his position, and owes his form, his talents, and his aspirations to a gradual development out of brutish conditions. The roots of the excellencies upon which we pride ourselves must stretch down the length of the animal kingdom, must, indeed, be traceable—were we able to trace them—not merely in what are generally called the "lower animals," but in the minute animalcules which flit across the field of the microscope. For, unless the germs of our qualities exist in the lowest forms of life, we must have been endowed with them, at one stage or another, by acts of special creation, and for such interpositions of Providence the doctrine of evolution has no place. May we not, then, reject a theory which strains our powers of belief so harshly? Only if we can close our ears against a cloud of witnesses. Geology testifies that the forms of animal and vegetable life change and become simpler and simpler with the increas-

ing age of the rocks that contain their fossils, and that during the remotest geological age from which relics of life have come down to us, no animal existed so highly developed as a fish. The growth of the embryos of the higher animals presents phases that appear to illustrate by repetition the course of their progenitors' development up the animal kingdom, exhibiting in transitory stages the likenesses of adult forms that have become extinct. The human embryo, for instance, at one stage of its growth, is actually equipped with gill-clefts, such as those through which fish pass the water that gives oxygen to their blood. Useless organs survive which can only be relics of an outgrown constitution. There are rudiments of hind legs in whales and boa-constrictors. Monkeys have pointed ears, and from time to time children are born possessing them. We all retain muscles for moving the ears, although very few can use them. And every baby confesses its kinship with the monkeys by the disproportionate strength of its arm muscles—a necessary endowment in the days when mothers sprang about the branches of an arboreal home. The peculiar character of the animals and plants of oceanic islands indicates very forcibly that species have originated by development, and that, remote from outside influences, they have undergone changes along special lines of their own. That differences, as marked as those which distinguish one species from another, can come about by development is proved by the varied forms of our domesticated animals: admitting that a Pekinese is akin to a bulldog, we cannot deny that there may be blood relationship between the horse and the donkey. We may be unwilling to believe that man is the last shoot of a genealogical tree that extends down the length of the animal kingdom.

But the proofs are too strong for us. The straiter Darwinists would have us believe that the variations which have brought about this marvellous development have been guided by no directing impulse, have not even been stimulated by environment or experience, but are spontaneous random fluctuations which, when useful, have been preserved by the struggle for life. This theory is non-proven, and we may disbelieve it if we please. But as a process, and without implication as to causes, evolution holds the ground as an explanation of the origin of man, and of the animals that are below him. We must remember that, from the physical point of view, the gulf between man and the monkey is after all not so wide as that between the monkey and the squirrel.

Great as is the contrast between man and the brutes, more striking still is man's inconsistency with his natural surroundings. He has grown up in a world that is unmoral, wasteful, and cruel—a world in which life feeds upon life, in which myriads are born without chance of survival, in which justice and mercy are trampled down by the fierceness of the struggle for existence. He has taken some colour from his surroundings : he has learnt his lesson in cruelty and selfishness—nay, in some respects he seems more bloodthirsty than the brutes, for of them few kill their own kind except under the spur of hunger. But, in other moods, he exhibits the strangest paradoxes. He rises from the feet of Nature in protest against her teaching. In an arena of brutish struggling he holds up ideals of self-denial, kindness, justice, and mercy : he gathers notions of Art from the world's kaleidoscopic exhibition of forms and colours ; against Nature herself he appeals to supernatural forces which he seems dimly to descry through the darkness of her forests,

building temples, not only to manifest his feelings of veneration, but to enshrine conceptions of immortality, asceticism and purity which condemn what daily happens around him. Most strange of all is his respect for celibacy, which directly conflicts with the strongest of human instincts, and, if generally practised, would altogether extinguish human society. Yet down the vistas of history we see it enshrined by the admiration of mankind. Centuries before the time of Buddha it was the ideal of Indian sages. It is a vivid feature in the life history of Christ. It was commended by the earliest Christian teachers, and at one time afforded to vast numbers of their disciples a refuge from the pagan wickedness of the world. It has come down to us as an honoured institution of the Roman Church. Protestantism has rejected it : but not without some regret—some echoes of an admiration so finely expressed by a Protestant poet :—

Thrice blessed whose lives are faithful prayers,
Whose loves in higher love endure ;
What souls possess themselves so pure,
Or is there blessedness like theirs ?

If man is an organism which owes its development to natural circumstances, whence come his ideas condemning these circumstances ? Whence does he derive this strange conflict of impulses, that urge him at one time to self-indulgence, and another to self-denial—this antagonism which has been figured as between the Spirit and the Flesh ?

§

As to the nature of Life, philosophers have been theorizing for centuries. There are some who hold that it is the appendage of a particular chemical compound : this might be produced in a laboratory

and Life would be found in the test tube with it. In fact Life is assumed to be an attribute of Matter. But this view seems to ignore altogether the peculiar character of the energies which it exhibits. Its essential nature is unknown to us, as is also the essential nature of electricity and gravity. And it seems likely to remain unknown, since it lies beyond the scope of our powers of perception. Science is reluctant to admit that the unknown is unknowable; and the striking success which it has recently gained in the analysis of the constitution of the electric current, and of the emanations of radium, may suggest that no limits should be set to its powers of investigation. But these discoveries, great though they are, only prove that we can increase the acuteness of our senses, and perceive appearances which have hitherto lain beyond our ken. The fact remains that we are dependent upon our sensations for our knowledge; and our sensations can resemble realities no more nearly than a catalogue resembles the furniture which it advertises. Conscious reason enables us to analyse our sensations, to classify them by their properties, and to deduce from their relations to one another the abstract conceptions that crown the edifice of science. But our sensations are the ground work or this intellectual superstructure, and we can gain no clues to the nature of energies, which are not themselves perceivable by the senses, except by the observation of the perceivable effects that they produce. Gravity is known to us merely by the movements which it causes in material objects. We can form any view of the nature of Life only by scrutinizing and classifying the manifestations of its activity. The appearances upon which we rely are as unlike realities as words are unlike the things that they represent. But they are the only material that

is available. And we may assume that they at least possess a symbolic value, and can tell us something, by their occurrence or non-occurrence, their similarities and differences, and the order in which they come to our observation.

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The enormous power of Life's energy is not generally realized. An animal or plant, if likened to a machine, must be likened to a machine of marvellous efficiency. Its strength must not be computed by the force which is developed by its external muscles: in the assimilation of its food, and in the secretion of waste, it forms chemical compounds which, if capable at all of being formed in a laboratory, can only be produced by the lavish expenditure of energy. A class of minute bacteria, living in the soil, are able to fix nitrogen from the air. For this same purpose factories have been established; but the energy required for the process is so large, and, if obtained by burning fuel, would be so expensive, that they can only be maintained with hope of profit where their machinery can be driven by large waterfalls. It has been computed that an acre of wheat, in coming from germination to maturity, daily exerts the force of more than fifteen horses. The coal beds by which modern industry subsists are a store of energy that was accumulated by plant life in ages gone by: in fixing it the plants exerted as much power as we now obtain from the coal by burning it. Coal is popularly described as "stored sunlight," and it is true that the plants needed light in order to produce it. But so does a steam engine need water for its functioning. Yet we do not credit the water with the power that is developed.

Moreover, not only is Life's force remark-

able for its intensity: it acts very largely in a contrary direction to material forces. These tend to dissipate energy: the action of the sun, the working of our machines, alike result in the conversion of energy into heat, which, if not lost by radiation into space, diffuses itself about the earth, tending towards a condition of uniform temperature in which it is useless for human purposes. Coal contains energy because its carbon is held in a stressful disunion from oxygen: when the coal is burnt, these elements become united and the energy resulting from the separation is dissipated. The furnaces which turn the wheels of modern industry involve, then, a continuous loss of energy. Life, on the other hand, is always building up energy by uniting or disuniting substances which naturally tend to fly apart or come together. Conspicuous in this matter is the activity of plants: they form out of mineral substances organic tissues which, directly or indirectly, provide the whole of the animal world with its food. The most characteristic ingredient of these tissues is nitrogen. This abounds in the air; but plants cannot directly annex it. A small amount, in combined form, is brought down by rain. But vegetation mainly depends for it upon the action of the minute bacteria that have been already mentioned. These have the power of absorbing it from the air, and they yield it up to the plant roots which ramify in the soil around them. The peculiar capacities of these minute embodiments of life ultimately provide the living world with the nitrogen that is essential for its subsistence. How they originated remains the greatest of problems. We may fancy, if we please, that Life pervades the Universe, and under certain conditions joins itself with Matter—and commences its earthly evolutionary

progress—in the form of these minute organisms ; we may go further, and imagine that, if these conditions exist, this incarnation may be in progress now around us.

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Let us now attempt to survey and catalogue the most prominent of the characteristics that mark the action of Life as manifested to our senses, limiting our view, in the first place, to characteristics which are noticeable throughout the whole of the animal kingdom, and, it may perhaps be held, throughout the whole of the vegetable kingdom also.

Instincts.—All living things are actuated by impulses, and are guided by directions, which may be conveniently styled “instincts,” if we use the term in a broader sense than is usually attached to it. Some of them may be classed as vaguely impulsive : these are illustrated by the instincts of self-preservation and of reproduction. Others give definite directions as to complicated methods of behaviour. Directive instincts of this class that particularly interest us are such skilful contrivings as those by which birds build their nests, bees work up their combs, or caterpillars encase themselves in their cocoons. But these illustrate only one of many kinds of instinctive action. A caterpillar is the young of a butterfly in its embryonic stage : it differs from the young of a mammal, growing within the womb of its mother, in that during its embryonic life it is cast adrift to fend for itself ; the construction of its cocoon is part and parcel of its embryonic growth, and, if we style this instinctive, we must also recognise as instinctive the power which enables it to develop from a germ into a caterpillar, and

from a caterpillar into a butterfly. By instinct, animals and plants increase in size, and shape their organs, until they attain maturity. They are not conscious of the force within them: nor are we conscious of the vital processes upon which our lives, from hour to hour, depend. Directive instinct needs no assistance from experience or practice: the young chaffinch knows precisely the materials for its first nest, and the method of interweaving them: young birds generally know how to fly without the need of practice: the bee is an instinctive architect of hexagonal cells. By instinct our organs perform their functions—the heart beats, the lungs pulsate, the liver and kidneys distil their secretions. The direction of these complicated processes owes nothing to experience, and in this differs essentially from the working of reason. But reason itself is a development of processes that are fundamentally instinctive, and are shared by man with the animals below him. So also, we shall find, are impulses which we do not ordinarily think of as instinctive: such as the promptings of kindness, and even the vague feelings of ecstasy which we speak of as “æsthetic.” Instinct underlies our emotions. We love, are enraged, are terrified, feel pity, as we are moved by impulses which lie as deep as life itself. Our instincts may be compared to a number of alarums, each of which is set for a special stimulus and runs down immediately upon being touched by it. The stimulus may be a sensation of something that occurs outside us or inside us: it may be a recollection, or it may merely be the lapse of a period of time. Once stimulated, instinct acts forthwith, unless it is checked, or inhibited, by another instinct, by habit, or by an effort of will.

The diversity which we perceive in the behaviour

and manner of life of different kinds of living creatures manifests a corresponding diversity of instinctive promptings. The workings of *directive* instinct exhibit extreme variety, although they are generally uniform throughout the individuals of a species. The similarity of blackbirds', or of chaffinches', nests is a familiar illustration. But each of the principal *impulsive* instincts of mankind can be followed down the animal kingdom by traces which, coming to the surface here and there, appear to witness to an underlying uniformity—a continuity in germ if not in development—which acknowledges the fundamental relationship of all living creatures.

Consciousness and Volition.—In the strongest contrast to instinct stand the faculties of consciousness and volition. To an organism whose behaviour is directed by instinct, it means nothing that an experience is new, or is familiar: it learns nothing, and has no need of learning. Consciousness and volition, on the contrary, are essentially means of drawing profit from experience: they may mislead us, whereas instinct is infallible within its own province; but error is an incident of liberty, and these faculties, in their fullest development, open to man possibilities of freedom which the directing force of instinct would have kept closed against him.

In the uniformity of instinct we may see a reflection of the continuity of Life. Consciousness and volition emphasize, on the other hand, Life's individuality: they could scarcely have been developed had not Life been broken up into separate parcels—had it not been divided, that is to say, between a number of different individual beings. The forces of gravity, of electricity, are ubiquitous: there is no spot on the earth but is subject to

them, or, so to speak, contains them. But Life is distributed amongst plants and animals that are separated from one another by lifeless space. Each individual experiences an environment of its own: lives its own life, which differs, if by ever so little, from that of other individuals of the same species. Connected with other individuals by descent, it shares their instincts; but it is itself a separate focus of life which is capable of evolving new developments. Its isolation enables it to concentrate the vague feeling of awareness which arises in sensitive cells that are touched by an impression. Consciousness springs from the convergence of these microscopic rootlets of sensation, and flowers in the marvel of self-conscious personality. The independence which comes from separation fosters the development of a power of *willing*—primarily an indefinite capriciousness of choice; in man, however fettered by convention and habit, a faculty of judgment by which he may follow the good and eschew the evil.

It may be hard to believe that the lowliest of living organisms possess the germs, however rudimentary, of consciousness, personality, and will. We can judge of the mind, so to speak, of these organisms only by observing their conduct, and any conclusions must be in great degree speculative. But there is good reason to hold that sensation, in however humble a form, involves a *feeling*, as well as a recording, and differs in this respect from such chemical reactions as result, for instance, from the influence of light. And the directions of instinct, closely though they may govern, cannot provide for every possible contingency of experience; they must leave some scope, however small, for choice—that is to say, for the exercise of judgment or of volition. The microscopic amœba displays an activity which is

wholly different from that of lifeless objects. All living organisms seem to possess, in some degree, the faculty of selection, and are able to discover ways of circumventing difficulties. Air bubbles which are prevented from rising in water, simply press themselves against the obstacle; animalcules will find a path round its edge.

According to one school—the “determinist” school—of thought, spontaneity, or free will, is non-existent, and our impression that we can direct our thoughts or our actions is entirely fallacious. We are automata, and every idea that enters our minds, every act of our behaviour, is imposed upon us by our instincts, or our habits, or is the inevitable consequence of our sensations or our memories. Determinist philosophers not only maintain that we are the result of forces which are in theory calculable, but that it is logically unthinkable that we should possess any initiative. Yet, if one who is intellectually convinced by these arguments will look into his own mind, he will find there an ineradicable idea that, as a matter of fact, he is endowed with a will and can exercise it freely. Introspective observation refuses to accept the conclusions of logic; but we need not conclude that introspection is misleading. Logic traces effects back to causes, and formulates, as a natural law, the invariable connection of a particular effect with a particular cause. But the effects of Life are so complicated and elusive that they cannot be reduced to rule with the precision that is attainable in dealing with inanimate matter; and, in classifying its manifestations the logician is apt to mistake conditioning circumstances for ultimate causes. He might, for instance, conclude that I had joined a golf club because the links were close at my door, whereas the real cause was that I had

resolved to take up golf instead of hunting. Spontaneity appears, indeed, to be the most distinctive of Life's attributes—the capacity which marks it off most clearly from lifeless matter. To deny its existence is, then, the natural inclination of those to whom Life appears to be the result of purely physical causes.

Memory, Habit, and Imitation.—These faculties appear to arise from the tendency of living matter to repeat its reaction to a stimulus—to convert, so to speak, a shock into a vibration. Our heart and lungs, once started, maintain their rhythm: a line of conduct, a course of thought, tends to become habitual. This tendency appears also to affect inanimate matter: the physical world abounds with illustrations of it: such are the vibrations which we translate into light and sound. Memory is the faculty of repeating the impressions which the brain has received through the senses. Habit enables us to swell the influence of one instinct at the expense of others, and affords us an indirect means of controlling our passions; by Imitation we repeat, in thought or in action, impressions that we have received by sight or hearing. Repetition is the antithesis of spontaneity, and we may conjecture that these opposites represent respectively, the dominance of Matter over Life and of Life over Matter. But we owe to memory the whole of the material with which we build up our mental life: without it thought would be impossible. And by imitation and habit we appropriate the ideas or behaviour of others who are more intelligent or experienced than ourselves, so that the inventive originality of the few bears fruit for the many, and the transmission of human culture is assured.

Sensitiveness and Responsiveness.—Animals and plants do not live in self-contained independence : to exist they must draw food from their environment and avoid being eaten by others. They must, then, possess some means of communication with their surroundings, and this is provided by their senses. By sight, touch, smell, taste, and hearing, animals can discover their food material and perceive their enemies. Plants obviously possess some sensory powers : they are affected by light and colour : some of them are very sensitive to touch : in absorbing food material their roots appear to exercise some measure of selection. Our senses give us only symbolic impressions of the things around us, and leave us in ignorance of their real nature. We have, as it were, to imagine the machinery of a musical box from the tones and intervals of the music it plays to us. But our symbolic impressions suffice for our animal needs, although they fail altogether to satisfy our philosophic curiosity.

To be of practical utility sensation must be followed by muscular reaction : the sight of food must involve its seizure. Experiment seems to have established that every sensation excites instinctive action, and is followed by some movement—too slight it may be to be noticed by consciousness, but capable of being detected by elaborate appliances for measurement. Where conduct is governed simply and uniformly by directive instinct, movements that respond to sensation ordinarily develop into definite action : the mouth secretes its saliva immediately it is touched by food ; the behaviour of insects approaches the automatic. In the external conduct of the higher animals, as we ascend the scale of animal life, directive instinct gradually surrenders some of its authority to inference from

experience : responses to sensation are complicated by the rivalry of conflicting feelings, and the primary reaction may be checked. A caged bird will not snatch food from the hand if it be afraid of the person who offers it. But, even in the lowest organisms, the sequence of action upon sensation does not appear to be as inevitable as, for instance, the response of iron filings to a magnet : the humblest of them show appearances of hesitation, of choice, which would be inexplicable in simple automata. And in one essential particular the sensation and reaction of living things differs from the effect of light upon a photographic plate : it is attended by *feeling*—dim and vague no doubt in the lower ranks of the animal and in the vegetable kingdom, but still something which, higher up the scale, has been elaborated into consciousness.

Changefulness.—Life, it would seem, can ally itself with Matter only by driving Matter into a state of continual change. The materials that compose the vital organs of plants and animals are never constant : elaborate compounds are built up from the food only to be disintegrated and expelled as waste. Individuals are, then, ever changing their composition ; and by birth and death the tribe is ever changing its individuals. Nor by this process is merely one individual substituted for another : formed by contributions from two parents, each new individual differs from its predecessors. And as tribes change their individuals, so does the kingdom change its tribes. Of the species, animal and vegetable, that are alive at present, but very few existed in the days—geologically not very remote—when the earth was dominated by enormous lizards, or when it grew the dense forests of which coal-beds

were formed. The species which flourished at that time have changed, or have become extinct as the penalty for not changing. Life—or the matter with which Life is associated—turns and eddies in a state of never-ending flux.

Death appears to be the inevitable result of stagnation—of a condition in which the impulses of Life can no longer keep the stream of Matter in motion. We live in danger of being choked by the wastage of our bodies: sleep enables secretion to overtake the process of wastage, and to rid us of accumulations that have collected during our active hours. But not entirely. Gradually the accumulations increase, clog our activities and finally strangle them. Apart from the effect of injury or disease, the duration of Life seems to depend upon the strength of a propulsive force which may be likened to the spin which keeps a top rotating. It is extraordinary that this force should be of such varying efficiency—sufficing, in some cases, to prolong life for a century, and in other cases failing after a few days or even hours. But, in the conceptions of science, time is of little account; and, if we can forget it, birth and death will appear to resemble the vibrations which constitute light or sound—pulsations which maintain a stream of continuity.

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This brief survey of Life appears to have disclosed six leading characteristics, which, in greater or less degree, are manifested throughout the animal and vegetable kingdoms: responsive sensation, changefulness, and the two pairs of opposites,—instinct and consciousness, spontaneity and repetitiveness. Before proceeding to consider these attributes in more detail, we may pause for a moment to reflect again upon the

question whether Life should be considered as an impulse—a special energy—which acts upon Matter, or as the resultant of a particular compound of Matter—whether, in short, Life creates protoplasm or is created by it. Apart from this nitrogenous substance, Life does not occur; but the composition of protoplasm is by no means uniform, and those who assert that it must be the origin of Life may be mistaking a necessary condition for an essential cause. We speak of a current of electricity as “generated” by chemical action; but we do not mean that, apart from this action, electricity is non-existent. To give a homely illustration of the difference between a condition and a cause: I cannot go out *unless* I find my boots, but I do not go out *because* I find them. We have, it may be repeated, no direct knowledge of Life: in itself it lies beyond the field of our sensations. The view that is taken of its nature may, then, depend very greatly upon the predilections of the philosopher: if he is inclined towards a mechanical theory of the Universe he may be discomposed by the eccentricities of Life, but will endeavour to explain them as the inevitable, although complicated, results of mechanical causes.

There is, however, an argument, derived from our observations of the manifestations of Life, which appears to tell strongly against these materialistic conclusions. If Life is the result of Matter we should not expect it capriciously to disregard the tendency to uniformity which enables us to calculate the sequences of material phenomena, and even to make quantitative estimates of the things which underlie them. But Life seems to delight in displaying its indifference to rule. It provides animals with special organs for particular purposes—for instance, with eyes for seeing, with

nerves and muscles for moving, with gills or lungs for breathing, with blood that contains a special substance (hæmatoglobin) for the attraction of oxygen from the air. Yet it reserves cases to show that functions can be performed without functional apparatus, and that complicated activities may be developed by the simple texture of the body. Animalcules (protozoa), that are altogether devoid of sense organs or nerves, distinguish degrees of light, recognize their particular food, absorb and digest it, move with great rapidity and precision by the vibration of nerveless appendages. Creatures of the jelly-fish type (Cœlenterata) fix oxygen from the air without either blood or breathing organs; and earth-worms, belonging to an order much higher up the scale, have neither gills nor lungs, but breathe through the skin. The processes of reproduction, the growth of embryos, the course in which special organs have been evolved, abound with inconsistencies and irregularities which tear holes in any unifying theories, and serve to show that Life is indifferent to rule. In plant-life the cross fertilization of flowers is general: it appears to strengthen vitality; yet species are numerous whose flowers always fertilize themselves—are so formed, indeed, as to render cross-fertilization impossible. Amongst animals, sexual reproduction is the rule; but female plant lice (aphides) produce fully-developed young without the intervention of a male; the oak apple gall-fly dispenses with males in producing every second generation; the eggs from which drone bees are hatched are developed by the queen without male assistance. The eye of the pecten (mollusc) is similar in construction and action to that of vertebrate animals: yet it is developed in a different manner and of different materials.

Fishes and whales need fins for swimming : they develop them, but from different portions of their bodies. So also with the wings of insects, birds and bats : they are, in each case, grown by a different process. Life, when adopting the water, or the air, as its environment, appears to be wholly indifferent as to the method of adaptation. It concerns itself with results, not with processes—in fact, *la fonction fait l'organe*.

The evolution of the myriad forms of animal and plant life does not appear to have resulted from the modification of living tissue under the pressure of surrounding forces, but from the action of two vital energies—multiplication and variation—which have been incessantly forcing living organisms into, as it were, a complicated and many-branched system of channels, or moulds (such as we may liken to the arteries of the human body), which represent the almost infinitely varied means of procuring subsistence. The multiplication of individuals supplies the pressure : their variation is the means by which they are able gradually to penetrate each channel of the system. There is enormous wastage : millions of organisms come into the world merely to increase the head of the pressure : millions of variations are useless, do not assist their possessors to find their way into a new channel, and are extinguished as soon as they arise.

In the history of evolution there are two features which appear to confirm this hypothesis. Firstly, there is the gradual progress of life from the sea to the land, and from the land to the air. Of this, geology assures us. It can hardly be explained by any materialistic theory of adaptation, since the progress must have come about, not by adaptation to environment, but by the extension of life to a new environment. Secondly, there is the

curious circumstance that the drama of life should have followed the same course at different periods of geological time, although the *personnel*, so to speak, of the actors has been altogether different. During the Mesozoic epoch, for instance, mammals were few and of a backward or unspecialized kind, and the lead in the animal kingdom was taken by enormous reptiles, of which our lizards and turtles are the degenerate survivors. Yet we find that to those reptiles parts were distributed which resembled very closely those now taken by mammals. Some were carnivorous, others were herbivorous: some, like bats, haunted the air; and others, like whales, the sea. A similar generalization may be made of the plants which flourished at the time the coal measures were formed. Timber trees occurred rarely; their places were taken by gigantic ferns and club-mosses, some of which stood 60 feet high. It is a striking fact that these plants grew, not by annual additions to their tips, like the existing degenerate ferns and club-mosses, but by the formation of annual rings round the stem—after the fashion, that is to say, of timber trees. Life has repeated its functions with organisms which have differed very widely in physical development, and we seem to be in the presence of an energy that can act independently of form. We have reason to conclude that a living creature is in fact constituted by the union of two very different elements, one of which—Matter—is subject to such natural laws as those of gravity and chemical reaction, whilst the other—Life—may entirely disregard them.

CHAPTER II

CHANGE

THERE is no thinking man but has been impressed with the changefulness of life; and in the literature of all races this has been a fruitful theme for lamentation, satire and cynicism. Not only do birth and death ceaselessly change the composition of our society—not only does each one of us pass from the cradle to the grave through the transforming corridors of the “Seven Ages”—but our minds, that claim to possess timeless excellencies, are as shifting and changeable as the wind. How long can a love keep its light burning, or a grief maintain the shadow that it has cast? And, being by nature changeful, we take an instinctive pleasure in the changes of our thoughts. Any mood that is prolonged fatigues us: gaiety may become more tiresome than sadness, and it is not only kind-hearted sympathy that interests us in the sudden changes that are wrought by great calamities, or by the misfortunes of our friends. The essence of the ludicrous lies in contrast, in the sudden transformation that it occasions in our moods. And what charm does contrast lend to the drama! How delightful the change from Hero’s tragedy to the antics of the city watch—from the lawcourts of Venice to the moonlit bank on which Lorenzo and Jessica sit and make love! With what enchantment does Euripides suddenly veil

from us the death agonies of Phaedra by a vision of sea-birds flying along the cliffs of the Adriatic, distract our pity for the fate of Polyxena by a glimpse of sails rising and falling on a white-crested sea ! So it is with music. The idea upon which the sonata is constructed is the procession of a series of changing moods.

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There is little that is enduring in the constitution of our bodies. They are material only in the sense that a waterfall is material—preserving their form, but ever changing their substance. We are ceaselessly absorbing substances from outside, ceaselessly building up from them compounds which, like explosives, contain potential energy, ceaselessly converting potential energy into actual energy by breaking up these compounds into material which is discharged as waste. Every movement of our bodies, every thought that flits through our brains, destroys something that has been created by our nutritive organs. In building up these, so to speak, explosive compounds, Life runs counter to the course of lifeless matter, which generally tends towards the degradation of energy, the breaking up of compounds that contain potential energy, and the dissipation of energy into the useless form of diffused heat. Life, on the other hand, constructs ; but it constructs only in order to destroy. It uses matter by changing it ; and the more complete is this change—the more unstable is the tissue of which an organ is composed—the greater is the vitality it exhibits. Animals which protect themselves by solid secretions, which have encased themselves within shells or carapaces, have generally forfeited some liberty of action. Plants have lost almost all power of movement : they

are largely composed of materials so stable as, in the form of coal, to have outlived many geological ages. But, in plants as in animals, the vital energy, which enables them to live and to grow, resides in delicate tissues which are in process of constant change. When change ceases, when the vital energy fails to preserve a whirl of metamorphosis, the organism becomes clogged and death ensues. This is the greatest change of all: one individual is obliterated in favour of another. Why, amongst the various kinds of plants and animals, should one find such extraordinary differences in the normal duration of life? Why should some plants be annuals, whilst others can live through several centuries? Why should a sea-anemone live for fifty years, whilst the vitality of a dog is almost exhausted in ten? We do not know. We should expect to find some connection between the length of an organism's life and the period within which it attains sexual maturity. In some classes of plants and animals we can trace such a connection: the northern races of mankind appear to have gained in longevity by being late in reaching the age of puberty. But this theory is opposed by a host of contradictions, as are indeed almost all attempts to bring within the definition of a rule the multiform vagaries of Life's activity.

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The life of an individual may thus be compared to the unrolling of a cinematograph film: so also may be the life of a community, but in this case the illumination flickers with the alternate flashes and darkness of birth and death. And, by a peculiar limitation of reproductive action, it is ensured that each runner in the race differs in constitution from those who give place to him.

This limitation is imposed by the process of sexual generation, under which new individuals are created by the combination of two parents, and, owing their existence to two parents, are exact copies of neither of them. It is, of course, quite conceivable that a single individual should of itself have the power of producing offspring, and in the lowest classes of the animal and vegetable kingdoms we find that single organisms produce new organisms simply by dividing themselves, or by throwing out buds. Here, then, we have reproduction without sex, which may act, moreover, with most extraordinary rapidity, the descendants of a single cell multiplying themselves into several millions within a few hours. But this process will not generally continue indefinitely. After a time the swarm appears to lose vitality, and can no longer increase by the division of single cells. Strength is recovered by the process of "conjugation": two cells come together and blend their substance into a single mass, which subsequently breaks up into a fresh swarm of offspring. It is believed that the two conjugating cells have, before their union, developed the sexual characters which, in less primitive organisms, distinguish the "sperm-cell" of the male from the "germ-cell" of the female.

In all but the very simplest organisms, throughout both the vegetable and the animal kingdoms, special organs of two kinds are developed for the production of these cells. Both kinds may be borne by the same individual, in which case, of course, no *individual* distinction of sex arises. Amongst plants, the sperm-cells are produced by the anthers of the stamens: the germ-cells by the ovary. These, again, are sometimes borne by different flowers—sometimes on different plants—but they usually form parts

of the same flower head. Generally, however, reproduction that results from the conjugation of the sperm-cells and germ-cells of the same flower—or of the same plant—is not as vigorous as if these cells are derived from different plants, and in many cases flowers are elaborately so contrived as to prevent self-fertilization and to leave the germ-cells dependent upon sperm-cells (pollen) which are brought from other flowers by insects, or by the wind. But any general theory on this question is marred by the fact that there are tribes—and very important tribes—of plants which habitually fertilize themselves, or are, even, so shaped as to render cross-fertilization impossible, so that the germ-cells are entirely dependent upon the pollen of the flowers to which they belong, and reproduction is effected by the closest in-and-in breeding. This does not appear to have lessened vitality: amongst these self-fertilizing plants is the pea, which is exceedingly vigorous in growth and in seeding.

Amongst the simpler forms of animal life it may also occur that the organs for the production of sperm-cells and germ-cells are borne by the same individual: this is even the case with earth worms. But, as a rule, they are appropriated by different individuals, and the distinction of sex comes into being, together with the numerous correlative developments of form, colour, and character that mark the male off from the female. It is believed by some biologists of the Mendelian school that a male is, in essence, a female¹ *plus* a special character. According to Mendel's law, the male would in this

¹ Amongst mammals the possession of teats by males appears to indicate an underlying femininity. But it should be remarked that from breeding experiments made with the Currant Moth (*Abraxas grossulariata*) it would appear that it is the female, not the male, which is the more complicated organism, and produces two sets of reproductive cells that are distinct in their sexual potentiality.

case produce two kinds of sperm-cells, one possessing, the other lacking this special character. A germ-cell of the female, fertilized by a sperm-cell of the first kind would develop into a male, fertilized by a sperm-cell of the second kind, would develop into a female. If sperm-cells of both kinds were produced in approximately equal numbers, a germ-cell would have an even chance of being fertilized by either one or the other ; and an explanation is forthcoming for the fact that, on an average, males and females are born in about equal numbers. It may be conjectured that sexual generation, by imparting a shock to the life substance, maintains its essential instability and prevents it from settling down into such a state of equilibrium as would come about from undisturbed habit. However this may be, one point is clear—that sexual generation modifies individuality, and contributes very potently to the changefulness of Life.

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We pass, now, to the consideration of still greater changes—transformations so wonderful that until comparatively recent times their action was hardly suspected. Individuals may change and die ; but, so far as we can judge by ordinary observation, there is no alteration in the type of the species to which they belong. But, unless we reject the doctrine of evolution, we must believe that the type is subject to like changes with the individual, and that, just as individual plants and animals reach maturity through a number of embryonic stages of advancing complexity, so have all the species now existing worked their way up from the bottom of the animal and vegetable kingdoms by passing through metamorphoses, each of which at one time, in bygone ages, stood for a

type, or species, of its day. The testimony of the rocks informs us, beyond the shadow of a doubt, that at different periods of geological history the fauna and flora of the earth were entirely different; that very few of the species now existing were to be found during periods which, geologically speaking, are not very remote, and that with the progress of cycles the forms of animal and vegetable life have advanced from the very simplest to the complex developments of the present day. It is true that in only a few cases have fossils yielded us the actual links of a chain of evolutionary changes, to show the steps by which a tribe of organisms has altered its form. The fossils of an epoch are a miserably incomplete record of its fauna: what, for instance, could we learn of the bird-life of present-day England by scouring the bed of the Thames? But, in respect to a few animals, such links are forthcoming. One of the earliest forms of the horse whose fossil bones have been discovered (*Orohippus*), possessed four toes; fossils that have been disinterred from later deposits show very completely the absorption of the first toe, and the gradual shortening of the second and fourth toes until they only remain as rudimentary "splint bones" in the horse of our time.

Moreover, there has been a gradual change of habitat: Life, beginning in the sea, has passed on to the land and thence to the air, and animals which for the most part inhabit one of these elements have shown a tendency to trespass upon the others. Thus amongst mammals—which are mainly terrestrial—whales and seals have taken to water, and bats to air; amongst birds, ostriches have become purely terrestrial, penguins and divers almost aquatic; whilst frogs, and other batrachians, pass a portion of their life in water and another portion on land.

These immense changes are shadowed, though very faintly, by changes that we may see occurring at the present day. The members of no family are exactly alike: they show variations, or "fluctuations," sufficiently pronounced to mark one individual off from another. These fluctuations result in some measure from the blending in various proportions of the traits of the father's and the mother's stock; but there is reason to believe that they are also due to a spontaneous tendency to vary which is inherent in Life. Variations have been observed amongst unicellular organisms which have come into being by simple cell division. There occur, moreover, other more substantial variations to which the term "mutation" has been attached. These are very noticeable indeed. Such is a red blossom in a bed of white-flowered plants; a chicken with reversed feathers. They are commonly known as "sports," and are of not infrequent occurrence amongst domesticated animals and plants.

Darwin admitted these mutations into his scheme, but relied for the most part upon the fluctuations which, although far less momentous, are of universal occurrence. Both mutations and fluctuations might be useful or useless: one that was useful assisted the organisms which bore it in the struggle for life, enabled them to outvie their competitors and procreate young in which the fluctuation would be a settled hereditary trait. Amongst the fluctuations to which the offspring were subject would be one which advanced this trait towards greater completion; this would in like manner become settled, and in this fashion, during the lapse of ages, a minute pigment spot might be developed into a complicated eye. Fluctuations, normally spontaneous and (so to speak) accidental, might in some cases be pur-

poseful, arising from the effect upon the young of their parents' habits: so the giraffe might lengthen its neck by the striving of giraffes to reach higher foliage. Peculiarities which were of no direct advantage in the struggle for life might, nevertheless, be established through their influence in attracting the opposite sex. "Sexual" contributed to "natural" selection in the development of characteristics. Some years ago this hypothesis was almost universally accepted by science. It has since lost ground; but its straitest adherents have narrowed and hardened it by denying that either "mutations" or the inheritance of *acquired*, as opposed to in-born, aptitudes, have contributed at all to evolutionary progress.

It is difficult to believe that the gradual accumulation of small random fluctuations could have evolved such a complicated structure as the human eye; could have elaborated instincts which would be suicidal if not exercised from the first with the minutest accuracy, and instincts which co-ordinate the behaviour of two separate generations; or could have enabled animals not only to make better use of their environment but to migrate to another environment—as from the sea to the land. Nor is it evident how fluctuations incidental to individuals could have crystallized into the characters that mark a type—could have brought into existence a species, the members of which would not interbreed with their near relations. A still more serious objection is that fluctuations are swamped by sexual generation. It has been proved that any peculiarities of a father, which are inherited by his sons, are less fully developed in them—in fact that the effect of sexual generation is constantly to repress eccentricity, and draw peculiarities back to the

normal. Fluctuations are thus repressed as soon as they appear, and it is not easy to comprehend how they could be the foundation for settled changes.

The Mendelian school of biologists pin their faith to "sports" or mutations. The researches of Mendel showed that these may represent new innate impulses which interbreeding may conceal, but cannot obliterate. Hybrids between the "sport" and a normal individual may not *display* the new character. But a proportion of the reproductive cells which they produce will contain it, and, if two of the hybrids interbreed (as may happen in the course of a few generations) some of their offspring will possess the new character purely, will display it in their form or colour, and, if they interbreed, will produce offspring in which the new character is fixed. Here, then, is a process by which a new variety of importance may be established, and by which it is established by breeders and nurserymen. Instances of persistent, or Mendelian, characters are tallness and dwarfness of habit in plants, the colours of certain flowers, the forms and markings of different breeds of rabbits, fowls and pigeons, the colour of the eyes in mankind. All characters do not, however, appear to be of this class. We know from experience that there are numerous, and very important, peculiarities that do not resist cross-breeding: the characters of both parents are *blended* in the hybrid offspring of finches and canaries, of dogs and jackals, and of white and coloured races of mankind. But Mendelist experimenters have proved a fact which is of immense importance—that the reproductive cells which are produced in large numbers by male and female may differ among themselves, that they may possess different shares of ancestral charac-

ters, so that the combination of any one male cell with any one female cell is one of many possible combinations, each of which might have produced an individual possessing some characters peculiar to itself. An element of chance is thus introduced into the formation of offspring which must contribute very greatly to the variety of life.

The origin of the changes—whether fluctuations or mutations—that occur in individuals, and are the steps by which new species may arise, remain a mystery, unless we ascribe them to an inherent or “bathmic” changefulness of Life, assisted by the clash that results from the meeting of the male and female elements in sexual reproduction. Darwinists and Mendelists agree in holding that the changes are purposeless—that they may be injurious or beneficial, and if beneficial are only so incidentally. If they are injurious they are eliminated by the struggle for life. If they are beneficial they are established, according to the Darwinian hypothesis, by the assistance they afford to their possessors; according to the Mendelian belief they can become fixed by their own vitality, irrespective of environal influences. Mendelism can, therefore, explain the establishment of changes that are neutral—neither injurious nor beneficial—which, on the Darwinian theory, would have little chance of persistence. Darwinists are, accordingly, put to it to discover some positive utility in all peculiarities that have survived. Vast numbers of these are obviously useful, and, as knowledge extends, utility is discovered in characters the practical value of which was at first not apparent. But it is hardly possible to believe that utility underlies all that is curious and beautiful in the animal and vegetable worlds. It has been shown that, in some cases, colours may be protective; but

numbers of animals flaunt glaring hues in the face of danger. If the thrush is protected by its speckled plumage, how has the blackbird survived alongside it? The brilliant colours, the singing capacities, of some cock birds are ascribed to sexual selection—to the advantages which these give the cocks in finding mates. They doubtless afford pleasure to the females; but this does not prove that they owe their existence to their attractiveness. Is the taste of man responsible for the vagaries of female fashion? Moreover, it is difficult to suppose that females are attracted by the small eccentricities in which, on the Darwinian hypothesis, these excellencies originated. The colours of certain flowers may attract fertilizing insects; but there are brilliant flowers that must fertilize themselves. Of what use are the flashing colours that embellish the chrysalides of many butterflies, the long beaks and tails of many tropical birds, the horns of female reindeer and cattle, the hair which some races of men grow on their faces? In truth Life is not logical or frugal in its activities, and we owe to its unstinted prodigality of change much of that which is beautiful in the world.

We must then admit that the varieties of form and colour which distinguish the species of plants and animals have proceeded in great measure from a capricious changefulness which is inherent in Life. But are we to believe that changes are in no case purposeful—that the influence of environment, habit or culture may not stimulate variation which is so far purposeful that it is directed to an end? Beyond a doubt organisms are influenced in colour by their surroundings, and also in form, if only by such artificial mutilations as shorten the tails of puppies. But these changes would be of no progressive value unless

they were inherited by the offspring. Can acquired peculiarities become innate, or do they differ from peculiarities which arise spontaneously in not being transmissible to the next generation? This question introduces us to the most controversial of biological questions. It is very strongly maintained by an influential school of thought that acquired characters are not heritable, that offspring are not innately affected by the experiences of their parents (unless these have injured the reproductive organs), and have no inborn tendency to reproduce any change of colour, form, or habit which their parents may have contracted. This conclusion is certainly supported by a mass of negative evidence, showing that in particular cases peculiarities of form or habit contracted by parents are not passed on to their children. Circumcision has been practised by some races from remote antiquity without producing any hereditary results. It is indeed maintained by Dr. August Weismann, and other great authorities, that the reproductive organs are in origin and in functioning quite distinct from the body of sense and motion, and that bodily experiences can, therefore, have no effect upon the cells which these organs produce. But this theory assumes that impulses arise from organs, instead of organs from impulses; and it is based upon grounds which are in great measure conjectural. Its opponents have collected a large number of facts which indicate that in some cases acquired peculiarities have actually been inherited. In this uncertainty we may again remember that Life does not limit itself to a single line of action, and that it may in some cases permit what in other cases it refuses. It does not follow that acquired characters never become innate because it is proved that they very frequently do not

become so. Peculiarities of form or colour are commonly associated with peculiarities of locality or climate. All men who inhabit the tropics are of dark complexion: brilliancy of colour prevails amongst tropical birds and insects: it is in temperate regions that birds develop most tunefully their powers of song. We can hardly believe that in these cases environment has not influenced the course of evolution. Amongst those who deny that the influence of environment can originate variations there are some who admit that it may prepare for them—that the giraffe by striving to reach high branches may endow its progeny with a disposition to develop a longer neck. And it is indisputable that a change of environment may influence evolution by stimulating variation. It is under the artificial conditions of domestication or manuring that plants and animals “sport” most freely. During the cycles that are covered by the records of geology the surface of the earth has undergone strange transformations. Land has been submerged and re-elevated time after time; an ice cap has advanced over countries that are now temperate, has retired, and has advanced again; mountain ranges have risen and fallen like the waves of the sea. There have been no lack of changes to stimulate variation, and we may reasonably conclude that in former ages they occurred more frequently than the present condition of the earth might lead us to suppose.

Granting, however, that we can in some measure explain the occurrence of variations, or mutations, we are still confronted with a most difficult problem—the *spread* of these variations from an individual to a race, the development of a new species from single specimens which emerged from their own kind bearing new peculiarities.

If the variations were persistent "Mendelian" characters, and could not be obliterated in the course of breeding, they would still be limited for many generations to a very small circle; and, in cases where they did not endow their possessors with a positive advantage in the struggle for life, it is difficult to conceive how the members of this circle could increase so greatly as to drive out of existence the original species. If they were merely small fluctuations, of the type contemplated by Darwinists, they would be even less likely to spread, for reasons which have already been given. The chances of development would be greatly increased were the new characters associated with prepotency in reproductive power, and still more were individuals of the old type losing their fertility and tending towards extinction. Of the inhabitants of England, at the time of the Norman Conquest, a single pair of individuals, endowed with sufficient reproductive prepotency to transmit to their descendants the capacity of doubling themselves in each generation, could have been the ancestors of the whole of the present population—that is to say, could have spread any peculiarities which they possessed to the whole of the English people. But there is no evidence to show that "sports" are more fertile than normal individuals, or that their appearance marks a general decline of fertility in the species. Accepting evolution as the origin of species, but despairing of the discovery of the processes by which it has come about, we may be tempted to take refuge in the assumption that its course was preordained, and may be likened to the development of an individual from its embryonic stage to maturity. Were we able to observe only one stage of this development—an egg, for instance, after so many days of incuba-

tion—we should have no idea of the beginning or end of the process. So the evolution of species may be progressing by predetermined stages, which need more time for their detection than may be commanded by human observation. But amongst the considerations that may be opposed to this belief there stand the wastefulness of life—the creation of millions of living organisms which are born only to be destroyed in immaturity ; and the fact that evolution may be retrogressive—that species may descend the scale of life, as the tapeworm and the barnacle have undoubtedly degenerated. These considerations are hardly to be reconciled with the idea of a preordained scheme of evolutionary development, unless we concede that it may be wholly out of accord with our higher ethical ideas.

We are, however, aware of two forces, very different in themselves, which may have contributed to the spread of variations—the influences of environment, and the imitative impulse. There appears to be an analogy between the evolution of species and the development of civilization: in both cases novelties arise in individuals and spread to masses. The novelties of civilization—new mechanical inventions or artistic ideas, for instance—disseminate themselves by their suitability to peculiarities of climate or locality (which occasion a desire for them), or by the action of the propensity to imitate, which is one of the strongest of human instincts. If we assume that a chance variation may be in accord with influences of environment—which we may not comprehend but should not on this account rule out of existence—these influences may very materially assist its possessors in outnumbering their fellows ; and if, in some cases, the occurrence of a variation is actually stimulated by these influences, their

effects in spreading it would be still more powerful—they might, indeed, cause it to arise independently in several individuals. This would explain the curious rigidity with which many species of plants and animals are localized within particular—sometimes quite small—areas. We may be unable to trace, or to imagine, a connection between the circumstances of a place and some spots on a bird's or a butterfly's wing. But our ignorance, or incapacity, does not entitle us to deny the possibility of its existence. Within recent times a dark variety of the peppered moth (*Amphidasis betularia*), formerly very rare, has spread very greatly in the "black country" of the north of England. It seems probable that there are local conditions which favour it.

To suppose that variations have been spread by imitation may appear to be altogether fantastic. It recalls the success of Jacob in breeding ring-straked sheep; the story appears incredible, but not a few practical breeders believe that the colour of a calf may be affected by the colour of the cow's stall companion. Nature abounds with illustrations of mimicry, and we must not hastily conclude that an impulse to imitate could not work subconsciously, or that it could not disturb the tendency of the reproductive cells simply to repeat the growth of the preceding generation. Butterflies mimic other butterflies, even dead leaves, and are themselves mimicked by moths; caterpillars and other insects mimic twigs and foliage; there is a great tendency for creatures to take the colour of their environment; we subconsciously mimic peculiarities of manner in our¹ companions; families that migrate to a new

¹ One of the most effectively deceptive mimicries is that of a humble-bee (*Bombus agrorum*) by a fly (*Volucella bombylus*). These insects inhabit the same nest.

country appear gradually to modify their character, and even their features, so as to resemble their native associates. Mimicry, if protective, may, it is claimed, have originated in useful "sports." But it is not always protective; and of the curious resemblances which we find amongst insects, few would deceive a sharp-sighted bird. Mimicry appears, then, to be caused by an impulse, not to be the result of chance resemblances that have been stereotyped by the struggle for life. Why should living creatures mimic some of the peculiarities which they see about them and not others? We do not know. Children are exceedingly imitative, but they select for imitation sometimes one trait, at other times another.

One or two new species of flowers have been known to arise and establish themselves, without man's active interference, since the time when botanical observation commenced. But their distinctive peculiarities are of trifling importance, and no evidence can be discovered of the movement of evolution—as an actually working process—unless we assume that the changes that have occurred within historical times in the character of some bacterial diseases, indicate that some new species have sprung into existence amongst microbes. The great development of the present era of geology has been in the civilization of mankind; and we may fancy that Nature has stood still in astonishment at this—the culminating triumph of Life's activity.

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The changefulness of Life is represented in mankind by a definite instinct—the desire of variety, which is severely repressed by the bonds of habit, but has powerfully contributed to human

progress. Between it and habit there is constant antagonism, and a slight preponderance of one or the other marks the difference between the Liberal and the Conservative temperament. The manifestations of this instinct can be traced throughout the animal kingdom : it is the impulse which prompts so many creatures to change their homes—to migrate. The force of habit makes strongly for stay-at-home life ; yet at certain periods, or in certain circumstances, many kinds of animals are seized with a passion to adventure themselves in new surroundings. Swallows and snipe, for instance, are annually driven by this impulse enormous distances across ice-bound mountains and stormy seas. In most cases the impulse has results of advantage : stirred by it, birds avail themselves of food which abounds during summer in northern, and during winter in southern latitudes. Those which feed upon insects would perish during the lifelessness of a northern winter. But the instinct is sometimes a deadly possession. Swarms of locusts and butterflies will fly out to certain death in the ocean. The lemmings¹ of Norway periodically assemble in vast multitudes and travel westwards with no apparent object, those that escape death on the mountains not fearing it when they reach the coast, but swimming boldly out to sea. In the history of mankind the migratory impulse has been of incalculable importance : it has provoked desolating wars ; but it has maintained a connection between different peoples, and has been a potent influence in spreading culture. Without it races would have lived, as it were, in closed compartments, and we should not find that the primary discoveries of civilization—the use of fire, of the plough, of the loom, as well as many

¹ A small field rat (*Myodes lemmus*).

ancient superstitions—have practically become established throughout the world. The impulse may be deadened by long-continued habit: peoples who have settled down to the routine of agriculture are usually much attached to their fields and homes. But those who subsist by pasturing cattle, or by cultivating the land after a shifting fashion, or become hard pressed for food, are liable to be strongly moved by it. For uncounted centuries it has impelled the peoples of Northern Europe towards the Mediterranean: more recently it has urged them to establish colonies of their own across the seas. Nor has it always led the wanderers towards the superior comfort of a promised land. The gipsies have roamed northwards into a more rigorous climate and harder conditions than they experienced in their Eastern home. In the migratory instinct is seated the attractiveness of travel, and the impulse, hardly to be resisted by the most home-loving of English families, to go abroad, or to the seaside, once a year.

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We may perhaps find in this desire for change the origin of three very curious human pleasures—the pleasures of the ludicrous, of gambling, and of intoxication. In all of them an agreeable emotion is associated with sudden changes of mood. If instances of the ludicrous, in circumstances or in words, are analysed, it will be found that the essence lies in an abrupt alteration of mental attitude, which must not, however, be attended with the excitement that would be caused by any personal interest, and must not arouse any so serious an emotion as pity, shame, or indignation. This condition is essential. A passer-by slips and falls on the pavement. Our

amusement at the mishap depends upon the impression which his dignity and his humiliation successively make upon us : it would disappear altogether were he seriously hurt : it is not shared at all by the victim of the accident. " Her father was asleep in the library : her mother was dead, so she could count upon receiving the young man alone." Here we are suddenly taken from the idea of a siesta to that of a funeral, and, again, to the contemplation of a young woman's love affairs. It is supposed by the eminent French psychologist, M. Henri Bergson, that laughter, provoked by the ludicrous, has a purposeful value, being a means by which society corrects the abnormalities or eccentricities of individuals. But this theory does not appear to cover the ground. The question is not one of laughter, but of amusement : our laughter is only the expression of our amusement, and it is quite possible to be amused in silence.

The pleasure of gambling is no doubt associated in some degree with a desire for gain. But the typical gambler is rather prodigal than avaricious, and covetousness contributes but little to his excitement. The alternations of chance produce two strongly contrasted moods—that of winning and that of losing—and the prospects of the game arouse in imagination the changes in mood that would follow luck's vagaries. Change is thus of the essence of a gambler's pleasure : in this respect, chance resembles the ludicrous. For the gambler, however, the circumstances are too exciting to be funny : his personal interests are at stake. But you may often see bystanders smile when the changes of luck are particularly frequent.

Here, also, may be classed the pleasure which Oriental peoples take in litigation. During the course of a suit the imagination of the litigants

presents them with changing pictures of triumph and defeat. Personal vanity, it is true, enhances this excitement. But this would also be concerned were the rivalry one of ostentatious expenditure, and this would not be nearly as pleasurable as a contest in the courts. Variety, or change of mood, generally enters into the pleasure which we derive from games. It is certainly one of the attractions of golf. Games in which chance is the principal element have, indeed, little but this to commend them.

The pleasure of intoxication is of a more complicated nature. There enters into it the taste of the drug or liquor, the attraction of habit, and the relief of freeing oneself from the worries and mistrust that afflict introspective sobriety. But intoxication is above all things a change of mood—often, indeed, a series of changes which to onlookers may appear exceedingly ludicrous. The change is not always in the way of gaiety—not infrequently the reverse—and its attractiveness lies in itself. Some of the lower animals can seemingly appreciate it; and monkeys, and even birds, may contract a very strong liking for spirituous drinks.

CHAPTER III

SENSATION AND REACTION

By our senses we maintain some connection with our surroundings. Of the real nature of our environment we are profoundly ignorant ; but it contains our food—the material upon which Life exercises its changefulness—and to secure this we require not only percipient senses but powers of movement. The necessities of plants are less complicated. They feed upon inorganic substances, occurring in the soil, or in the air, which are widely diffused by natural forces, and generally will come if they are waited for. Plants have accordingly cast anchor in the ground, and have lost all but the elements of sensation. Animals must ordinarily seek for their food, whether it consists of vegetable substances or of the bodies of other animals. They have also to avoid the appetites of others. In this matter plants are helpless ; but they have in compensation a power of recuperation which enables herbage, however closely grazed, to restore itself. Animals, further, need senses in order to discover their mates, save in the rare cases when individuals are hermaphrodite. Moreover, without senses social life would be impossible ; and in the case of many animals, man included, a gregarious impulse has developed itself so strongly that death is hardly worse than to be ignored by others.

Our senses are popularly numbered as five ; but the appreciation of temperature which the skin possesses should probably be reckoned separately from the sense of touch. In some of the lower animals certain senses are demonstrably stronger than our own : we have no reason to infer that our senses are the only ones that might exist, and it seems likely that insects are endowed with some peculiar detective powers. The males of certain moths (*Bombyces*) will become aware of a virgin female when at least a mile away, and probably at a much greater distance : insects whose larvæ feed upon truffles will detect the presence of these fungi when two feet below the surface. Amongst mankind, individuals probably differ very considerably in the delicacy of their senses. Some are colour-blind, others deaf to the charms of music ; and it may be that the " joy of life " which seems specially to exhilarate some individuals and races, proceeds from a keener sensibility than is enjoyed by those who take a sober view of life's vicissitudes, or can discover in a fine morning only an opportunity of going out to kill something. But sense organs, however acute and however varied, are, it must be remembered, only *receivers* : they collect messages from outside ; but it is in the principal nerve centre—the brain—that these messages are translated into sensations. We are popularly supposed to hear with our ears, but the ears receive only rhythmical pulsations of air. The brain converts these movements into the sensations which we appreciate as sounds, just as the needle and drum of a gramophone convert the surface irregularities of the record into a strain of music. It is difficult to realise that when we touch an object with the foot the feeling of touch arises not in the foot, but in the brain. But so it is. A man who has lost a leg

may feel pain in the toes that he no longer possesses, if action in the brain should reproduce twinges that he associated with his toes before his leg was amputated. Our physical sufferings are then, so to speak, all mental, and we locate them in various parts of the body by inferences which are deceptive but are very useful. Pain that arises directly in the brain, in conditions of mental hallucination, may be as acute as when a bodily organ is physically affected. We should, then, think of sensations as created by the brain, not by the organs of sense; in this respect they resemble memories or hallucinations. Sensations are generally more vivid than memories. But we may at times be at a loss to decide whether a brain picture comes from the outside, or arises, as a vision, within us.

In the higher animals a sensory apparatus consists, in the first place, of some peculiarly modified tissue on the exterior surface of the body, specially adapted for the reception of outside impressions. Such are the rods and cones of the retina of the eye, the Cortian fibres which line the inner passages of the ear, and the nerve endings by which we gather the impressions of touch and taste. Secondly, it includes a nerve system by which the impression is transmitted to a point where it is converted into an impulse that flies outward to actuate a muscle. In its essential form this system consists of a sensory, or "afferent" nerve, a ganglion, in which this nerve ends, and a motor or "efferent" nerve proceeding from the ganglion to a muscle. By biologists of a materialistic way of thinking, the afferent nerve is pictured as causing a chemical reaction, or explosion, in the ganglion, and as in this manner setting free energy which is stored in the ganglion. But it may also be pictured as

releasing a catch which permits the starting of machinery that is actuated by an instinctive impulse. In the higher animals the ganglia are collected into the spinal cord or the brain; in the lower they form less complicated systems, sometimes very loosely connected. But we must remember that this elaboration of sense organ, nerve and ganglion is by no means essential. The microscopic protozoa, which are regarded by an evolutionist as his remotest ancestors, possess no organs whatever for sensation. They are simply small masses of nitrogenous jelly, so far as can be ascertained of like texture throughout, except for a small spot where there has been some sort of concentration into a nucleus. Yet all of them are sensitive to light and to touch: some of them can even distinguish blue light from light of other kinds. They can recognize their peculiar food, and certain of them construct the most beautiful little shells, the designing of which by a man would be taken to show much delicacy of conception. Plants are, of course, very sensitive to light; some of them, such as the sensitive mimosa and a species of balsam, violently resent touch, and two species (*Drosera* and *Dionæa*), the leaves of which are able to digest captured insects, exhibit in divergent manners very delicate sensibilities that are of use to them in distinguishing flies from other objects. A study of natural history shows us, in fact, that sensation is a property of life, not a function of any description of organ.

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Did our sensory impressions originate on the exterior surface of our bodies there might be some *prima facie* ground for the idea that they represent things as they are—that there exist, in fact,

such things as a red colour, the twang of a zither, or the scent of honeysuckle. But generated as they are in the brain—within a portion of our body which is secluded from the outside world by a bony covering—there is no possibility of their being other than symbolic. And science assures us that this is the case. The results of its experiments, so far as they are discovered by sight, are indeed misrepresented; but they exhibit certain relations in time and space, in the nature of similarities, dimensions and sequences which conscious reason enables us to appreciate, to group under heads and rules, and to predict by calculation. Their occurrence in accord with our predictions endorses the rule to which calculation has led us. So it is demonstrated by science that what we term light and sound are merely vibrations of extreme rapidity; that our environment is really dark and silent, does not give light to the eye or sound to the ear, but owes to the brain its illumination and its resonance. It seems, moreover, that the substances which appear to resist our touch in solidity are also in energetic vibration, and that, in fact, our surroundings may be likened to the whorls and eddies which we see when we press hard upon our closed eyelids. Out of this confusion our brains conjure up for us shapes and colours, sounds and solidity; but these impressions resemble actuality no more closely than the notes of a musical box resemble its machinery. We live in the midst of the Unknown.

Moreover, our sensory impressions are in themselves so irregular that they would be useless were they not corrected by a mental process of sensory adjustment. We see what we pronounce to be a circular table; but we do not see it as circular unless we are immediately above it. From any

other point of view it appears to be more or less oval. We judge it to be circular, not from its actual appearance but from our memory of previous similar impressions of it, coupled with experiences of touch : we *infer* that it is circular, although to our sensation it may appear oval. So also with colours, the actual appearance of which varies very greatly according to the amount of light that falls upon them and the direction from which it falls. Our real guide is not sensation, but perception, which is sensation adjusted in the light of previous experiences. Not only, then, is the brain, as we have seen, the origin of sensation, but it needs processes of the brain to render sensory impressions useful to us. Practice enables us to adjust with instantaneous rapidity. But babies that reach for a bright object, regardless of its distance, prove that the faculty of adjustment rests upon experience. Having made these adjustments habitually, we can hardly disembarass ourselves of their guidance. It is quite difficult to draw things, not as we infer them to be, but as they actually appear : children's pictures, primitive art and oriental art all aim at truth by representing not the seen but the inferred. It requires, indeed, an artist to set down the simple impressions of the eyes. These are in perspective, and those who look at the pictures are convinced of solidity by their own powers of inference.

Our sensory impressions need, then, to be adjusted before they will guide us trustworthily, and we correct each one of them, as it comes, by investing it with attributes, such as roundness or solidity, which it does not appear to possess, but which we infer from the memory of previous impressions and tactile experiences that it does possess. In other words, the key to our impressions is a stock of memories and ability to infer

from them. This ability is instinctive, and is born with us. But we have to acquire our stock of memories for ourselves. Lower down the scale of animal life—amongst insects, for instance—sensations do not need to be adjusted by inferences from experience: the necessary connections are made by instinct, and the young come into the world fully equipped to meet its difficulties.

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Of what nature are the memories by which we adjust our sensory impressions, and how do we perceive them? They are repetitions of former sensory impressions, called up by the brain, and are perceived by us by some faculty which may be likened to sensation that is independent of the special sensory apparatus of nerves and nerve-cells. We look inwards as well as outwards, or rather, we observe, as it were, a double cinematograph show, in which two sets of pictures are unrolled, the one resulting from sensory impressions, and derived from the outside, the other resulting from the repetitive faculty of the brain, and evolved by it in association with, and to correspond with, the sensory impressions. When, as in children and backward races, the memorial impressions of the brain are very vivid, they can hardly be distinguished from sensory impressions, and hallucinations result. We know on what little excitement children will see phantoms at night. Our grasp of what happens outside us depends upon our ability to distinguish the one set from the other. They are distinguished in science by the names of "objective" and "subjective," the former coming from sensation, the latter from memory.

It may be observed here that the memory may

be stimulated and directed by sensory impressions, not only of things, but of symbols of things. Such are words, whether spoken or written. The word "sea" is a symbol: to one who had never seen water it would mean and could mean nothing. But, associated in the memory with a large expanse of water, it calls up this idea, when seen or heard.

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By our sensory equipment of nerves and nerve-cells we receive impressions not only of things that are outside us but of the movements and condition of our own bodily organs. If we lift an arm we have an impression of its movement which is as clear as any impression that we derive from touch. We have, moreover, an impression of the amount of force exerted by us in, for instance, lifting a weight: we remember this impression, and associate it with objects of similar size. We are, accordingly, much surprised if an object, which appears from its size to be heavy, proves to be light when we essay to move it. We also have some impressions of the condition of our internal organs; they may be associated with very definite feelings of pleasure or pain, but are ordinarily vague and uninformative. A man has but a very indistinct idea of the hidden processes upon which his life depends.

In fine, by our nervous organisation we receive sensory impressions of things that are outside us, of symbols of these things (the most important of which are words, heard or read), and of the movements of our own bodies; and, in some mysterious fashion, we are also aware of mental occurrences—of memories and thoughts—which have been generated by sensory impressions of the past.

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From the character of the typical sensory organ—a nerve ganglion to which two nerves are attached, one for bringing stimuli of sensation, the other for carrying away impulses of motion—it would appear that the movement of a muscle is the necessary and inevitable consequence of the receipt of a sensory impression. And there is reason to believe that this is so, and that every impression is, so to speak, a starting lever which releases muscular action. Experiments with human subjects, in which the beating of the heart, or the expansion of the lungs, is carefully registered, indicate that sensory impressions which, so far as consciousness can detect, do not stimulate the least muscular reaction, are, as a matter of fact, accompanied by it. The sight of a red colour, for instance, is found to quicken the motion of the heart in some persons. We have then experimental warranty for the expression “seeing red.”

A sensory impression that affects the brain, and is not localized in the instinctive nerve system that directs our internal mechanism, is, however, rarely a single occurrence: it generally sets free several impulses—and a stream of memories—that conflict with the impulse that is primarily aroused, and, it may be, with one another. A terrifying noise makes us start: it would make us run were hurrying not inhibited by a feeling of shame, by a suspicion that we might be meeting the danger, or by knowledge that the noise as a matter of fact meant no risk to us. Hence, in the majority of cases, our external behaviour is not guided by primary instinctive reactions, but is the product of a struggle between a number of impulses. Such an arrangement is obviously inconsistent with

high practical efficiency. It involves hesitation and the possibility of error. But it possesses the transcendent advantage of affording opportunities for the exercise of choice, that is to say, for the play of the will. It is, however, fortunate for our health that the action of the heart, the stomach, and other internal organs is governed by a separate nerve system that is directed by instinct in independence of the brain, and is not liable to these disturbing complications. With however great an effort we cannot help winking when the eye is suddenly threatened. Nervous impulses such as these (styled "reflex") are practically mechanical: the ganglia which actuate them lie mostly in the spinal column, and operate without reference to the brain. We can, by practice, acquire artificial "reflex" (or, as they are termed, "ideo-motor") capacities: the complicated movements required in talking, eating, or playing the piano can be effected subconsciously, at times when the brain is occupied with other matters. Skill was acquired by conscious effort in which the brain took place, but, with the attainment of dexterity, the nervous process has become, so to speak, short-circuited, and is not interfered with by impressions, or thoughts, which would distract a beginner.

Ordinarily, however, so far as our conscious lives are concerned, our impulses are liable to inhibition: we may be distracted by a desire for drink, but we may resist the impulse if in habit, shame, sympathy for others, or solicitude for our own health, we can find over-balancing considerations. An outcry of "fire"—an impression caused by a symbol—will drive the audience in a theatre into a panic. But a speech by the manager may possibly control them.

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So far, we have been considering the mechanism by which man and the higher animals maintain a connection with their environment. It includes instinctive (reflex) and ideo-motor systems which, when started by the touch of an impression, act promptly and accurately, and are not interfered with by the functioning of the brain. It also includes a system which, connected with the brain, is swept by a number of conflicting influences. As we descend the scale of animal life, the directing authority of instinct spreads from the internal functioning of the body to its external behaviour : conduct is linked more closely to primary sensations, and there is a narrower field for the exercise of choice. An impulse that is set free by a sensory impression is so directed by instinct as to energize a definite series of actions, often of a very elaborate character, which are accurately performed without previous experience. The marvellous regularity and complexity of this directive force is typically illustrated by the life history of insects. A worker bee, immediately it emerges from the pupal stage and sees its surroundings, sets itself to a complicated process of working in wax, with what seems to be practised dexterity and trained intelligence. It is born an efficient mechanic, just as our hearts and lungs are, from the moment of birth, capable of exercising their functions. Birds' nests illustrate very familiarly the possession of similar inborn skill in higher orders of the animal kingdom. We are probably correct in assuming that the functioning of the internal organs of the body, the growth of the body and the development of the embryo are all guided by this process of instinctive direction.

We are profoundly ignorant of the nature of this wonderful directive force. Its impulses do not

pass through the brain, and we are not conscious of them, and cannot perceive them. Its origin has been attributed to the faculty of memory; it is supposed to represent a talent which has been won by the trials, failures, and successes of remote ancestors. But it displays a mysterious complicated acuteness for which this hypothesis can in no way account. The female *Scolia*—a giant wasp of the Mediterranean—burrows underground, like a mole, until she comes across the fat white grub of a rose-beetle (*Cetonia*). By a sting accurately directed at the meeting-place of the nerve ganglia she completely paralyzes it, leaving it alive but motionless. She lays her egg upon its abdomen, so placed that the young worm, on emerging, will find its mouth against tissues that may be eaten without killing the grub—will, in fact, discover nourishment which to a mammal is afforded by its mother's breast. A peculiarly long snout enables it searchingly to explore the body of its victim. So it feeds during the fortnight of its larval stage, but, guided by such discriminating skill as the most practised dissector could not command, it scrupulously avoids the nerves and vessels, so as to spare the grub's life while draining it of its substance. Did the grub die, the worm would die also, for experiment has shown that dead tissue poisons it. Here instinct displays not only its passionless cruelty, but its mysterious insight and its extraordinary skill. Could we bring ourselves to believe that an insect can pass on its recollections of fortuitous successes as an inheritance to its descendants, we should be no nearer an explanation. It may possibly be contended that the wasp may have discovered by accident, or by trials, that the grub was useful, that it could be hunted by burrowing, and might be paralysed

by an accurately directed sting. But it seems wholly unreasonable to pretend that by chance or experiment the worm could have acquired its marvellous skill in dissection, or that a complicated chain of events, affecting the behaviour of two generations, could have been elaborated by casual or tentative experience. The fascinating pages of M. Fabre support this illustration by hosts of others, which show that, even if habits may in some cases be inherited, instinctive behaviour is too elaborate to have been derived from them. The various complexities of instinctive conduct must have originated in such mutations, or "sports," as have produced the different species of plants and animals. And, after all, its manifestations are not more wonderful than the instinctive functioning of our vital organs.

§

A nerve cell is sensitive to an impression and exhibits a reaction. The behaviour of a photographic plate under the action of light is, so far, precisely similar. But in the cell these processes appear to be attended by something that is lacking in the plate—by a feeling of "awareness" or "consciousness." To some this will appear a monstrous hypothesis; it invests a nerve cell with attributes that are peculiar to the brain. But the brain is but a mass of nerve cells, and must derive its power from its constituents. During sleep the brain is quiescent: if the finger of a sleeping person is pinched, it is sharply withdrawn although he is not awakened. This, it may be urged, is a purely automatic action, and does not prove that any awareness arose. But the pinch may move the sleeper to dream that a

snake has bitten him. It must then have awakened an under-current of awareness, or consciousness. Again, if a patient sees the surgeon's needle approach his eye, he cannot by any effort prevent himself from winking. Drop in the eye a little cocaine. This renders the touch of the needle painless, but produces no awareness of this in the brain. Yet the patient, before he has actually discovered that the needle will not hurt him, will, unwinkingly, permit it to come up to the eye's surface and touch it. He must, apparently, be influenced by some local feeling of consciousness in which the brain has no part. Minor derangements of the internal organs of the body which do not make themselves apparent to the consciousness of the brain, will, nevertheless, be felt, and will influence the mood in which, for instance, we come to the breakfast table. Our views of life, as we awake of mornings, depend very often upon happenings within us that have escaped conscious detection. Hypnotic patients not infrequently exhibit the most extraordinary shiftings and subdivisions of consciousness. Not only do they appear at times to change their personalities; on some occasions their behaviour can only be explained on the supposition that two separate centres of consciousness are operating within them, one of which may be localized in some part of the body outside the brain. Thus, in one well-known case, Professor William James was persuaded that the patient had developed a separate consciousness in one arm. There are then good reasons for concluding that consciousness, or awareness, is not monopolized by the brain, but pervades our bodies and may very well be possessed in some degree by each nerve cell. In the brain there is a concentration of consciousness; but there exists also a diffused consciousness which, under the

name of "sub-conscious self," has of recent years been the subject of much discussion.

If awareness, or consciousness, is possessed by each nerve cell we cannot deny it to those primitive creatures which are able without nerves to exercise nervous activities; we must, in fact, admit that it is one of Life's characteristics. Where, as in plants, living activity has been cribbed by swathing upon swathing of lifeless matter we should expect to find it nearly atrophied. Yet we may believe, with some reason, that a flower *feels* being picked, although dimly and without touch of pain.

§

The arousing of consciousness, or awareness, by a sensory impression, or by a recollection, is usually accompanied by the feeling of an emotion: the sight of blood disgusts us: we are ashamed at the recollection of a misbehaviour in society. The awareness that is aroused need not be the concentrated consciousness of the brain. It may be the diffused consciousness that is styled "sub-consciousness" by some writers; we may feel terrified in our dreams at times when the conscious brain is dormant. These emotions may be pleasurable or painful. But they are not all of like origin. Pleasure and pain may be the direct and simple products of sensations, or of recollection of sensations; but they may also arise from satisfying or not satisfying the craving of an instinctive impulse. To the first class belong such feelings as are aroused by the tastes of turtle soup and of castor oil, by concords and by discords of sound and colour. In the second class fall such emotions as the pleasure of satisfying hunger and thirst, the pain of suffering them, the pleasure of success in social life, the pain of social failure.

Both sets of feelings have played a leading part in evolutionary and ethical theories : they have, it is said, served us as guides for the avoidance of what is harmful and the embracing of what is useful, in the struggle for life, and in our conscious behaviour. These theories assume that the useful invariably excites pleasure and never pain, and that the harmful invariably excites pain and never pleasure. This assumption appears to outrun the facts. Generally, it is true, we eat wholesome food with pleasure, and dislike things which would disagree with us. But all human likings are certainly not to be classed as beneficial : some are indeed harmful beyond doubt, such as the passion for intoxicants or for gambling, and the depraved refinements of lustful desire. It is not only man's tastes that may be perverted. Sheep and partridges may become exceedingly filthy feeders : a New Zealand parrot has within recent years become carnivorous. There are plants, such as Venus's Fly-trap (*Dionæa*) and the Pitcher-plant (*Nepenthes*), which capture flies and feed upon them ; but they appear to flourish equally well when this diet is denied them. The smell of putrid fish is to most men disgusting : yet to millions of mankind fish in this condition is an enjoyable article of diet. Many of our likes and dislikes are unconnected with utility or harmfulness. Why, for instance, does the touch of slime repel us, the squeaking of a slate pencil set our teeth on edge ? Why are some persons uneasy if a cat is in the room ? Why are women so commonly frightened of a mouse ? An instinct or a feeling which interfered with the efficiency of an organism, would generally be eliminated in the course of evolution ; but should, in the exuberance of Life's activity, instincts or feelings arise which are neither useful nor harmful, which may

be compared with the extraordinary plumage and colours of certain birds, the struggle for life would leave them unobliterated. We may, then, hardly affirm that pleasure or pain are evidences either of design in our creation, or of the practical efficiency of the evolutionary process. Pain leads us, in some cases, to avoid the harmful—to withdraw a foot when it is being crushed. In other cases it is merely an irremediable affliction : we cannot voluntarily dispel a headache. Pleasure and pain cannot logically be classed as impulses to action : for an action must be performed before we can become aware of the feeling which it will cause to us. And we have already seen that action, in its essence, precedes emotion. But they are of immense importance in the formation of habits, and in swaying the hesitating resolutions of the will. We must confess that their interference is often harmful. How many vicious habits does man not owe to the pleasure of vice !

CHAPTER IV

INSTINCTS

THE body of an animal may be likened to an elaborate piece of clock-work which is driven by a number of powerful main-springs lying concealed within it. The surface of the machine bears a number of little starting levers, each adjusted to respond to the slightest touch and to start the machinery by releasing a main-spring that is connected with it. Some of the main-springs are always, so to speak, wound up : an unexpected crash will, for instance, make us start at any time. Others become tense only at intervals : if one is not hungry the sight of food is not attractive. Subject to this qualification an impulse is directly and inevitably aroused by the sensation that is connected with it. So considered, a living creature closely resembles a machine ; and this is the condition of an animal, such as an insect, which is guided by directive instinct, when it is acting under the influence of its instinctive guide. It also represents the process by which our internal organs perform their functions. The stomach secretes its digestive fluids immediately it is touched by food.

But in the case of animals that are endowed with memory we must expand our illustration. An impulse may be aroused by a recollection as well as by a sensory impression. The sight of a rat

will set a terrier in pursuit : he will growl in his sleep if he dreams of the experience. Memory should, then, be represented in the machine by another set of starting levers, separate from but linked with those that represent sensation. In an animal that possesses memory, sensory impressions always arouse recollections, and have thus the effect of releasing not single impulses but assortments of impulses ; and its conduct is, accordingly, not the simple and direct result of sensation, but is determined by the predominance of one impulse, or of a certain mixture of impulses, over a number of competitors. The winning impulse, or assortment of impulses, gains the mastery on some occasions by its intrinsic forcefulness ; on other occasions because it is reinforced by an instinct which was in dominance at the time it was aroused, because its influence has been swollen by habit,¹ because it is endorsed by reason, or because it is selected by the will.

This view will be rejected by many of the highest authorities. They maintain that each starting-lever—or nerve-cell—is supplied with a stock of energy of its own ; that it is equipped, so to speak, with a little charge of explosive which is fired when the nerve is touched, and propels the machinery. They maintain, in fact, that the nerves not only start the machinery, but drive it. Indisputably the nerves are furnished with supplies of explosives, the replenishment of which is one of the functions of the digestive, respiratory and circulatory systems of the body. The theory, accordingly, gains some corroboration from a scientific fact. And to minds of a materialistic tendency it is more attractive than a hypothesis which postulates the existence of a number of

¹ We shall see, later on, how potent is the effect of habit in controlling the conflict between antagonistic impulses.

intangible impulses : it reduces the actions of the body to a mechanical regularity, renders them, indeed, predictable. Yet, if we carefully examine so much of our behaviour as is capable of being examined by us, so much, that is to say, as is regulated by, or is connected with the action of the brain, we shall find much that it is impossible to reconcile with the notion that the driving force of the body is localized in the nerve-cells. Respecting the action of the " reflex " nerve system (which regulates the functioning of our internal organs) we cannot feel confident : it acts out of consultation with the brain and lies, therefore, beyond the range of our observation. But, this system apart, the behaviour of our bodies, if introspectively examined, is seen to be governed, fundamentally, not by sensory impressions or memories, but by the powerful impulses that have been compared to main-springs. A mother is not affected by the sight of another's child as by the sight of her own : she regards one with the maternal impulse, the other without it. The immediate cause of a visit to Switzerland may have been the chance perusal of a volume of Baedeker ; but its fundamental cause lay in curiosity or a desire of change—an impulse to travel. Lacking this impulse all the Baedekers in the world would not have tempted me. My efforts in writing this book are started by daily recollections of the undertaking ; but they have their origin in a wish to employ myself, in ambition, curiosity, or that strange desire to cause pain to others that manifests the instinct of cruelty. A pianist, who, relying upon her " ideo-motor " aptitude, executes a brilliant piece of music while thinking of a love affair, is subconsciously guided by her sensations or memories of the notes ; but the reason for her playing at all must be sought in

some impulse—in a desire to please, or a propensity to obey. Her playing, in the automatic character of its execution, precisely resembles the movements that are guided by our “reflex” nervous system, or the instinctive behaviour of an insect, and we appear to be quite justified in assuming that in these cases also, behind the elaborate functioning of nerves and nerve-cells, there lies an impulse which dictates the general line of conduct. The action of the stomach that seems to be stimulated by the touch of food is driven by the impulse of self-preservation; the bee, in fashioning its comb, is guided by a special directive instinct, but is *impelled* by its constructive, or reproductive instinct. This view is directly opposed to the very general hypothesis that life may be defined in terms of chemical compounds or of bodily organs. But it is very strongly borne out by the fact that the most elementary kinds of plants and animals lead a complicated life of sensation and reaction without the assistance of any organs whatever.

§

It is desirable to insist again upon the distinction that is drawn, in this analysis, between two very different kinds of instinct—the one a set of *impulsive*, the other a set of *directive* energies. It is unfortunate that the term “instinct” is associated with both of them. Impulsive instinct urges us along certain general lines of action: thus the impulse of self-preservation prompts us to eat when hungry, to run away when in fear; the impulse of reproduction prompts us to protect our young. Directive instinct is concerned with particular methods of action: thus the directive instinct of the horse limits its diet to herbage and grain; that of the bee enables it to construct

hexagonal nurseries. The general, indefinite, character of impulsive instincts renders them ineffective unless they receive guidance in detail : they are aroused by memories as well as by sensory impressions : they present themselves in assortments : there arises accordingly, a period of hesitation ending in a choice. Directive instincts, on the other hand, act simply and inevitably. Their influence is hardly apparent in man, but it increases as we descend the animal kingdom, until, amongst the lowest organisms, it becomes nearly all-embracing. But in no living organism does its dominion appear to become quite absolute : we may notice signs of hesitation amongst the humblest of microscopic creatures.

Instincts, whether impulsive or directive, are inborn, and are part and parcel of an organism's being. A living creature may, indeed, be defined as a bundle of innate impulses with machinery for putting them into action. This definition, it may be objected, ignores the influence of reason. But reason, as we shall see, is itself developed from an instinct. Obscured though it be by many anomalies, we may discern a tendency towards uniformity in the impulsive instincts of all living organisms, and in the directive instincts of each great class of the animal and vegetable kingdom. This illustrates the solidarity of Life—the fact that all living creatures are, in a degree, blood relations.

§

We have seen that impulses are most commonly set free by sensory impressions or recollections. A newly hatched chicken is stimulated to drink by the touch of water. Acquisitiveness is excited by the sight of money. The sound of music arouses, in many people, a desire to dance, or to

beat time. A lover's thoughts are moved by the sight of his mistress, or by the recollections that are awakened by a letter from her. In some cases an impression arouses a single appropriate impulse: a loud, unexpected sound will always make us start—the first step of a movement to escape. But, generally, sensory impressions or recollections have the effect, as it were, of starting a complicated arrangement of machinery, in which a number of impulses are set free to act in combination or in opposition. The result will depend very largely upon habit, or upon the mood we are in at the time, that is to say, upon the effect that has been produced by preceding impulses. The crying of an infant may at one time move us to pity, at another time to anger. So the sight of a friend may, on different occasions, evoke feelings of kindness or of impatience.

Impulses are also released by the tendency to imitate. A chicken is led to peck by the sight of its mother pecking: it may be stimulated by tapping with the finger, or a pencil. Noise impels a canary to sing its loudest; dogs bark when they hear other dogs. The cruel feelings which are gratified by a bull-fight may be evoked by the excitement of the surrounding spectators. We are stirred by fashion to change the manner of our dress. Self-control is most strongly inculcated by example—by a practical stimulus, that is to say, to our imitative faculty.

We have compared instinctive impulses to main-springs that are released by the touching of a catch. In some cases they are set to a time, like an alarm-clock, and are released automatically on the expiry of the period. The growth of an individual, from its first embryonic stage to maturity, is controlled by a number of impulses that act at definite periods and in a definite order.

A certain number of days determines the life of a caterpillar between its emergence from the egg and the spinning of its cocoon. Many migratory birds are extraordinarily punctual in the dates of their departure, and cannot be tempted to outstay them by however genial weather. A newly hatched chicken will attach itself to the first creature that comes into its impressions, be it a hen, a dog, or a man; but if it be kept isolated until some days have passed, it will fly in terror from its own mother. Certain sexual affections are periodic in their occurrence: the sexual instinct declines with advancing years. Life is itself an illustration of timing: however cherished, it can endure only for an appointed period.

§

The liberation of an impulsive instinct is sometimes accompanied by an emotion which brings its action before the observation of consciousness. We are impelled to run from a terrifying object: at the same time we experience an emotion of fear. But there may be impulses without emotion. We are quite unconscious of those which order the functioning of our internal organs, and we are also unconscious of the impulses which underlie such ideomotor actions as speaking, eating, or walking. These do not affect the brain. Impulses are emotional only when they touch the brain. We are consciously impelled to strike an aggressor: we have a feeling of anger which makes us aware of the impulse. This statement may appear to invert the order of events; according to common judgment the feeling of anger develops before the impulse to strike—is, in fact, the cause of the latter. But this impression is incorrect. If suddenly attacked we strike out automatically, and the emotion of anger does not arise until we

have had time to apprehend the situation. So fear is the accompaniment of a movement to run away; hatred, of a movement to kill. Fortunately for the regularity of our lives, the development of these instinctive movements beyond a rudimentary stage is liable to a triple check or inhibition. Reason may intervene to strengthen an opposing instinct: we may refrain from striking because we fear our antagonist as well as hate him. Habit may intervene: we do not run because we are disciplined to stand firm. And, thirdly, we may consciously control ourselves, or "pull ourselves together": we do not run because we make up our minds not to do so. The conscious, or deliberate, control of an instinctive impulse takes time to develop itself, and is a strain upon our capacity. But by habit we may reinforce a virtuous instinct which will assist us in overpowering one that is vicious. It is habit that preserves our lives from the frivolity and indecency of the brutes.

It appears, then, that we should believe that action precedes emotion, that we feel because we are moved, and do not move because we feel. An instinctive impulse is an impulse to action and, however strictly inhibited, produces some movement, be it nothing more than a slight trembling of the muscles or a quickening of the motion of the heart or lungs. The movement is generally too slight to be apprehended, and hence we commonly style our impulses by the names of the emotions which accompany them: the impulse to fondle is called "kindness," the generative impulse "lust." The strength of an emotion may be increased by uninhibited movement: when a crowd begins to run fear grows into panic. It follows, then, that we can control our emotions by controlling our actions. Are

not respectful feelings stimulated by respectful manners? Those who wish to stir the village labourer to independence bid him not to salute the parson and the squire.

We class our emotions as pleasurable or painful according as they proceed from satisfied or dissatisfied impulses. Pleasure and pain may also, as we have seen, result from sensations that are unconnected with impulses—as, for instance, from the taste of chocolate or the smell of sulphuretted hydrogen; and we may more conveniently use the terms “happiness” and “unhappiness” when we are concerned with the agreeable or disagreeable feelings which accompany satisfied or dissatisfied impulses. Generally, the satisfaction of an instinct is exhilarating: its obstruction causes uneasiness or irritation. We subconsciously experience an agreeable sense of comfort when our internal organs are functioning properly; irregularities produce a mood of depression. We give special names to feelings of happiness and unhappiness that proceed from particular impulses which are satisfied or baffled: possession produces joy, bereavement, sorrow, failure regret. The happiness of gratified egotism is termed pride; shame is its reverse. The expected happiness of satisfying a particular instinct reinforces its control over our conscious life by influencing our choice when various instincts are competing for mastery. But it does not follow that it will influence us beneficially. Happiness may be obtained by the satisfaction of impulses that are exceedingly injurious to the individual and to society.

§

Our behaviour is, then, influenced by pleasure and pain, happiness and unhappiness. Are these

emotions in themselves not sufficient to direct our actions? If so, why should we complicate the study of man by supposing him to be actuated by cryptic impulses? There is a fourfold reply to this objection. In the first place, pleasure and pain—unless the meaning of the terms is distorted—will not account for numberless peculiarities of behaviour. What pleasure, in the proper sense of the word, is there in self-sacrifice, cruelty, kindness, or asceticism; in venerating a king, or in deferring to a majority? The pleasure, it may be replied, of satisfying an impulse. But this concedes the existence of impulses. Secondly, these feelings do not affect the current of our sub-conscious life, our reflex and ideo-motor actions and the all-important functioning of our vital organs. These must be guided by forces which arouse no emotions, and we can hardly suppose that these forces cease to act upon our conscious life. Thirdly, when opposed to a masterful impulse, pleasure and pain may not move us at all. Human behaviour abounds in instances of absolute disregard of physical pain. What will not be endured by a mother's love, a soldier's courage, the self-repression of an ascetic! Finally, pleasure and pain cannot be *original* guides to behaviour, since until the consequences of an action have been learnt by experience or instruction, we cannot know whether it will give one or the other. A child will heedlessly grasp at a wasp. Our feelings most certainly influence our conduct: memories of them persist, actual or symbolic,¹ and move us to repeat or avoid an experience. That is to say, pleasure and pain, while not original impulses, are powerful stimuli to the formation of habits.

¹ That is to say, memories of what we have been told about them.

§

We must, however, admit that the pleasure and pain that spring from our sensations, the emotions that accompany the liberation of impulses, and the happiness or unhappiness of satisfaction or the reverse, play the part of impulses in so far that they produce very decided muscular reactions—may, perhaps, be regarded as *reflected* impulses. These expressions of feeling most commonly show themselves in the muscles of the face, but they may stir certain glands, and not infrequently extend to the whole of the body. Smiles and laughter are evoked by pleasure of sight or hearing, by happiness of mind, and by the satisfying changes of mood which are brought about by the perception of the ludicrous. Little children round a Christmas tree show their delight by ecstatic jumping. Some of the expressions of pleasure and pain are equivocal, and may arise from either of these feelings. Tears, trembling, and blushes are generally associated with pain: but they may also be caused by overpowering happiness. The *emotions*, on the other hand, provoke each a peculiar facial expression of its own. The gamut of emotions may accordingly be illustrated pictorially; we easily identify facial expressions of greed and curiosity, vanity and shame, love and hatred, ecstasy and self-restraint. We may hardly believe that all expressions of feeling have been of practical usefulness in the evolution of man; indeed, many of them appear more likely to have impeded than to have assisted him in the struggle for life. But we are by no means obliged to assume that they owe their existence to any utility. If they are neutral—neither advantageous nor injurious—they will resemble multitudes of other capacities which we may observe in the living creatures around us.

So long as they were not positively harmful they would not be eliminated by the stress of competition.

It is contended by some psychologists that expressions of feeling are actually the causes of the mental states which they manifest—that we are glad because we laugh, ashamed because we blush, envious because we sneer, and angry because we tremble. This theory is difficult to sustain, and is in conflict with the fact that the same reaction—a blush for instance—may arise from either of two different feelings. There are believers in the idea that a cheerful disposition may be maintained by keeping a smiling countenance. This may be true: memories of a feeling may no doubt be recalled by the muscular reaction which ordinarily expresses it. And we may unhesitatingly believe that emotions and feelings are enhanced in influence by being muscularly expressed, just as panic may be increased by running, and courage by the bracing of self-control. Expressions of emotion may reinforce emotion, although they are its accompaniment, not its cause; enjoyment may be increased by laughter, although one may enjoy with an unsmiling face.

The expression of feeling is common to all the higher animals, and generally follows the lines that are instinctive with mankind. Anger may be shown by the lips, affection by the eyes, pleasure and displeasure by the voice, joy by spasmodic movements of the body. Birds tremble in the ecstasy of song. Dogs, like children, jump for joy: there are those that can smile, or will, it is alleged, shed tears of grief.

We must not confuse with these spontaneous reactions the behaviour which is accepted by our community as the proper means of expressing

approval or disapproval, respect or contempt. Clapping and hissing are purely conventional. We salute a friend by offering him vestiges of homage : the Tibetans salute him by protruding the tongue.

§

Our instinctive impulses are so numerous and so varied that it is exceedingly difficult to group them into general classes. And the difficulty is increased by our desire to find a useful purpose in everything. Those who hold that evolution has been directed by the struggle for life are generally as persuaded that all things have evolved for good as the most convinced believer in Providential intervention. Yet a dispassionate survey of Life's activities will hardly find justification for so comforting a belief. What, for instance, is the use of lust that is not limited by the requirements of reproduction, of appetite that outruns digestion, of gratuitous cruelty, of kindness that disregards merit, of the impulses to dance, and to practise asceticism ? Many, perhaps most, of our instincts are of practical utility—more, no doubt, than may appear to possess it at first sight. But there are many that are out of all connection with the stern conditions of the struggle for life. From its point of view they are superfluities. If harmful to their possessors they will be eliminated ; but when we reflect upon the vast number of species that have become extinct in the past, a suspicion arises that injurious impulses may have survived until they brought a race to destruction. Did not the giant lizards of the Mesozoic age, the giant mammals of a period less remote, outgrow their food supply ? Does it not appear that there may be glands and outgrowths in the human body (such as the appendix) which are not merely useless but injurious ? If superfluous impulses

are harmless, they remain as witnesses to the exuberance of Life's eccentricities. Amongst these unpractical impulses the æsthetic are conspicuous. We are accustomed to regard them as man's peculiar endowment. Not so. Can we deny an appreciation of the æsthetic to a bower bird, or to a robin, singing, when love instincts are dormant, on a chilly November afternoon?

§

Let us now attempt to formulate the heads under which instincts may be classified.

We may, in the first place, form four groups of impulses that are of essential practical value to organisms in their *individual* and *social* lives, in their function of *reproducing* their species and in their *provisions* for the future. Next come, in four more groups, impulses that from the utilitarian point of view are superfluous, and are, indeed, if classed in two pairs, antagonistic to one another—*kindness* (or an impulse to fondle), *cruelty* (or an impulse to hurt), *æsthetic* impulses which induce self-abandonment, and *ethical* impulses which induce self-control. There remain two compelling guides to behaviour, *directive instinct*, and the processes which constitute *reason*.

INDIVIDUALISTIC.—In this group fall the impulses that stimulate and direct the development and growth of the body and the functioning of its organs. These arouse no emotions, and are therefore not apprehended. Self-preservation—the primary and most imperious object of external behaviour—is, on the other hand, actuated by impulses that are generally emotional—*hunger* and *thirst*, *chilliness* (the impulse to maintain the temperature of the body), the *hunting* passion,

pugnacity, *ambition*, or *emulation* (the impulse to excel), *secretiveness*, and *flight* (accompanied by the emotion of fear). *Curiosity* is necessary for the discovery of food, and also to protect oneself from enemies. It is strong in defenceless animals, such as deer and sheep, and is abnormally developed in some birds and mammals. In man it may be allied with reason and the provident impulses, and in their company may guide him to the discoveries of science and mechanics, and to the speculations of philosophy.

The essence of these individualistic impulses is selfishness, and they—together with the emotions that accompany them—are condemned by society, since they are not concerned with the welfare of the community. The selfishness of individuality is in itself rather a cold-blooded antagonism to others than active animosity. But when touched by another instinct—that of cruelty—it develops into such emotions as anger, hate, revengefulness, and that bitterest of all feelings—jealousy. When focussed in the mirror of self-consciousness, it becomes vanity and self-conceit.

We may include in this group the subconscious impulse of young creatures to exercise their muscles in play. This subsists in the conscious life of maturer years, and underlies the attractiveness of athleticism, and of the physical culture, which was so essential a feature of Greek civilization, and found its renaissance amongst young Englishmen. Like all instinctive impulses, it is strengthened by habit: lawn tennis and golf may now count their devotees in every country of Europe and America, and football is rapidly captivating the youth of India.

SOCIAL.—*Gregariousness* or *sociability* is manifested by some plants as well as animals, and pines

on a hillside, bees in a hive, and men in a social club all illustrate an identical tendency. Association would be impossible without *sympathy*, an impulse which may exercise irresistible sway over herds of cattle, or mobs of men. *Deference* may be allied with it: there is then engendered the respect for public opinion which is so marked a feature of human society, and, in remoter descent, the democratic acceptance of the will of the majority. If we incur the disapproval of our fellows—if we are “sent to Coventry”—our social life is blighted: the *desire for approbation* is accordingly one of our most imperious impulses, and there are few who are not rendered miserable by unpopularity. Of sympathy is born the desire for *intercommunication*, from which is derived the capacity for expression by gestures, sounds, or language. The regulation of society is based upon the feeling of *reverence*, or *admiration*, the bent of which is instinctively directed towards the aged: amongst dogs and horses, age demands and receives precedence; children respect their parents and teachers: the titles which we give our leaders or advisers—“senators,” “presbyters,” “aldermen”—imply that age is of itself a claim to respect. The traditions of the past, the culture of the race, are in the hands of the older generation and the prestige of age has assured that they are passed on. Respect is also given to the leader of the herd, be he—amongst men—the tribal chief or an alien conqueror. Undisciplined by a propensity towards *obedience* communities could not exist: obedient conduct is (as we shall see) associated with the imitative impulse which will be separately considered in Chapter VI. But the inclination to imitate is much stronger in gregarious animals than in those which live a solitary life.

These impulses are accompanied by a number of deferential emotions which are applauded by mankind as unselfish, and certainly conduce towards the comfort of the community. They are condemned by Nietzsche as the slave morals of the herd, and are, it must be confessed, not characteristic of the original geniuses to whom mankind has owed the discoveries and inventions that have been the guiding stars of progress.

REPRODUCTIVE.—We have here two imperious impulses—the generative (or sexual) instinct, and the devotion to offspring, which is strikingly illustrated by the self-sacrificing care of bees for their eggs and larvæ, and the labour of birds on behalf of their young. Amongst mammals this instinct is generally concentrated in the female sex, which has developed special organs for sharing its own nourishment with its offspring. Maternal love is, perhaps, the most beautiful of all human impulses, and in many religions has been enshrined for adoration. The mystery of reproduction has, indeed, forcibly impressed thinkers of all races, and has been introduced into religious cults, with consequences that have sometimes been prejudicial to sexual morality.

When the lustful impulse runs at its strongest, it is crudely indifferent to anything but the sex of its object: so it acts upon some of the brutes and upon degraded men. From this crude animal passion romantic love may be distilled if there are thrown into the crucible such other emotions as admiration, sympathy, and self-restraint. These are aroused by the charms which are discovered by the intensity of a lover's gaze, lust in this fashion stimulating the birth of impulses which compete with it. In certain abnormal dispositions one of these may actually be the

instinct of cruelty. The impulse of acquisitiveness is commonly aroused: this shows itself in a desire for exclusive possession of the loved one. But generally they are of an etherializing kind. The beloved may excite admiration, kindness, sympathy, and even self-sacrifice: in the company of these impulses lust may almost wholly conceal itself. The extent to which its crudeness is softened by alloys varies very greatly amongst individuals and peoples; and the marriage customs of the different races of mankind show how much or how little refinement it may gather from the association of other feelings. Romantic love may be less imperative than lust; but it casts a gleam of enchantment across the dull stream of practical life which may change its course or transform it into a torrent.

PROVIDENT.—In this group are brought together those impulses which urge living creatures to contend against their environment instead of accepting it as their inevitable lot. The roots of all these instincts may be traced in an impulse *to anticipate*—in *foresight*, as it would be termed in conscious life—which is a stimulus to make provision against future deficiencies or hardships. Thus many insects store up food for their young, or against the winter; squirrels make a hoard of nuts; dogs, of their bones. Throughout the animal kingdom we may find illustrations of the provision of shelter for self or for offspring. In conscious life the effect of this impulse is of supreme importance: we gather from it that there is a *future* before us: from our sensations and our memories we could learn of nothing but a present and a past. Touched by imagination it breeds hope and despair—two of the strongest of human emotions.

Acquisitiveness is the most elementary of the human impulses that fall into this group. Apart from man, very few mammals make stores of food. Amongst some birds, as those of the crow tribe, there is a curious development of a passion for hoarding. But we have to descend to the insects to find illustrations of such a desire to appropriate as urges human industry. There are species of ants which have enslaved other ants, and keep, as milch cows, the minute insects known as "aphides." *Constructiveness* is displayed in every class of the animal kingdom. Some minute unicellular protozoa (Foraminifera and Radiolaria) construct shells of marvellous delicacy and beauty : zoophytes have their corals, molluscs their shells : fish and birds make nests : the larva of the caddis-fly protects itself with a mantle of sand and fibre. Curiously enough this impulse influences mammals but little, and in this class, apart from man, there are few animals that construct themselves a house. Its importance in human development needs no illustration. *Ingenuity* has taught man how to domesticate animals, has endowed him with the art of agriculture, and has enabled him to make tools and machines which, commencing with the stone axe, have culminated in the aeroplane. But man owes to this group of impulses his avarice, covetousness, and propensity to overreach his fellows.

We shall see that the reproductive and provident instincts are in some measure antithetical : one gains strength as the other loses it. There is a curious illustration of this contrast in the loss of sex by those bees which are specially charged with the construction and management of the hive.

CHAPTER V

INSTINCTS (*continued*)

WE now pass to four classes of instinctive impulses which, from a rigidly material point of view, appear to be superfluous, and can hardly have been of practical usefulness in the physical evolution of man.

CRUELTY.—Not only do living creatures eat other creatures: in many cases they seem to take a fiendish pleasure in inflicting torture and in watching the agonies of their victims. We know too little of the psychology of the lower animals to accuse them with certainty. But a cat playing with a mouse is a familiar illustration of this instinct. It apparently attains its strongest in man. Boys naturally delight in mutilating insects and teasing animals: savage tribes torture their captives: cruelty, as well as courage, actuates the soldier in the heat of conflict, and suggests the shameful mutilations which semi-civilized races can perpetrate upon the slain and wounded. Crowds of delicate women are fascinated by the disembowelling of horses at a Spanish bull fight, just as their sisters, centuries ago, critically gazed upon the agonies of gladiators and Christian martyrs. It is difficult to believe that it is only ten generations since Englishmen—the dons and undergraduates of Oxford—stood round while venerable bishops were burnt in the streets. At

the present day, newspapers find that their circulation is increased by the publication of horrors. And which of us will not confess with shame to having been assailed by an impulse to say things which he knows will unnecessarily hurt the feelings of a friend ?

KINDNESS appears to be an emotion which is derived from an impulse to fondle or embrace. We may, perhaps somewhat fancifully, detect the effects of this instinct in the curious association of different creatures, known as commensality or symbiosis. Instances of this are very numerous. A species of sea anemone (*Adamsia*) attaches itself to the shells of hermit crabs : puffins and rabbits, prairie dogs and prairie owls amicably share the same burrow : grackles nestle round the nest of the osprey. There is no question of parasitism : each animal lives its life independently, but appears to be attracted by the other's society. In mankind the propensity to keep pets is very strong, and may not improbably have led the way to the domestication of animals. In some districts of India every man carries a *bulbul* about with him, and caged birds enliven homes throughout the East as well as Europe. Many people are not happy without a dog. As objects of worship, and as totems, animals, since the beginning of history, have been treated by man with an affectionate regard which the propensities of our own boys will enable us to realize. The natives of Peru have domesticated a snake : many a schoolboy will carry one within his waistcoat, and would sleep very agreeably with guinea pigs and white rats nestling against him.

In their dealings with one another, men, even the most depraved, are often moved, most unexpectedly, by feelings of kindness. In the cynical

days of classical brilliancy, when more than half the population of Athens and Rome lived in slavery, society could hardly have existed if the authority of the master had not been tempered by a humanity which prompted frequent emancipation. Kindness shows itself in feelings of pity. It is the pride of our own times that philanthropic sympathy should have prompted us, not merely to a liberal dispensation of charity amongst the poor and afflicted, but to self-sacrificing legislation on their behalf.

Some emotions which are generally attributed to the individualistic or social instincts may, it appears, be more appropriately assigned to impulses of cruelty or kindness. Hate, revengefulness and jealousy are concerned with injury to others, not with profit to ourselves. And friendly affection, generosity, mercy, and gratitude arise rather from the springs of kindness than from any promptings which are connected with our dependance upon others.

ÆSTHETIC IMPULSES.—In these we can trace, from very humble origins, the genesis of the artistic feelings and creativeness which in the opinion of some mark the highest flight of human accomplishment. The instinct of *self-adornment* is probably the germ of our sense of the beautiful. We see the fruits of its sub-conscious action in the brilliant colours of birds and insects. Amongst savage humanity it is a universal passion, leading to the tattooing of the body, and to the most absurd distortions of the ears, lips, and nostrils by the insertion of ornaments into the flesh. It, and not a desire for the useful, was, in all probability, the origin of clothes, which, as a matter of fact, are hardly required for warmth over a great part of the inhabited world. And in the

northern latitudes of Europe and America, where some body covering is needed, by far the greater part of the expenditure that is incurred upon dress goes to provide adornment for the body, not protection. *Dancing* is a passion with many birds: peacocks and cranes dance before their mates, tame parrots will dance to a tune, the movements in both cases resembling, not very distantly, the jerky undulations of the Eastern dancing girl, and the rhythmical spasms which follow "rag time" music in Western ball-rooms. It expresses an appreciation of rhythm which has led to the invention of rhythmical instruments, such as the drum, the tom-tom, and the castanets. *Singing* is a wonderful and charming talent of bird life: reptiles, the cousins of birds, are capable of its rudiments, and many insects express their joy in the sunlight by uttering sounds, which to us may seem harsh, but are beyond a doubt ecstatic. The Cicada gives up almost half its body to the mechanism of its notes, and may be likened to an animated musical box. Men and women are, perhaps, inferior to birds in natural capacity for singing; but, finding in the instinct a basis for the artificial composition of music and the cultivation of the voice, they have elaborated melodies, harmonies, and methods of execution which appeal most touchingly to human feelings and can work marvellous transformations in human moods. *Declamation*, or *recitation*, is allied to singing, and is the origin of poetry, rhetoric, and style in prose. *Prostration*¹ is associated with the emotions of wonder, admiration, dread, and self-abnegation. Men share this

¹ Some of the manifestations of the self-abandoning impulse may hardly be distinguished from expressions of pleasure and pain, or of the emotions—the manifestations, that is to say, of *reflected* impulses. But they are generally marked by greater definitiveness of purpose.

impulse with the dog ; and we may perhaps see traces of it in the comical bows that are executed by penguins when surprised by the apparition of Antarctic explorers. Its most humiliating forms are characteristic of savage communities: it is a leading feature of all religions, and amongst civilized nations it survives in the salutations of everyday life. The curious habit of, apparently, feigning death, practised in the face of danger by some insects and higher animals, may be a manifestation of this impulse. Its origin can hardly be explained by suppositions of evolutionary utility, and we are quite likely to be incorrect in imagining that it is of practical value.

The manifestations of the æsthetic impulses are accompanied by a mental attitude of self-abandonment, an emotion of ecstasy, which is strongly contrasted with the prim egotism of self-conscious life. We may observe this emotion in the soaring lark, and in the impassioned orator or artist. It is a characteristic feature of earnest religious experiences ; and the transfiguration of moods that is compelled by its influence, affords the intense relief which is felt by the "sick soul" that is bathed in the deep waters of spiritual self-abandonment.

ETHICAL IMPULSES.—We now come to a set of impulses which are popularly supposed to be a splendid monopoly of mankind's. They are characterized by self-control, or self-repression, and they are essentially opposed to æsthetic promptings. Some of them, such as *justice*, *honesty*, and *truth*, benefit others as well as those who act upon them : others, such as *courage*, *purity*, *patience*, and *asceticism*, are almost wholly self-regarding. So different are these impulses from the instincts of practical life that their possession

by mankind has appeared to the religious-minded to be a convincing proof of Divine intervention. Evolutionist philosophers have felt obliged to attribute their existence to the discriminating power of the human intellect which could perceive utilitarian reasons for the adoption of behaviour that to the unenlightened appears to be a foolish disregard of practical interests. But, considered dispassionately, these impulses appear to be undoubtedly instinctive. There is hardly a man, however degraded, whose pulse is not quickened by the display of self-sacrificing courage, of self-denial, of undaunted chastity. No reasoning calculations could have evoked so useless, so painful a habit as the ascetic. Indeed, the eccentricities of asceticism are sufficient to prove that its foundations lie far below human ingenuity or the human will. What social conventions could have produced an emotion which is capable of urging mankind to the unnatural practice of celibacy, to the self-infliction of torture, even to self-mutilation—all supremely useless, from a practical point of view, to society and to themselves?

Our search for the germs of these impulses amongst the lower animals is impeded by our inability to enter into their minds. But it is not altogether fruitless. Many insects display self-devotion in the cause of their community, and the unresisting submissiveness of the males of certain¹ kinds to be eaten by the females excites our astonishment. A cock will deny himself for his family of hens; both horses and dogs appear to possess a sense of justice; and we may perhaps see in the practice of monogamy by many birds and quadrupeds, some indication of a self-denying

¹ Certain mantises and beetles. This curious self-devotion also occurs amongst some scorpions and spiders.

impulse. But, however this may be, if these impulses are instinctive, their germs must be lying dormant in the animals below us. And to deny that they are instinctive is only possible for those who hold that they have been breathed into man by a special act of Providence.

§

These various impulses may be regarded as Life's endowment, if not, indeed, as part of Life itself. But all tribes of living creatures do not possess the gift in its entirety. All animals must be equipped with individualistic and reproductive impulses if they are to preserve their own lives and continue their species : all gregarious animals must at least possess the social impulse of deference. In most beasts and birds we can detect traces of both cruelty and kindness. But the provident, the æsthetic, and the ethical impulses are possessed far less generally. Apart from man, providence is manifested most strikingly by insects ; birds, it is true, construct nests, but these are for their young, not for themselves, and we find no trace of providence in its most elementary form—an impulse to store up food when it is abundant against the time when it becomes scarce. In quadrupeds, also, the provident instinct is extraordinarily weak : few of them have any notion of putting by for the future, or construct a dwelling of any kind. The æsthetic impulses are strongly developed in birds ; self-abandonment can hardly be better illustrated than by a bird in the ecstasy of its singing. Here again quadrupeds are curiously deficient : man appears to be the only mammal that takes pleasure in dancing, whereas its delights are appreciated by many birds. Outside mankind we can only discover faint traces of the ethical impulse of

self-restraint. Its fruit is generally negative : it is represented by abstention rather than by action, and can hardly be detected without a deeper insight into the minds of animals than we possess. We may, however, assume that its development beyond a germinal stage is the peculiar stamp of humanity. Man's other impulses have been developed by various animals, some of which are exceedingly remote from him. In providence he is the heir of the insects ; in æsthetic feeling of the birds. His own kin, the mammals, have had little to bequeath to him. But certain of them have transmitted what they could not develop, and have passed on to him germs which, springing into activity, have enabled him to outshine each order of the animal kingdom in its peculiar excellencies.

On a broad view we may conclude that each tribe of animals is characterized by a general similarity of impulses. But there are striking anomalies. We are impressed by the industry of insects : vast numbers, however, pass their lives in idleness. Wasps that are closely related may be gregarious or solitary in their habits. The crustaceans generally protect themselves by secreting a horny covering ; but the hermit-crab is imperfectly endowed with this capacity, and must take refuge in deserted shells. Nest-building is characteristic of birds ; but the cuckoo lacks the impulse entirely. Moreover, we may discover such irregularities as these within the ranks of the same species. What contrasts do we perceive between the characters of different breeds of dogs and horses ! So, amongst mankind, a general similarity of impulses is broken by astonishing individual and racial differences. Some men appear to have little providence : in others kindness is altogether obscured by cruelty : some are extraordinarily deficient in

æsthetic sensibility, have no sympathy whatever with tune or rhythm: in others any notions of self-restraint appear to be altogether lacking.

§

The groups into which impulsive instincts have been gathered, fall, it will be observed, into four pairs of contraries—individualistic and social, reproductive and provident, cruel and kind, self-abandoning (æsthetic) and self-restraining (ethical). From this antagonism results the extraordinary variety of human nature. For these impulses, as we have seen, are not of uniform strength in individuals: some men lack almost entirely the hunting instinct, others are abnormally affected by music, in some kindness, in others cruelty seems to predominate. By an abnormal development of the individualistic impulse some men are happiest in solitude and are restless and uneasy in the society of their fellows. These peculiarities,¹ like peculiarities of feature and complexion, sensibility and aptitude, are in great measure hereditary, and we can understand, then, how there comes about such diversity between the characters of different individuals, families, and races. But we have still to find an explanation for the inconsistent behaviour of individuals—how a man may be at one time kind, at another time cruel, at one time transported by ecstatic passion, at other times restrained by the sombrest asceticism. We have to remember that impulses come upon us, not singly, but in assortments: that they mingle with, or react upon, one another, and are affected in particular

¹ Similar inborn eccentricities of impulse oblige the Japanese waltzing mouse to whirl itself when running, and the tumbler pigeon to turn somersaults in flight.

by the intrusion of self-consciousness. A hungry man will moderate his appetite if he fears that to his companions it will appear so large as to be vulgar. The impulse to dance may be checked by feelings of self-conscious vanity, or be reinforced by the emotion of love. The virtue of courage may be rooted in self-control : this alone will give us cold-blooded fortitude in the presence of death ; but it may also draw strength from self-abandonment, from cruelty or from self-consciousness. The passion of love becomes an enduring emotion when it is strengthened by the social and kindly impulses. The powerful emotions of pugnacity and love may arouse very remarkable developments of kindness or of cruelty, of æsthetic or of ethical feeling. Conditions of warfare appear to force into flower the artistic talents of a nation : the noblest productions of Greece, the dramatic glories of the Elizabethan era are illustrations in point. Under the influence of love most men become poets.

Our behaviour upon any occasion will depend upon the impulses which assail us and the impulses which prevail. There may be differences in both of these elements, even when the circumstances that stimulate us are precisely similar. For, in the first place, the impulses that are called up by a sensory impression or a recollection depend very largely upon the impulses to which we are subject at the time : if we are under the influence of irritation our reason may fail to control us and a trifling mistake on the part of another will make us positively hate him. We have seen, moreover, that certain impulses gain or lose force with the passage of time : love may lead a man astray after middle life, but not with the blinding authority it exercises over the young. Secondly, similar impressions do not at all

times evoke the same recollections, and, if the recollections differ, the impulses which are released will also be different. The feelings with which we meet an acquaintance will depend upon the recollections that spring up of previous meetings. Thirdly, there is the difference which will result from our exerting or not exerting our power of will—of deliberately choosing or deliberately rejecting. There are, then, an indefinite number of possibilities in a man's behaviour under any stimulus, and human nature is accordingly very uncertain and very inconsistent.

Are we, then, it may be asked, as fallen leaves, set in a whirl by conflicting gusts of passion, and finally driven this way or that by the strongest of them? So, in a measure, may be represented the ever-running drama of man's temptation. But the impulses which we have been attempting to catalogue do not possess the stage to themselves: they are joined, in particular, by three others—reason, will, and habit—which are of a different character, which act as prompters to the company and may give to one of them the accession of energy that enables it to lead. Reason may be improved by education: will may be invigorated by practice. And by the acquisition of habits through his will power and his imitative faculty man may so facilitate the outwellings of some impulses at the expense of others as apparently to transform the character with which he was born. By yielding to an impulse we, so to speak, widen the outlet for it, and proportionately lessen the stream of impulses which compete with it. By working steadily we may enhance the influence of the industrial impulse, as by indulging our appetites we strengthen their hold over us. By habit, then, as well as by will, a man may bring unruly impulses under discipline. Yet his for-

titude may be wasted, his habitudes may be upset, should he chance to meet a woman who disturbs the balance of his emotions by exciting his love.

§

To many men an explanation of Life or of Nature appears to be unsatisfactory unless it resolves the complex into the simple, unless it tends towards the conclusion that the various links between happenings, which we term "causes," are but manifestations of an ultimate unity of purpose. They will condemn as retrogressive—even as absurd—an attempt to account for human behaviour by attributing it to a number of inconsistent and antagonistic impulses. Yet if we review the endeavours which have been made by men of intellect during the past twenty-five centuries to discover the foundations and foresee the ultimate development of human conduct—and, in the theories of ethics and political economy, to formulate the aspirations that should guide it—we shall conclude that their ideals have been as numerous and as diverse as the impulses which we have been cataloguing, and may, indeed, be generally defined as the acceptance of one or other of these impulses as superior in strength or desirability to all others. So Epicureanism idealizes the individualistic impulses, Altruism the social impulses, Stoicism the ethical impulses of self-restraint, Hedonism the æsthetic impulses of self-abandonment. We may, in like fashion, conclude that kindness is the moral ideal of Christianity. Political Economy is concerned with the methods in which the provident impulses can be most effectively satisfied. Reason, which, as we shall see, may also be classed as an impulse, is adopted by some philosophers as the guiding star that will lead

mankind towards a state of perfection. As the spirit of utilitarianism, it takes note of the feelings of pleasure and pain, of happiness and unhappiness, which arise from our sensations and our impulses, and pictures the pleasure or happiness of the individual or the community as the goal towards which conduct should strive. This theory, accepted nakedly as it stands, would sanctify all sensations and impulses which afford pleasure or happiness: but so stark a conclusion would be practically demoralizing, and it has therefore been limited by more or less artificial definitions of pleasure and happiness. We may, then, take it that the multiplicity and variety of the theories to which philosophy has been driven in its search for a science of living, strongly corroborate the view that human nature is a compound of a number of discordant elements.

§

The two impulses that remain for our consideration do not suggest definite lines of activity, but are compelling guides to general behaviour. They are in the sharpest contrast—Directive Instinct and Reason—and represent methods of shaping external behaviour to environment that are characteristic, respectively, of the lower and the higher orders of the animal kingdom.

DIRECTIVE INSTINCT.—In some of its manifestations this may perhaps be described as a subtle penetrating sympathy which gives a living creature instinctive knowledge of other living creatures, or of substances, that subserve its nourishment or its reproduction.¹ Such a mysterious

¹ The experiments of M. Fabre have convinced him that the females of some bees can not only lay male or female eggs according as the provision for the larva (as controlled by experiment) is large or small—in cell capacity or food—but can actually determine the sex of each egg as it is laid by them.

sympathy must also guide the internal organs of our bodies : the heart and the lungs act with full appreciation of each other's requirements, and the stomach realizes what substances should be accepted, and what rejected by it. But this description is not sufficiently comprehensive. Directive instinct is apparently the energy by which living creatures grow from their initial to their adult stages, and it must therefore include a realization of *purposes*—not merely of the ends to which certain organisms and substances of the environment should be applied, but of the final development to which growth tends. And it must also include a precise and detailed realization of the means by which growth, nourishment, and reproduction are effected. The characteristics of this faculty have already been described. They include independance of experience, inevitability of sequence, and accuracy of execution. An organism that is guided by it knows no doubt or hesitation : it proceeds towards its aim with the unflinching punctuality of clockwork. So appears to us the undeviating regularity of a beehive, and so would appear to us the working of our internal organs could we realize its accurate complexity.

An accomplishment which simulates the processes of directive instinct is that known as the "ideo-motor," by which we are able to execute elaborate series of movements, such as those of walking, speaking, or playing the piano, without any dependance upon the brain, each sensory impression or recollection producing the appropriate muscular reaction by the independent functioning of local nerve centres. But this accomplishment is only acquired by deliberate practice. Processes that are directed by instinct need no practice whatever. A young caterpillar on emerging from the egg is as efficient in its

activities as when full grown. The inexplicable acuteness of the *Scolia* wasp and its larva has been already mentioned. The life histories of the *Yucca* moth and the *Sitaris* beetle are not less astonishing. The former takes a lump of pollen from the anthers of one *Yucca* flower, lays its eggs in the ovary of another flower, and, before flying off, fertilizes this flower by depositing the lump of pollen upon its stigma. The larvæ feed upon the ovules in the ovary, and would be short of nourishment unless these were fertilized and grew to maturity. But they do not consume all the ovules: some are spared and form seed to carry on the life of the plant in the next generation. The transfer of pollen from one flower to another is, then, necessary for the life both of the larvæ and the plant. But we are quite unable to understand how these two distinct necessities come to be linked through the impulses of the moth. The *Sitaris* beetle lays its eggs at the mouth of the burrow of the *Anthophora* mason bee: its young are active little creatures with prehensile claws, and leap on to the drones as they pass out of the burrow on their nuptial flight. They transfer themselves to the females during the process of mating, are carried by the females to the nest, and transfer themselves again on to the eggs, when laid, living upon them and upon the store of honey until the time comes for their metamorphosis into adult beetles. The larvæ are endowed with special organs and special impulses for their threefold migration, the object of which is to enable them to live, in a most complicated fashion, upon the lives of others.

Directive instinct is absolutely unreasoning, and will accept no guidance from inference. A mud-wasp (*Pelopœus*) will continue to provision its nest-cell for its young after the egg which it has

deposited has been removed: it does not perceive that its labour has become objectless. When, having completed its cell, having deposited its egg, and stored provisions for the larva, it returns with clay to cover the orifice, and finds that during its absence the cell has been destroyed, it will not appreciate the effect of this calamity, and will carefully affix the clay on to the place where the cell would be if undestroyed. It appears, as we shall see, that insects are not altogether devoid of reasoning powers. But, when acting under the obsession of directive instinct, they seem generally unable to make use of them.

All animals are dependent upon directive instinct for their development, growth, and the functioning of their internal organs. Invertebrate animals also rely upon it for the guidance of most of their external activities. The communal life of a bee-hive, or an ant's nest, is almost wholly regulated by it, in complications of constructive art, social organisation, and even civil government, the elaboration of which appears to us to be inconceivable without the use of reasoning intelligence. As we ascend the scale of vertebrates, directive instinct loses its efficiency and resigns its paramount authority, until in man it is almost extinguished as a guiding force in behaviour. To hold tight and to suck are almost the only innate accomplishments of a new-born baby.

But it would be extraordinary were so vigorous a force to vanish entirely, and we may believe that it survives in men, albeit with changed authority. We may, perhaps, trace to its influence our *aptitudes* for acquiring the accomplishments of our kind. We are born in the utmost inefficiency—unable to walk, to speak, or to realize our impressions: but the facility with which we learn these ideo-motor processes seems to indicate that

we are endowed with special aptitudes for them. Directive instinct changes its rôle : when it no longer instructs, it smooths the path of learning. In man this change is almost complete : we may observe it progressing in the animals below him. The innate equipment of all the higher animals appears to include aptitudes as well as ready-made accomplishments. Some birds appear to need lessons in flying from their parents : thrushes may be seen instructing their young to break snail shells. Aptitudes vary in individuals—not perhaps very greatly, when we consider how much of them is common to all of us—but the differences are sufficient to distinguish talented from untalented men. Some persons are endowed with special aptitudes for games, others for learning languages, others for literary expression, others for mathematics. Their talents may not be accompanied with strong impulses for using them : we all know of talented but idle men. On the other hand, impulses may be possessed without special aptitudes : such is the case with tongue-tied poets, with earnest but unsuccessful golfers. When impulses are combined with special aptitudes we have the equipment of an able man.

If talent is nothing more than an addition to an aptitude which is possessed by most men, and is not an endowment peculiar in itself, we can understand why it should so often appear unexpectedly in families : it is a thing not of kind, but of degree, and would be liable to such variations as bring about differences in colour of hair, or complexion, between children of the same parents. And just as these physical traits, however varying in the individuals of a family, tend towards uniformity within the family, so may we expect special developments of aptitudes to be frequently hereditary in particular families.

REASON.—In man, as already remarked, instinctive machinery for the regulation of outward conduct has become obsolete. In exchange he is equipped with Reason far more generously than any other animal. In attempting to define this faculty we enter upon ground which is strewn with the fragments of psychological discussion. It may, perhaps, be described as a process by which we weave our impressions and recollections into a connected tissue, instead of leaving them as a tangled mass of random happenings. To this end we are, in the first place, impelled to link together different impressions by their similarity of appearance, or by their contiguity in space, or in time—that is to say, we associate impressions that resemble one another, are related in space to one another, and precede or follow one another. We connect in this way one dog with another dog, a dog with its kennel, and a dog with a bite. In the next place we are impelled to infer that likeness in appearance implies likeness in what precedes, accompanies, or follows. I have been pricked by a bramble : I infer that if I touch that bramble, or another similar bramble, I shall be pricked again. I have, then, learnt to avoid what an insect would have avoided instinctively. But with my reasoning powers at this stage I have to learn a separate lesson for each particular set of objects. My learning gains in scope immensely when my reasoning powers are completed by an impulse to distinguish things *by their properties*, instead of accepting them as indivisible wholes, and to see in these properties the *causes*¹ of happenings. I observe that the bramble has the property of thorniness, and, by attaching my inference not to the plant, but to the property, I

¹ To recognize, for instance, a soporific property in opium as the cause of its inducing sleep.

learn to avoid all plants that may prick me. We proceed to class as "properties" the similarities, contiguities and sequences that were the fundamental points of attachment by which we first linked our impressions together: similarity is figured as *relationship*, connection in space as *position*, sequence as *cause and effect*. I have learnt when using a slate that a squeak is caused by (that is to say, is preceded by) friction: I infer that the squeaking of a tram-car is also caused by friction. I suffered from headache when ascending a mountain: I infer that a balloon ascent would give me (that is to say, would be followed by) a headache. Prodigious have been the consequences to mankind, for evil as well as for good, of this assumption that the links of inference are themselves properties. For, in discovering these links, we are not assisted by instinct, but are left to our powers of perception, and we are accordingly liable to great error. I may confuse the dream of a pain with an actual pain, and may wrongly infer that I need medical treatment. I may perceive the stars as lying close to one another, and may imagine that they are "pattens of bright gold" set in a crystal sphere. I may attribute an attack of indigestion to lobster salad when it was really caused by champagne. We are especially liable to error when we see in happenings the property of being *causally* connected with what precedes them, since a happening is preceded not by a single thing, but by a complicated tangle of things, out of which we are liable to make a wrong selection, and so to dignify as the "cause" of the happening a thing which had in reality no connection with it. I may, for instance, infer that an old woman is a witch because I felt queerly when I passed her, and had read that witches, by the evil eye, could affect malignantly those who

approached them. Science is the diagnosis of essential—as opposed to accidental—properties. But science has come very slowly into the reasoning processes of mankind.

Reason differs radically from directive instinct in that it is helpless without experience and memory, and may be misled by them. The action of directive instinct may be compared to a machine that is devised to execute a particular movement upon the playing of a particular chord of music. Reason resolves the chord into its component notes, which, by inferences from experience and memory, are brought into connection with opinion or behaviour. The experience may be direct, or indirect—that is to say, may have been derived from the sensory impression of an object or from information acquired from others by means of gestures or words. A new-born baby is helpless, since it lacks all but the very rudiments of directive instinct and also lacks experience and memory.

Reason is popularly supposed to be man's prerogative, and even evolutionist speculation is sometimes coloured by the assumption that this capacity is a development peculiar to humanity. But if the doctrine of evolution is reliable the germs of reason *must* be inherent in all creatures, and an unprejudiced survey of the behaviour of the lower animals will find no lack of evidence of some capacity for reasoning. Insects which will pursue the routine of nest-making and egg-laying in complete disregard of accidents that render their labour useless and absurd, will use careful discrimination in the preliminary tasks of choosing a site for the nest and in selecting its materials, showing a judgment that seems to indicate that they can compare the merits of different sites and substances, and can draw

inferences in choosing one or other of them. There are, in fact, occasions when they are free from the dominating influence of directive instinct. In some cases, indeed, reason appears to have actually modified instinct. Caterpillars that have protected themselves by rolling up leaves have, under different circumstances, taken to burrowing within them: beetles that rolled up balls of dung (for the deposit of their eggs) have taken advantage of sheep droppings: a New Zealand parrot (*Pastor mutabilis*) has within recent years become carnivorous, and causes much loss to farmers by wounding sheep. Birds and insects will occasionally alter the customary form and situation of their nests, and will make shift to economize materials. A crucial case, quoted by Romanes, is that of a flycatcher which nested in a conservatory and, appreciating the heat maintained by the furnace, left its eggs to hatch of themselves. In all these cases there must have been some distinguishing of properties, and inferring from experience. A familiar illustration is that of a dog which has been shut into a garden. At first he will endeavour to scrape himself under the gate, or through the bars, but if he fails to get past and is an intelligent animal, he will attempt to jump the gate. He notices that the gate has the property of being surmounted by a jump, and infers from past experience that he can leap over it. He would not try to jump a high wall. Man has been assisted in outdistancing the most intelligent quadrupeds by his almost total loss of directive instinct: he must rely upon his reason, whereas the dog or the monkey is subject to instinctive promptings which confuse its reasoning faculties. Habit, it is true, similarly enables man to dispense with his reason: but habit is less imperious than instinct, and may

be over-ridden by reason. The efficiency of reason may be improved by education: by practice we can extend our power of discerning *properties* in things. But the gulf which separates man from the brutes is formed not only by superiority in reasoning powers, pure and simple, but also by the far-reaching effects of language and introspective consciousness. By language properties, once perceived, are clearly defined. By introspective consciousness not only has the appreciation of properties, and the accuracy of inferences, become very greatly enhanced, but properties themselves are subjected to analysis, and are discovered to possess properties of their own. So have originated the abstract sciences of logic, numbers, and quantities. These all-important developments will be further considered in Chapter VII.

A word of explanation should be added. We have brought together in this and the preceding Chapters certain of our vital impulses and have classed them as *instinctive*, because they are of a kind to which the term "instinct" is generally applied. But in their essential character as innate promptings to action they do not differ from the impulses to which Chapters II, III, VI, VII, and VIII are devoted—that is to say, from the impulses of changefulness, responsiveness to sensation, memory, habit, imitation, consciousness, and will. These attributes of Life have been treated separately because they are so general in their character and so far-reaching in their effect.

CHAPTER VI

MEMORY, HABIT, AND IMITATION

WE have grouped Memory, Habit, and Imitation together because they are all *repetitive* influences—influences which may perhaps be ascribed to a tendency of living tissue to repeat the results of impulses. Memory is the repetition of mental, or nervous experiences; Habit, the repetition of mental or muscular action; Imitation, the repetition of mental impressions in mental or muscular action. The physical world around us is pervaded by the rhythmical repetitions, or vibrations, of light and sound; and memory, habit, and imitation appear to have more in common with Matter than with the spontaneous irregularity which is the chiefest characteristic of Life. Many of the nervous reactions of living creatures display a sympathy with rhythm: such are the regular pulsations of the jelly-fish (Medusa), the timed movements that synchronously agitate swarms of insects, and the human accomplishments of music, poetry, and dancing. But neither memory nor habit, so far as we can judge, is an influence of paramount importance in the inferior classes of the animal kingdom. Here the processes of directive instinct maintain the regularity of life. Higher up the scale, memory and habit become controlling forces: they are tyrannical, but infinitely less so than the almost inevitable regularity which they displace. Imitation, on the

other hand, appears to be an impelling force throughout the animal kingdom, and may have contributed to the spread of physical changes from the individual to the species.

§

MEMORY.—It may very well be that we forget nothing, that we store up a recollection of everything that has affected us. The great mass of our impressions is collected subconsciously, and will only recur to us when we are in a subconscious condition, as, for instance, when we are dreaming. The strange materials which enter into our dreams are derived from impressions which we have registered, but have not marked in consciousness. There is a well-known case of a Dutch maidservant who, when delirious in hospital, declaimed passages from the Talmud. It was ascertained that she had been in the service of a Rabbi who was in the habit of reading the Talmud aloud as he paced up and down the passage which led to the kitchen. His recitations had subconsciously been registered in the girl's memory, and emerged from it when she was in a state of subconsciousness. In conscious life she could not remember a word.

A stream of recollections is flowing unceasingly through our brains. It may perhaps be interrupted during very deep sleep, or when we are unconscious, as during a fainting fit. When awaking from deep sleep we may experience a strange feeling of not knowing where we are. This may be due to an interruption of memory, which has the same effect as the stoppage of the heart during a fit of unconsciousness. Should the stream of memory become blocked, our life, our character, our personality is changed. Such is the inference we may draw from the experience

of a young American clergyman, Mr. Hanna, who suffered complete loss of memory owing to a fall from his dog-cart. When he recovered consciousness he was as helpless as a baby. His past was a blank ; he had no perception of distance or solidity ; he could neither eat, speak, nor walk. It took some months' instruction to restore these capacities, but, having recovered them, he remained with an entirely new personality. Gradually old memories surged up, at first in dreams, then during waking moments ; and, after a strange conflict between his two personalities, his original disposition slowly reasserted itself.

The ever-flowing current of recollections is for the most part subconscious, and is not apprehended by us in our conscious conditions. But it rises to the surface from time to time, thrown upwards by touching a feeling of pleasure or pain, an emotion, or a resolution of the will. We are suddenly aroused from a "brown study" by the occurrence of a recollection that we have omitted to post a letter. For a time—it may be a long time—the stream will flow through the realms of consciousness. It may take one of three courses, which may, respectively, be compared to a river which runs straight, to a river which meanders, and to a river which is twisted by sharp deflections. Our recollections will be, in the first case, a continuous reproduction of former impressions ; in the second case, a recombination of impressions linked by trivial coincidences ; in the third case, such a recombination linked by emotional experiences.

A good illustration of the first class of recollections is the repetition of a piece of poetry : word succeeds word as originally learnt, and, the less is the emotion aroused by the recital, the more word-perfect it will be. Some boys will repeat

a book of the *Æneid* after a few hours' study. Did the poetry interest them they would be less successful. In India Mohammedan children will recite chapter after chapter of the Korán, in a language (Arabic) with which they are entirely unacquainted.

Recollections of the second class are connected by points of contact, which arise out of purely accidental properties, but are sufficiently strong, in the case of trivial minds, to disarrange the sequence in which the original impressions were received. The recollections are linked (in the language of psychology) by "contiguity." Memories which function in this manner are admirably illustrated by the conversations of Mrs. Nickleby. Persons who are afflicted with them are unable to keep to the point, or leading interest, of an anecdote, but wander from one side issue to another in a manner which to listeners is intolerably boring.

Recollections of the third class are strung together by resemblances that arouse emotional interest. This process is termed "memory by association." My attention is suddenly aroused by an emotion of fear, which has been suggested by the subconscious recollection of a fall from my bicycle. Thence onward there pass before me the church I was on my way to visit, my opinion of its architecture, a tour in France in the course of which I saw a church of similar style, an interesting conversation with the curé of the parish, a regret that I was not taught French more efficiently at school, and a recollection of recent correspondence in the newspapers regarding the respective educational advantages of classical and modern languages. Each recollection is connected with its predecessor by a link of emotional interest: and the more emotional interests a man possesses the more varied, the more suggestive,

the more *imaginative* will be his recollections. It is mainly in the equipment of emotional interests that lies the difference between the intelligent and the stupid man.

An emotional impulse may not only deflect the course of the memory stream, but may set up a vortex in it which constantly brings the same set of images before the consciousness. A lover's thoughts can hardly stray from his mistress, and the conversation of men who are given up to racing or golf shows how little is presented to their minds that is unconnected with their passion. The eddy may grow into a whirlpool that engulfs the memory stream altogether, but seizes hold of a few recollections that are circulated incessantly before the sufferer's attention. This is madness.

§

By investing an impression or a recollection with an emotional interest, we endow it, so to speak, with a magnetic attraction for other impressions and recollections that have been touched by the same emotion. Recollections that are so connected tend to fly towards one another if the regular subconscious course of the memory-stream be disturbed by an emotion or an effort of will. The fruit of these attractions is the faculty of Imagination, which is one of the most sentimental and most practical attributes of mental life. We think of it as a creative faculty, and so it may be regarded from one point of view. Yet, strictly speaking, it can create nothing, and is absolutely dependent upon the memory for the material with which it builds up its fabrics, whether they be artistic, mathematical, or castles in Spain. But our memory can supply us abundantly with materials that may be fashioned, combined, and

recombined ; and there are almost infinite possibilities for the activity of the imagination in creating new forms out of pre-existing elements. The imagination may be stimulated by the conscious establishment of a "field of volition," or mental disposition towards a certain theme or subject, as, for instance, the composition of a landscape. This "field of volition" may, perhaps, be likened to the magnetic field that is developed round the poles of a magnet. It sets up an activity that causes the memory-stream to present to us recollections which are apposite to the subject before us—which are, that is to say, attracted by the same emotional interest. The fertility of the imagination—the abundance of the materials with which the artist can construct—depends upon the emotions that have been aroused in him by the various features and phases of actual landscapes that he has seen, and the links which his emotions have established between them. If he is of an emotional disposition—that is to say, an "imaginative" man—from his memory will surge up a flood of detail. If he is of colder temperament, or his brain is not functioning actively, he may have to cudgel his memory for ideas. By a similar process the poet is inspired with similitudes and rhythmical expressions, the musician with sequences and combinations of sounds, the mechanic with new contrivances, and the mathematician, who can find emotional interest in the properties of numbers, quantities, and positions, can picture in a form which hardly eludes his conception such unsubstantial possibilities as a fourth dimension. Creative art is the offspring of imagination ; so are the theories of science, and the mechanical inventions that have given a special character to modern civilization. Occasionally, it may be objected,

discoveries are made by accident. But it is doubtful whether these accidents have occurred to men who were not prepared to welcome them. It may be objected again, that undue stress has been laid upon the power of the will in the assembling of the materials with which imagination fashions its designs. Every writer is well aware of the assistance which he owes to subconscious thought : ideas and sentences suddenly present themselves to him, as the spontaneous offerings of his brain, that are astonishingly superior to those which he has been able to conjure up by the concentration of his will. Not a few may confess to ideas that have come to them during sleep, and did not vanish before they could be recorded. It is said, indeed, that Coleridge awoke one morning with *Christabel* ready composed in his brain. But the theme to which these suggestions contribute has previously been enshrined as the altar-piece of a mental disposition : the memory has been reasorting its treasures subconsciously, but under an impulse which it received from conscious volition. Imagination may, then, be defined as the assembling of memories which have been reasorted by emotion under the influence of the will.

The effect of a mental disposition, or "field of volition," is familiar to many of us in the process by which we call to mind a name that has escaped us. We try to recollect it, but in vain ; we cease to strive after it, when it suddenly presents itself. Influenced by our desire, the memory-stream has subconsciously delivered up the symbol which would not obey the summons of conscious effort.

By imagination we can repeat emotional experiences of the past. Direct recollections of them may be but pale, sentimental, reflections of the

original passions. But if summoned indirectly, by the imagining of the impressions which originally evoked them, they may affect us as powerfully as when they first arose. We owe to imagination hope and despair—two of the strongest emotions of mankind. The one is the vision of satisfied, the other of unsatisfied impulses.

§

Such are, so to speak, the dynamics of memory. But it must also be considered as a static force—not as a stream but as a store-house of recollections. These, when assorted and, so to speak, indexed by consciousness, constitute knowledge—a fund from which disbursements may be made at the call of the will. Recollections may be direct—simple repetitions of former sensory impressions—or symbolic: we may have direct recollections of St. Petersburg, presenting the place to us as we have seen it; or we may have recollections of words, or symbols, describing the city, which, so to speak, construct views of it by calling up certain direct recollections (of rivers, streets, and so on) which originally had no connection with St. Petersburg, but are reassorted and recombined in the process.

Direct recollections are clearest when they are visualized, when, that is to say, the original sensory impressions repeat themselves as a definite, detailed picture. In such a case one may be able to catalogue a number of different objects that have been presented only for a moment. Readers of Kipling will remember Kim's endeavour to rival the jeweller's apprentice in this accomplishment. Visualization can undoubtedly be strengthened by practice. It is strongest in children and in savages: it fades away as age advances, and has been shown by investigation to be at its weakest amongst men of science.

Symbolic recollections are much more than recollections of symbols: they involve the recollection of the object which the symbol denotes, and proceed from the capacity of the memory to link together objects and symbols in correlative pairs. Words are of course the principal symbols in use, and our power of expressing ourselves is entirely dependent upon the tenacity with which a word and the thing or conception which it represents, cling together. Unless the word "rose" is attached to the flower it would be impossible to speak about roses. We know very well how often, with foreign languages, this link between symbol and object becomes broken: we say, then, the word fails us. Amongst other symbols are children's toys. Their attractiveness lies entirely in their power of recalling the objects for which they stand. In children, as already observed, the faculty of visualization is exceedingly efficient, and this explains the fact, so commonly noticed, that a child will often prefer a rough toy-symbol of its own to an elaborate purchase at the toy-shop.

A third class of these, so to speak, *static* recollections are those which enable us to adjust our sensations by correcting them in the light of experience—by means of which we see as a round object a table which is really presented to our eye-sight as an oval. These subconscious recollections enable us to convert crude sensory impressions into "percepts"; lacking the faculty of directive instinct, we should be entirely at sea without them.

The links which bind together a pair of correlatives in the memory—which unite an object with its symbol—weaken very greatly in the case of new impressions, as age advances. Adults learn languages with far more difficulty than

children : many of us know how hard it is to memorize botanical terms which in boyhood were instantly fixed in our memories. On the other hand, with increasing years, we improve in the faculty of appreciating the properties of our impressions, and of detecting connections between one impression and another which, incidentally, enable us to illustrate our ideas with greater fecundity. This is what is called the "wisdom of the aged."

Some individuals are blessed with good, others are afflicted with bad memories. But in mankind, generally, the faculty of remembering is more highly developed than in any of the lower animals. We speak of the good memories of dogs and horses, but should be surprised by an anecdote which showed that recollections endured with them for so long as ten years. Lower down the scale the scope for memory diminishes with the growing usurpations of directive instinct. Recollections are vivid during the performance of an instinctive task, but, this completed, they fade away. Whilst an egg-cell is under construction, it is ever-present to the bee : once finished, it ceases to exist for her. But the faculty seems to persist, however little it may be developed : some insects recollect occurrences that are unconnected with their instinctive processes.

§

HABIT.—Nervous tissue has a tendency to repeat its reaction to a stimulus. Our hearts and lungs illustrate this tendency by their regular pulsations, and many of us know how rapidly faults of style, in playing games or performing upon instruments, become stereotyped. This proclivity to repeat is strengthened by practice : it is by practice that we attain the repetitive facility that is needed for walking, speaking, and

for the daily tasks of dressing and undressing. By practising these operations we "short circuit" the chain of reactions that they represent, detach it from the brain and permit it to pass subconsciously along local (ideo-motor) nerve systems. The force of Habit produces similar results, but in a different fashion. It is concerned with impulses as well as with processes, and its most noticeable effect is to facilitate our response to the promptings of particular instincts, memories, and beliefs. We may imagine its action as wearing by repetition the channel by which an impulse frees itself, and so increasing the volume of the impulsive current.

Thus by a life of enforced solitude, such as that of a hunter or explorer, the individualistic impulses may become so predominant as to render a man unwilling to mix with his fellows and uneasy in their society. Under different circumstances the same man may become so dominated by social impulses as to consider a day wasted if some hours of it are not spent at his club. Feelings of respect grow under the influence of respectful manners. By the systematic practice of asceticism—even in the pettiest of matters—the self-repressive impulses may be stiffened until they form a moral backbone that will enable one to confront with courage tribulations before which those whose wills are undisciplined fall prostrate in nervous self-abandonment. In a life of industry the industrial impulse may become as imperative as life itself, so that death follows upon the heels of release from toil. We may educate ourselves in kindness by practising it. Our cruel feelings may be stimulated by spectacles which use bloodshed or inhumanity as instruments of excitement. Should it pander to lust, the theatre strengthens the tyranny of man's lustful passions.

Habit, then, tends to regularize our conduct by canalizing the impulses that affect it. In its results it may be compared to the directive instincts that dominate the life of insects and give their behaviour such undeviating precision. But, below the channels which habit elaborates, the innate impulses seethe, fundamentally unchanged: so, indeed, we must conclude from the glimpses of human nature which we obtain when habits are shattered by strong excitement. In such moments individuals and races display the traits with which they were born, and we realize that habit, which appearing to transform character, in fact merely drills it, and depends very largely for its success upon the innate strength or weakness of the impulses which it endeavours to bring under discipline. The conflict between habit and character, and the inability of habit radically to overcome the more deeply seated impulses, is strikingly illustrated by the inconsistencies which we so frequently observe between the words and the conduct of individuals. Habit may guide the current of smoothly-flowing words, whilst the less plastic activities of practical conduct remain under the control of the innate impulses that constitute character.

A nervous reaction, once experienced, tends to repeat itself, irrespective of feeling. We easily contract subconscious habits. But its conscious repetition may be assisted or checked by memories of associated pleasure or pain; and it is very largely by their effect upon the formation of habits that these feelings may powerfully influence our ideas and behaviour. Thus the dangers and hardships of war have urged man towards peaceful habits in opposition to the promptings of his combative impulses; and since with increasing comfort the pain of wounds, of

hunger, and of exposure becomes more apparent, man has become more peaceful as his civilization has advanced.

§

Habit is the foundation of all that is conservative in our ideas and conduct. Representing, as it does, a response to an impulse of life, its action affords happiness, and it is accordingly able to form inclinations out of conduct or pursuits which have been forced upon us by circumstances. In some of its forms labour must be naturally distasteful. But by repetition it may become a dominating passion. We may wonder how mankind can tolerate such existences as that of a fisherman afloat throughout the winter on the North Sea, or that of a miner or a slaughterer. But to those who earn their livelihood in these fashions their lives have become habitual, and are, therefore, not merely tolerable but even pleasant. So is society supplied with willing servants to minister in the utmost hardship to its luxuries. Habit—not a desire for gain—is the force which consolidates trades and professions. To those who first enter them they are generally not more attractive than is to young children attendance at church. On the other hand habit weakens the spontaneity to which we are urged by our impulse towards change, and, since it reinforces itself by repetition, it tends to become the more powerful of the two, especially in adult life. If accepted undeviatingly as a guide of conduct it may render us altogether incapable of independent thought or action. We may see this tendency very clearly in the effects of such a habitual routine as is imposed by military discipline. It is notorious that soldiers who return to civil life are deficient in resourcefulness, and it

may be a vague apprehension of this deterioration which has rendered the British generally averse from military service. There are critics of our public schools who maintain that the discipline which they enforce, admirably calculated as it is for the training of efficient soldiers and administrators, cramps the lively activity that is needed for success in professions or callings which are less sequestered from the stressful competition of the struggle for life. Habit affects our ideas as well as our behaviour. It increases the effect of particular impressions, memories, and beliefs. Our devotion to games grows as we play them; our opinions on such subjects as religion, morality, and politics are hardened into prejudices which argument is powerless to assail. These prejudices are commonly miscalled "ideals." To compromise a point in a political or social dispute, may thus be stigmatized as the "abandonment of an ideal," and is rarely possible to those who have not outgrown the leading-strings of habit.

The obsession of a mental habit may spread from an individual to a people which then becomes overpowered by a fixed idea that may launch it into a useless and unjustifiable war, or into such comprehensive philanthropic resolutions as the abolition of slavery. The crusades resulted from a fixed idea which pervaded Europe during two centuries. A fixed idea has the effect of a habit in reinforcing the instinct which generates it, and the Press, by encouraging its growth, may bring to a bloody arbitrament such rivalry in progress as now breeds suspicion between England and Germany.

The tyranny of fixed ideas is strengthened if the reasoning impulse is completely satisfied by the vision of an accepted cause for every happening of life—if no blanks are left to be filled by

observation or enquiry. This is the condition of a people who are completely dominated by the authority of a religion, or superstition, which provides a specious explanation for every incident of man's experience. Without scepticism there can be no enquiry: science can make no appeal to a mind which attributes every happening to the visioned intervention of Providence or Fate. Such is, generally, the state of Oriental peoples, and they owe to it that they are so indifferent to new impressions, so firmly addicted to traditional practices. We may see in the material progress of the Japanese the effect of a strongly developed scepticism, which urges them to receive new ideas with attention and to investigate them carefully before rejecting them. A Turk, a Persian, an Indian is politely inattentive to suggestions for the improvement of his agriculture or processes of manufacture. A Japanese listens to them with the keenest interest.

§

So far considered habit is the enemy of freedom. But, with the strange contrariety which we may discern everywhere in life, it is also a means of gaining freedom. It enables us to redistribute the strain of the shackles with which we are fettered from our birth. By facilitating the action of particular instinctive impulses, it subjects us more strongly to their influence, and proportionately weakens the influence of impulses which compete with them. Often, indeed, the result is harmful. The propensity to drink is reinforced by indulgence: so may a child become addicted to sucking its thumb, or biting its nails—proclivities which are outgrowths of the instinctive actions of sucking and mastication.

But generally it has been of inestimable benefit to mankind. The impulses of charity, modesty, and decency would fare badly in the struggling crowd of emotions were they not assisted by practice. Our instinctive impulses may, as we have seen, be grouped in a series of pairs; and mankind has agreed that, of each pair, one is more desirable than the other, so selecting the social, provident, kindly, and self-restraining impulses as of particular benefit to society. Impulses of these classes, when strengthened by habit, are the moral ideals, which, commended by philosophy and sanctified by religion, have lit up the path of human endeavour. Habit may restrict the influence of religious reformers and radical politicians; but it affords civil governments some measure of stability, enables them to forecast with some confidence the drift of public opinion, preserves the decencies of civilized life, and is the basis of the conventional morality which makes people respectable.

§

Habit appears to influence the behaviour of all living creatures.¹ In the lower ranges of the animal kingdom it can find but little scope amidst the imperious mandates of directive instinct. As we ascend the scale, and the authority of instinct becomes less widely embracing, habit plays a part of increasing importance in regularizing behaviour. And, since habit is the outcome of experience, whereas instinct is a hereditary constraint, the field for individuality in action gradually broadens. Such conduct as in man is guided by acquired habits, amongst the lower vertebrates is very

¹ Plants show traces of memory or habit. They ordinarily make their strongest growth during the dark hours. But if day and night be reversed by the use of electric light, they will continue for a time to grow by the clock.

generally instinctive: it pursues the same lines throughout all the individuals of the species. All birds of a kind tend to build their nests according to a common plan, and are actuated by similar home-staying or migratory impulses. Wild animals that are caged continue to act as if the earth were below and the sky above them: squirrels will make believe to bury nuts: mateless birds will collect nesting materials as spring approaches. Domesticated animals, on the other hand, appear to possess a special aptitude for forming, individually, habits of their own: horses become used to riding or driving, and resent a change of service: dogs accommodate themselves to the domestic arrangements of their masters. It is, indeed, owing to this plasticity that they have been domesticated at all. Amongst wild animals behaviour which we speak of as habitual is very frequently instinctive. A tiger, after killing its prey, does not eat it forthwith, but lies up, near by, for some hours before commencing its meal—conduct which assists very greatly the sport of tiger shooting. This peculiarity is instinctive not habitual: it runs throughout the species. By instinct, not by habit, birds put their heads under their wings when sleeping: the penguin pretends to do so, although its degenerate wings afford no cover. A dog turning round before settling itself to sleep is also acting instinctively, not by force of habit: dogs, generally, preserve this survival from the past.

§

Can habit produce changes which become innate and hereditary? Has man radically improved his nature by the practices of civilization? Are we born more decent, more orderly, more

industrious than our forefathers? Could we answer these questions in the affirmative we might open before our eyes a vista of limitless progress. But experience affords little foundation for so encouraging a dream.

In respect to directive instinct we have, perhaps, some grounds for believing that habit may amplify the capabilities of this faculty by grafting new processes upon it. We have seen that it is impossible to attribute to experience many of its subtler and more complicated workings. But some instinctive processes, such as the turning round of the dog, plainly appear to have been generated by habit. The possibility of this is, however, strenuously denied by an influential school of biologists, who maintain that instinct cannot be affected by experience, and owes its multiform complexities to variations that occur in the reproductive cells of parents, quite independently of any new shifts to which they may have been put in gaining their livelihood. Many of the practices which appear to be habits that have, so to speak, crystallized into instinct, are, it is alleged, not innate but are learnt by imitation of parents or companions. Imitation no doubt accounts for more than may readily be supposed, especially in the behaviour of gregarious creatures. It seems that the fear with which wild birds regard man is not inborn but is caught from their parents: it may be imitation that leads the house-marten to build its nest under the eaves of house-roofs, displaying what appears to be an instinct that has been acquired since man began to build houses. But imitation will not account for the predilection of the mud-wasp (*Pelopœus*) for chimney-corners as sites for its nest: it lives a solitary life; it will build its nest in other places, and, so far as experiment can

throw light upon its propensities, it appears to have no particular preference for the spot in which it finds itself on emerging from the cocoon. Yet it seeks very persistently a site for its nest which has only become available for it since man has constructed substantial habitations. The American grey squirrel has the practice of burying nuts in the ground: squirrels taken from the nest when quite immature and reared in captivity will make believe to bury nuts in a carpet. The practice is then inborn, not acquired by imitation. Yet its beginnings may be more reasonably ascribed to habit than to casual varieties in a reproductive cell. We must remember that Life is not uniform in its methods, and we should not conclude that habit has been the origin of no instincts because we find that it certainly has not been the origin of some of them.

When, however, we turn from the lower animals to man we can hardly find the slenderest grounds for believing that habits have become hereditary. Lacking directive instinct he possesses no stock upon which to graft them. But he possesses aptitudes: might they not be strengthened by habits—by the culture of civilization? We may scarcely conclude so. We see that dexterity in games is as innate in Indians who have never played them as in Englishmen to whom they have afforded a pastime for many generations. The children of quite unlettered tribes, when brought to school, may display astonishing proficiency in learning arithmetic. Nor does it appear that habits of refinement are innately stronger in a civilized than in uncivilized races. How easily in the past has the light of culture been extinguished! How rapidly have civilized nations relapsed into barbarism! A child of European parentage reared in the squalor of an Indian

bazar, and transported to an orphanage, will not learn cleanliness and decency more easily than an Indian child under like circumstances. The Fuegian children, whom Darwin brought to England with him, rapidly acquired the externals of civilized life, although they had behind them centuries of primitive savagery. Habits of mind appear to regulate impulses by wearing, so to speak, larger outlets for some of them, and we seem forced to the conclusion that each individual in controlling his innate propensities must trust to himself and is not assisted by the customs of his ancestors. Nor need we regret that we are not hereditarily affected by the habits of past ages : else might we still be inclined towards cannibalism. What hope should we have of progress were our eyes blinded before birth by the errors of our forefathers ?

§

IMITATION.—We imitate when we repeat a sensory impression by translating it into nervous or muscular action. The sensory impression may be actual or symbolic—may be gathered by a perception of (so to speak) the thing itself or by means of signs or words. We may imitate skating because we have watched a skater or because we have studied a treatise on Alpine sports. The impulse to imitate is one of the strongest and most far-reaching of Life's manifestations. In animals of the higher orders it compensates for the waning force of directive instinct : it appears that some birds owe in a measure the uniformity of their nest-building and of their song to the example of their parents. By mutual imitation the mental development of young creatures is greatly stimulated : the intelligence of a puppy suffers if it is brought up alone :

street Arabs are markedly quick-witted. Imitation governs imperiously the behaviour of children and urges the young to acquire in a few years the habits which represent long centuries of endeavour on the part of their ancestors. Memorizing apart, the process of education is in fact a course of imitation: we carry out an instruction by imitating in action the impressions that we have acquired from it. In adult life imitative activity is strongly bridled by the force of habit. But it remains the chief stimulus to reform—the force which leads men from time to time to alter their ideas and behaviour. We owe to it, not only the transmission of our culture, from generation to generation, but the halting steps by which we have followed the lamp-bearers of progress.

A habit may be acquired by an original exercise of will, but in the vast majority of cases it is established by mimicking others. Imitation may, then, generally be described as the origin of habit. But a habit tends to become stronger than the impulse to imitate: it checks us from imitating things that are novel: it represents, in fact, the conservative propensity which is so strong in man's—and especially in woman's—nature. The history of mankind, considered in its broadest aspect, may be figured as a conflict between imitation and habit. Since the beginning of time men of original, or eccentric, disposition have been offering to their fellow-men novelties for adoption. Their ideas have generally been rejected. Habit has been too strong to admit of a reform, unless there have been circumstances to reinforce the impulse to imitate.

Amongst these reinforcing circumstances is the frequency of the impressions we receive. We rapidly pick up the accents or mannerisms

of those with whom we live; we may indeed begin to stammer if we associate with a stammerer, and are half-impelled to expectorate if we travel in America. Advertisements move us by their insistency. Personal influence receives the homage of imitation, especially from those who are not naturally self-assertive: one who is hypnotized abandons himself entirely to the suggestions of the hypnotist. Our imitative impulse is strengthened by the social instincts of veneration or sympathy. Children copy their parents, scholars their teachers, servants their masters: a hat, a necktie that is favoured by royalty—even a limp with which a royal person may be afflicted—is copied by loyal subjects. The inventions, or novelties, the imitation of which has gradually advanced civilization, have owed their adoption rather to the influence of authority than to their intrinsic merit. Religions have spread very largely through the conversion of princes; and the conquests of the past owe their enduring interest to the impulse that has been given by the authority, or prestige, of the conqueror to the assimilation of a language, an idea, or a custom. Sympathy, on the other hand, urges us to imitate our own kind. If one dog barks, or a jackal howls, the dogs and jackals of the vicinity start barking or howling. Sympathy breeds the respect for the crowd which impels us to act according to the opinions of the majority—to imitate behaviour which we see practised around us. A boy translated to a school, a recruit incorporated in a regiment, imitates a multitude of fashions, some of which may be ludicrous, and none would have attracted him in the environment of his home.

But habit also may be reinforced by feelings of reverence or sympathy. Inventors may search

long for imitators when their ideas are opposed to habits that are so strengthened. This was Galileo's experience; and it may be remarked that the commanding authority of Newton and Darwin has repressed, as well as stimulated, original research.

§

The imitative impulse influences the external actions of the body. May it not also affect its physical development? There is apparently no reason why we should limit the powers of mimicry to *conscious* behaviour: we may quite subconsciously acquire an alien accent. Many plants and animals will change their colour—some will indeed change their form—in a changed environment: many appear to have mimicked the colours of other animals, the colour and even the shape of the foliage amidst which they live. We search for a useful purpose in these transformations, and assume that they are protective. Some of them are: others are not. So also some flowers that may be attractive to insects are fertilized by insects: others, not less attractive in appearance, fertilize themselves. It is the fashion to hold that these "protective" devices are the relics of a multitude of casual variations which owe their survival to their incidental possession of some utility. On this hypothesis variations that have become innate owe nothing to the imitative impulse. It is, however, difficult to believe that random changes, however closely weeded by the struggle for life, could have led to the mimicry of leaves and twigs by certain insects, to the imitation of snow by some Arctic animals during the winter months. It may be urged that no instances are forthcoming of the development of a trait from its origin in individual mimicry to its

establishment in the breed. But, indeed, we could not expect to discover them in the few years which have been devoted to this enquiry. Many centuries would doubtless be required before a tendency to mimic evolves as a completed innate peculiarity. If we require instances of completed imitative action we have only to look about us with an open mind. In the present uncertainty of biological science we may take courage to suppose that imitation has also contributed to the spread of newly-arisen peculiarities from one individual to countless others—a marvel for which, if the novel trait is not actively helpful, the struggle for life affords no explanation. Why, then, it may be asked, should living creatures imitate some peculiarities and not others? We do not know. Children, it may be observed, copy some, but not all, of the peculiarities of their parents, and often select for their mimicry very unimportant tricks of manner.

CHAPTER VII

CONSCIOUSNESS

IN Consciousness and Will—in the faculties of appreciating the points of a question and of deciding upon them—Life displays its supremest manifestations. In shaping his behaviour, man has left the instinctive automatism of the insects far behind him. Instinct holds his hand, but is blindfolded, urging rather than guiding him. Habits may cling round him ; but they are of his own making. For the rest he is free. It is possible to imagine a machine that would illustrate the working of directive instinct, of sensation and reaction—even of reasoning inference. But no mechanism can be imagined that could develop consciousness, that could become aware of itself, or that could spontaneously decide upon the movements of its wheels.

The meaning of consciousness has been obscured by the theories that have grown up around it. We may translate it simply by the term “awareness.” In Chapter III we have found some reason for believing that a nerve-cell not only receives an impression and develops a muscular reaction in response, but *feels*, or becomes aware, of what has passed. The feelings of nerve-cells are no doubt of the vaguest, most shadowy character. But when concentrated in the nerve ganglia they take more substance and definition, and produce

the floating, effortless feeling to which the term of "subconsciousness" has of recent years been applied. This may, apparently, arise in a diffused or in a localized form—may produce a mood in the body as a whole, or may influence the behaviour of single organs. We are subconscious when not very deeply asleep, when indulging in day-dreams, when under the influence of an intoxicant or a violent passion; and there is reason to believe that impressions received, or emotions experienced, in this condition are registered by us separately from those which affect us in our conscious states. The existence of a localized subconsciousness—of a feeling that is experienced by an organ, or limb of the body—may be hard to believe; but it is suggested by many very curious phenomena in cases of hypnotism and anæsthesia. From these vague states of subconsciousness the concentrated and definite feeling of consciousness, or awareness, is developed. This is primarily a state of observation in which we mark the impressions, memories, and emotions which affect us: by a further development it becomes a state of introspection in which we take note of the actions of our various organs in response to stimuli; finally, by a still more elaborate outgrowth, it blossoms into a realization of self as a whole, into *self-consciousness*—the introspective observation of ourselves, under the influence of the various stimuli that are upon us. So are we not only aware of our impressions, memories, and emotions, but are aware that we are aware of them: we know that we are tempted, and we know that we fall. This extraordinary faculty is localized in the brain. When consciousness is acute the brain arrogates to itself functions that are ordinarily deputed to local nerve systems, such as the performance of those accomplishments that are

committed by practice to the ideo-motor machinery, and not infrequently fails in executing them. A fit of consciousness may unnerve the fingers of a skilled pianist, and make an orator forget his sentences. But however deeply we may probe it, however minutely we may analyse it, consciousness remains an insoluble enigma. We speak of it as an instrument. But does it not appear to be ourselves? It is from one point of view the microscope, from another the microscopist. It is aware of itself. To materialistic philosophers it may appear to have sprung from some strange fermentation in the vessel of Life; but it soars aloft, like the genius of the Arabian tale, overshadows its vessel and critically examines it. By many it has been identified with the human soul. But the genius may be reimprisoned by sleep, by intoxication or by a fit of passion: it will vanish before a slight concussion of the brain: hypnotic influence affects it strangely. It has the powers of a magician; but it is as unstable as a dream.

§

If we can believe that each nerve-cell may develop a rudimentary feeling or consciousness of its own, we may arrive at some explanation, indefinite though it be, of the power of the brain to apprehend the memories and thoughts which stream through it. How are these intangible shadows brought within the grasp of consciousness? By, we may suppose, sympathetic and reciprocal action of the "awareness" of the nerve-cells, which communicates to one cell the happenings in another without need of any special transmitting machinery. And if nerve-cells, in virtue of their inherent "awareness," can communicate with one another they can communicate across space; for within the cavity of the skull

they are separated, in some cases, by space that is by no means inappreciable. If they are not isolated from one another by space that is within the body, neither need they necessarily be isolated from one another by space that is outside the body—in fact, the nerve-cells of one body may be able to communicate with the nerve-cells of another body if their awareness is actively reciprocal. In this thought we may find an explanation of certain very curious manifestations of sympathy between different individuals—of intimacies which seem to lay bare the innermost moods, and even thoughts, of one friend to another, and of the puzzling phenomena of thought-reading, telepathy, and hypnotism. The remarkable affection that binds dog to man may be due to a certain innate responsiveness in the attunement of their nerve cells which enables one to sympathize with the other. Most lovers of dogs will affirm that they can read the mind of a dog as intimately as that of a human companion. At night, in the tropics, the trees are haunted by myriads of fire-flies, which flash their light sometimes independently, but at other times in most exact¹ accord with one another, so as to illumine the foliage as by a gleam of lightning. They must time themselves by such a feeling of sympathy as we have been considering: and we may, indeed, hold that their simultaneous flashing illustrates the sudden processes which sweep through our brains when we cogitate and form conclusions.

If the faculty of consciousness is inherent in a sensitive cell, it must be possessed, in however rudimentary a form, by all living creatures. But self-consciousness appears to be a refinement that

¹ Similar concerted action commonly occurs in the insect world, and is very noticeable in the accurate evolutions of a flight of gregarious birds.

is a monopoly of mankind's. We can, of course, only judge of the mental states of the lower animals by observing their behaviour. Dogs may show some slight traces of self-conscious bashfulness. Other animals do not appear to experience this feeling.

§

We are surrounded with things that are inexplicable: self-consciousness is the nearest to us of them all. It appears, from the phenomena of hypnotism, to be a delicate outgrowth of consciousness, which may, so to speak, be amputated without depriving our conscious faculties of their acuteness, although their purposeful unity is withered by the severance. The most striking, and probably the essential, feature of the hypnotic condition is the complete loss of self-consciousness—the indifference of the hypnotized person to the figure which he may present to bystanders, and his readiness to behave in a manner which would ordinarily cost him agonies of shame. There is no failing of awareness to externals: his consciousness of impressions, and of the movements of his own limbs, may indeed be abnormally effective, enabling him to overcome difficulties which would ordinarily baffle him. At the same time he becomes exceedingly amenable to suggestions: the imitative impulse completely dominates him. He acts, it is true, only upon the suggestions of the hypnotist, and this seems to indicate that the imitative impulse is swayed by an influence subtly exercised by the hypnotist's mind. These conditions are not unparalleled in ordinary life: the less self-conscious a man is—the less he is impressed with a sense of his own individuality—the more prone he will be to mould his behaviour upon that of others; and we are

all disposed to copy those who influence us through our feelings of admiration or respect. The abnormal acuteness of the faculties when under hypnotic influence is also illustrated by common experience. Our energy and skill are at their highest when evoked by an impulse that is strong enough to make us forget ourselves: there are few who have not suffered from the paralysing effect of a fit of self-consciousness. The hypnotic condition can be brought about in various methods, and it is difficult to isolate the actual cause. But it appears that in all cases the attention of the person who is to be hypnotized must be attracted and concentrated, and it may be that he loses his consciousness of himself by strengthening his consciousness of externals—that the concentration of his ordinary perceptive awareness costs him the temporary atrophy of those tender shoots which we have figured as representing consciousness of self. So we all know that self-consciousness vanishes when we are engrossed in study, or in any pursuit which absorbs the whole of our attention.

If our faculties are appraised by their practical helpfulness in the struggle for life, self-consciousness appears to be an injurious superfluity. If acute it may interfere, not only with the exercise of acquired dexterities but with the performance of our instinctive bodily functions. There is no more fruitful cause of "foozling" on the links than self-conscious thoughts of our style at the moment when our attention should be concentrated upon the ball. If self-consciousness is exceedingly acute the limbs may fail, the articulation of speech become difficult, and even the beating of the heart may be interrupted. These are the terrors of a bashful man. But if we consider the causes that have led to the ethical

progress of mankind, there are none that have been stronger, or more beneficial, than the appreciation of oneself. Modesty and decency owe their origin to it. Consciously valuing our own personality, we come to respect the personality of others, to regard them as, in some measure, our equals, and entitled to our sympathy. Refined by such ideas the instinct of kindness has carried us far beyond the elemental impulses of indiscriminate benevolence: our philanthropy is thoughtful as well as generous, and our charity is dispensed in such fashion as best to save the self-respect of those who receive it.

Self-consciousness is self-assertive, and under its influence a revolutionary change is taking place in the feelings with which social and political institutions are regarded. In former days they were supported by the social impulses of reverence, loyalty, and deference: these do not appeal to self-consciousness: individualistic (egotistic) impulses come uppermost when we think of ourselves, and in this mental condition loyalty of any kind would be hardly possible could a basis not be found for it in our self-esteem. If a government or an institution is a credit to us we may reasonably adhere to it for the most selfish of motives. In fact, whereas formerly we were patriotic because we desired to be a credit to our country, we are now patriotic in order that our country may be a credit to ourselves. To win our support a social or political institution or ideal must gratify our self-esteem, either by associating us with its activities or by marking us with the distinction of an exclusive peculiarity. To be popular, government must rest upon the votes of the people. Dependent nationalities such as the Czechs, the Irish, and the Welsh, fortify their self-respect by reviving their racial

languages. These feelings may seem very petty compared with the uncalculating loyalty of our ancestors. But we must not hastily condemn them. They certainly make for self-improvement. And they probably will conduce to peace. Those who love their country because it is of advantage to them, are not so likely to shed their blood for it as those who regard its welfare as an object in itself. And if self-consciousness, by increasing the influence of the individualistic impulse of self-assertion, is weakening the social impulses, and is, so far, loosening the bonds which are the primordial mainstays of society, it is providing an antidote for this disintegration. By accentuating the impulse of kindness it is swelling a force which will link mankind together as effectively and upon a broader basis.

§

The fruit of self-consciousness is the idea of personality, the notion that we are not part and parcel of the Nature around us, not merely members of a family or tribe, but are individuals, each with a sphere of his own. The genesis of this idea does not appear to lie very far back in the development of mankind. We can discover signs of its growth during the period of recorded history. It is hard to enter into the mind of a savage. But from the completeness with which in savage life the interests of the individual are submerged below those of the family, or the tribe, we may infer that a man is hardly conceived as an independent personality : he is of consideration only as a member of a group : it is the group which has an independent existence and is responsible for the conduct of each of its members. A similar idea also pervaded ancient law, which hardly recognized any rights or responsibilities that were

not common to the family, the clan, or the neighbourhood as a whole. In grammar the idea of personality is expressed by the nominative case of the first personal pronoun : in Sanskrit and most European languages this differs radically from the oblique cases—a distinction which perhaps marks the growth of a consciousness that man, when he comes to the front of the stage, should be distinguished from man when he stands back with the rest of the company. Beyond a doubt, go back as far as we may, the leaders and rulers of the people have had a very clear idea of their personal importance : the proclamations of the kings of Egypt and Assyria were drafted in a vein of most flamboyant self-conceit. But their egotism was as naïve as that of the patriarch of a herd of antelope ; and they regarded themselves rather as instruments of the Divine than as independent authorities. Amongst the common people, not a flicker appeared of independence or self-respect. There were, in those days, no popular revolutions : history was concerned with the fortunes of dynasties. Indeed, in classical days the condition of slavery was accepted by white men with an apathetic contentedness which to modern ideas appears very strange. Self-consciousness appears to be a faculty the authority of which has increased of recent years, and is still increasing, under the influence of egotistical habits of mind.

§

In consciousness, as in a mirror, we see reflected the drama of our inner lives, the impressions and memories which guide and pay court to us, the impulses which tempt, cajole, or admonish us, the habits which constrain us, and the balancing deliberations of our reason and will. We see

not only the forces which act upon us, but our behaviour under their influence, and (to use a homely comparison) the spectacle gives us such assistance as we derive from a looking-glass when dressing ourselves.

Consciousness marshals our perceptions and recollections for reasoning analysis. It converts, so to speak, a disorderly pile of literature into a well-arranged library, classifying a store of desultory information into definite knowledge, which can be used to correct the instinctive propensity to link together, as cause and effect, events that are not essentially connected, merely because one has followed the other in our experience. We owe it to knowledge, for instance, that we can deny that the state of the atmosphere upon St. Swithin's day determines the course of the weather during the forty days following.

Consciousness, further, sharpens the edge of the reasoning faculty by which we appreciate the *properties* of things. We perceive that a red flower is not an indivisible whole—to be taken as it stands—but is a flower that possesses the property of redness. Our grasp of this property is styled “conception” as opposed to our “perception” of the flower as a whole. Consciousness enables reason to go further and to apprehend that properties may have properties of their own. Reason sees that a flight of three birds has the property of “threeness”: assisted by consciousness it sees that “threeness” has the property of being *number*, and can be classed with “fourness” and “fiveness”: so also it can distinguish the property of *shape* in roundness and squareness, of *colour* in redness and blueness. Properties are, in fact, figured as abstract ideas, and we gain such concepts as those of sweetness, bitterness, virtue, and vice. Nor

does the process of analysis stop here. In the light of consciousness we perceive and regard as properties the fundamental links between one impression and another, by which we instinctively weave our impressions together. These links are idealized into relationships in space, in number, in appearance, or in sequence: so we obtain conceptions of geometry, of arithmetic, of classification, of logic, and of cause and effect. These conceptions, refined again and again by this process of discrimination, yield us the materials for the most abstract investigations of science and philosophy. By this dissection of properties we perceive, for instance, the relations which are expressed by grammatical sentences: we analyse an occurrence into agent (nominative) action (verb), and affected (accusative), and apprehend the various conditions, qualifications, and possibilities that are expressed by varying the verb in mood and tense, and by the use of adverbs, prepositions, and conjunctions. We can trace the process of this analysis by observing its imperfections amongst backward races. Some of the indigenous tribes of South America have never completed the dissection from which the verb emerges: they have, for instance, a word for washing clothes, but none for washing in the abstract.

But man would have remained as dumb as the brutes had conscious reason not brought him to perceive the property of *symbols*, and to understand that a thing may be represented by a sound, a gesture, or a sign, which is not inseparably connected with it, but can be dissociated from it if we please. In primitive stages of reason, symbol and object are merged indissolubly together: to a terrier the word "rats" is linked inseparably with the memory

of a rat hunt : an idol, to a savage, is the deity itself. With the discovery that words could be employed as transferable signs it became possible to form a language. But men took time to appreciate the usefulness of words as representing objects. At a time when Rome had long been founded, land could only be transferred by handing over a clod from its surface. Without the use of words the processes of reason could never have outgrown their primitive stage, for it is only by words that properties are distinguished—are, so to speak, mounted for examination. How could we consider the intricacies of logic if our ideas of them were only to be expressed by gestures ?

Not less momentous have been the consequences of the discernment of properties upon the material practical life of man. It has enabled him to invent tools and machines. A stone, with which he has killed an adversary, is perceived to be of value not as a stone but as a missile, and the way is open for discovering other missiles. So have been invented the appliances which man has turned against Nature to limit her tyranny, converting her wildernesses into fields, and her fibres and timber into clothing and houses : so also the weapons which man has fashioned for the destruction of his fellow-men.

In the light of consciousness our instincts also become amenable to analysis. We can dissect our emotions, and compare them, estimating, for instance, how far our conduct is actuated by selfish and how far by social motives. Our vague æsthetic and ethical impulses are dissolved, refined, and crystallized into systems of art and morals. We can also observe and appraise our habits. Consciousness, then, provides the will with the material that it requires for the exercise

of its powers of choice. It sets before the will the impulses of instinct, the promptings of habit, and the inferences of reason, so that the will has before it, so to speak, a catalogue of the various courses that are open for adoption. The catalogue is often exceedingly incomplete. The suggestions of instinct and habit are faithfully presented; but the inferences of reason may be a travesty of those at which a cultivated intelligence would arrive. Thus the case for burning a witch will give full weight to the instinct of fear, and the habit of persecution, but will be ludicrously inadequate in the inferences which are marshalled to justify the act.

§

Consciousness has assuredly been the most potent of the influences which have raised man above the brutes. But it has led him into errors and unhappiness with which the brutes are not troubled. They are not distracted by the superstitions of magic and fetishism; they do not mutilate themselves, torture their fellows, or endeavour to exterminate their own kind under the impression that they are earning merit. These, it may be said, are errors of reason, not of consciousness. But reason is misled by misapprehending happenings, or drawing wrong inferences from happenings, with which it would not concern itself were they not set before it by consciousness. The reasoning powers of a monkey are not exercised over the cause of a toothache, or a plentiful crop of nuts, because it is not conscious that these events are causally connected with anything that precedes them. And, beyond doubt, consciousness has increased very materially the tale of human unhappiness. It overshadows us with the foreknowledge of death—also, it

should be added, disposes us to seek the consolations that are offered by religion. It deepens into misery the irritation which proceeds from an unsatisfied impulse : if we are moved to acquire a thing, consciousness brings home to us the bitterness of failure. And it afflicts us with the anguish of repentance—that feeling which arises from the failure of the conscious will to hold its own against the temptations of instinct. The freedom of the brutes from these refinements of trouble moved Walt Whitman to envy them :—

They do not sweat and whine about their condition ;
They do not lie awake in the dark, and weep for their sins ;
They do not make me sick, discussing their duty to God ;
Not one is dissatisfied—not one is demented with the
 mania for owning things ;
Not one kneels to another, nor to his kind that lived
 thousands of years ago ;
Not one is respectable or industrious over the whole world.

I. *Errors of apprehension.*—Before consciousness are unrolled two sets of images—the sensory impressions, representing actualities, and the recollections, or memorial visions, that are conjured up by the memory. The latter may be exceedingly distinct, and are generally very distinct during childhood and in persons who are weakly endowed with critical powers. Their verisimilitude is heightened by the faculty of visualization—or seeing an image in detail—which appears to be strongest when reason is weakest. Children are easily disposed to see ghosts in the dark, and savage life is overshadowed by mysterious hauntings. But the seeing of visions is not confined to the young or the uncultured. Many men of intelligence have been troubled by hallucinations—of presences or of voices—whose unreality can hardly be established

by the assurance of their friends. Dreams may be so impressive as to leave some conviction of reality: in early days they were, indeed, regarded as intimations of realities, and their interpretation has influenced the course of history. In savage communities they are still accepted as communications of fact. A sensory impression is shown by touch to be based upon reality. Can a real foundation be denied to an insistent vision which only critical thought could assign to memory? We see an object when our eyes are open: we also see it when our eyes are closed. If the first image was caused by the object itself, the second must be caused by the object's "double." By such an inference men easily persuaded themselves of the duality of things, and came to believe that the possession of both body and soul—as of substance and shadow—was the normal condition of the objects around them, whether living or lifeless. This conclusion became of poignant interest when applied to man, and the deeper we go into ancient history—or into the practices of existing barbarism—the stronger conviction we find of the existence and persistence of a human soul. A hill-people of Assam, when burying a kinsman, fence the grave with a hedge of thorns, in fear of which his tender spirit will be content to remain in confinement underground. The most elaborate and practical conceptions of the needs of the soul are perhaps to be found in the religions of ancient Egypt and of modern China. In Egypt the "double"—or *ka*—of the deceased was provided with all the equipment which would enable it to continue in shadowland the life of its earthly counterpart; but since the *ka* was a "double," the articles provided for it might be "doubles" also, and could be supplied in the form of effigies or symbols. Such meticulous

care for matters of practical detail is also a feature of Chinese funerals: when the dead, as often happens, are not buried for some time, and their coffins are deposited in vaults round a "garden of the dead," each vault is furnished for the soul's enjoyment; and, when the relatives periodically assemble to do honour to the dead, a chair is left vacant for the soul's accommodation. Similar memorial services, marked by such concrete acknowledgments of the soul's existence as the offering of food, bound families together in Rome, in Greece, and in India, and made a deep impression upon the national laws.

II. *Errors of inference.*—We are instinctively impelled to link together happenings which follow one another in sequence. This is the basis of the process of inference upon which we depend every moment for the guidance of our behaviour. If one wasp stings us we avoid another. The connection of two events in sequence, seen in the light of consciousness, appears to be that of happening and consequence—of cause and effect—and we conceive of causing and being caused as inseparable properties of happenings, just as we conceive of colour and of number as essential properties of all things. Accordingly we link every happening backwards and forwards—as being caused by another happening, or as causing another happening—and we are disconcerted if a cause is not evident for every occurrence. Observation is an imperfect guide where knowledge is elementary. In simple matters it may guide us correctly enough. One who touches fire is burned: the burn is justly attributed to the fire. But the vast majority of life's experiences are not simple: they are preceded by a number of happenings, any

one of which may be the cause. There is no room in the mind of an uncultured man for the idea of chance or accident: the acknowledgement of ignorance is a sceptical refinement that is out of accord with the first promptings of our instinct to infer. Accordingly, where causes are not discoverable by his observation, he is ready to accept as such any ideas that are suggested to him with a show of authority, although they may be derived from visioned as opposed to observed experiences—are the fruit not of observation but of imagination. So he may believe that rain is caused by the performance of a magic ceremony. Thus was opened a curious chapter in the history of mankind. Its last pages record the achievements of science and philosophy: but, for the most part, it is an account of extraordinary error. A conception of cause and effect has enabled man to put the earth into a balance and to determine the chemical constituents of the stars. For untold generations it has led him to believe in the grossest extravagances of magic and witchcraft.

Children display very instructively the beginnings of these delusions. They are insatiably curious respecting the causes of things, but they accept without question the answers that are given them, whether as to the constitution of the moon or of the origin of babies. So is the rapacity of a dragon accepted in India and China as the cause of an eclipse of the moon. Unending would be a list of the errors to which man has been committed by an imperfect use of his reasoning faculties. Fetishism, magic, witchcraft, and astrology: belief in a fateful connection between man and various animals, which are adopted as *totems*, worshipped as protectors, dissected as a means of discovering the future and eaten in the hope of appropriating their qualities: the ascription of

the forces of Nature to divine personalities, the worship of the sun, of fire, and the upgrowth of myths that appealed very strongly to the æsthetic instinct : sacrifice as a means of propitiating evil—even human sacrifices to safeguard great undertakings such as the opening of a campaign or the building of a bridge : customs which plumb the depth of absurdity, such as the *cowade*, which obliges a father to take to his bed on the birth of a child and eschew all food which would be harmful to the infant.

Such are the errors which have sprung from the first imperfect effects of consciousness. As this faculty has gained strength it has gradually dispelled them by the assistance of accumulated knowledge, which sifts out, and rejects as causes, such happenings, or properties, whether visioned or imaginary, as are only accidentally connected with the occurrence for which an origin is being sought. Blanks in the chain of inference—confessions of ignorance—are preferred to links which will not bear examination, and we are content to ascribe to chance or accident events that cannot be explained by experience. These blanks have opened a field for the entry of science : there was no room for scientific inquiry when the inferring impulse insisted upon being satisfied by the vision of a cause for every occurrence.

In these modern days science is supported by the close deduction of effects from causes, and we are gratified to observe that its flights are ever attaining higher altitudes. But there are countless relics to remind us of our descent from our ancestors. In Mediterranean countries people commonly believe in the evil eye : nearer home there are those who would not sit down thirteen to table, who think it lucky to touch wood, unlucky to spill salt, and put their trust

in a mascot. Nay further, unreasonable inferences may seriously affect the course of politics: should prices rise there are multitudes of voters who will hold the ministry in office to blame. Nor is science itself quite free from the illusion that happenings which transcend our powers of conception can be strung together by reason as cause and effect.

III. *Unhappiness*.—We enter here upon the workings of Conscience, that influence which, through unhappiness—or the threat of unhappiness—controls all but the most lawless of men. Conscience appears to us in the guise of a judicial authority which commends or reproves us according as we obey or disobey certain rules of conduct or laws—it may be human, or divine. But no rule or law affects our conscience unless it has been adopted by our will, either as an original resolution of our own or on the authority of the society to which we belong. A Mohammedan does not repent of bigamy or a soldier of looting. The prick of conscience which leads to repentance, results, then, from a failure of the will to assert itself—a failure which our consciousness glaringly portrays; it is unhappiness that arises from the dissatisfaction of the will, which resembles our other impulses in causing us distress if its cravings are unfulfilled. This feeling has reinforced very potently the efforts of authorities, whether religious or civil, to restrain human conduct from disorder which would break up society. But, however useful to the community, repentance is unhappiness to the individual: to one of sensitive character it may indeed be torturing anguish.

Misery rather than unhappiness is the lot of those who are afflicted with imperious impulses that conscious will impels them not only to

restrain, but to conceal, even from themselves. In such a case the satisfaction of the will is a poor recompense for the denial of the stronger instinct: the baffled impulse becomes an obsession, at some times shaking the mind with fits of nervous excitement and depression, at other times engulfing it in the profoundest religious melancholy, occasionally even sweeping it away into the whirlpool of insanity. No one whose ears have not been filled with the rushing of these waters, whose hands have not been thrown up in the helplessness of despair, can realize the words of the Psalmist—"Out of the depths have I called upon Thee, O God."

The instinctive origin of this melancholy may be traced in the symptoms that are manifested in its extremest cases. Insanity that has developed out of profound depression is commonly marked by a most surprising display of elemental instinct. Patients exhibit impulses and knowledge which are in the most violent disaccord with their former dispositions: their characters appear to have been completely changed by their disorder, indeed, they may seem to be possessed by a diabolic spirit. In fact, the restraints of consciousness having been withdrawn, instincts have been freed which had been straitly confined by the will. They may have been penned altogether within the domain of subconsciousness, so that their existence was not apparent to the victim whom they tortured. But they fed upon his vitals, and distracted his moods, with the swayings of a violent internal struggle.

Release from such an obsession will rarely be obtained by any striving of the conscious will. Instinct must be countered by instinct: depression will vanish before the impulses of hunting, fighting, or drinking. But the completest and

most abiding relief is to be found in that instinct for self-abnegation which underlies our æsthetic emotions. Accepted as a counsel of despair, self-abandonment would only set free the demons; but, proceeding from the influence of the æsthetic impulse, it is not merely the hopeless relinquishment of a struggle; it is an emotion that is strengthened and illuminated by feelings of adoration, trustfulness, and love which give the beaten soul an assurance of victory.

§

Man's instinctive expectation of a cause for every happening appears to be the origin of the sense of injustice which has influenced incalculably the ideas of individuals and communities. If I am industrious and of good conduct—if, that is to say, I act in accordance with the teaching I receive—I ought, on any reasonable view of things, to be prosperous. Success is always held out as, at all events, an incidental fruit of righteousness. But, as a matter of fact, this expectation is constantly belied. We see good men in trouble and oppressed, the wicked flourishing in prosperity, often, indeed, obtained by the oppression of the good. The crops of the religious are blighted, whilst those of a blasphemers come to harvest. This does violence to our reasoning instinct—our impulse to infer—and renders us dissatisfied and unhappy. Since first man became conscious of his condition his cry has gone up against life's injustice. He may, in some degree, be reconciled to it by habit. And religion offers him potent consolations. It urges that what appears to be injustice is the consequence of sin, is a discipline for the character, or the inscrutable ordering of an All-wise Providence, to be accepted without question in trusting self-abandonment.

The Psalms are inspired by these messages of comfort: for centuries they have calmed the distressed and strengthened the faint-hearted amongst every denomination of Christians in every country of Europe. Christianity offers a more substantial solace: the wrongs of this life will be redressed hereafter: even the injustices of death are only passing. The doctrine of Fatalism offers no hope, and is content to point out that preordained fate is the cause of both justice and injustice. Yet it has reconciled millions of Orientals to tyranny, poverty, and degradation. But these explanations are not always convincing: at times men violently reject them, and, inferring that their wrongs are capable of being remedied, set their hands to strikes, riots, and revolutions.

CHAPTER VIII

VOLITION

IF we examine the processes by which we form resolutions, or "make up our minds," we shall find that it is only in a small proportion of cases that we can claim to have acted spontaneously, or by the exercise of free will. Our conclusions are generally suggested to us by habit, by impulses which we do not control, or by the people around us. Thus, when I awake in the morning, I am sensible of a struggle between a desire to remain in bed and a desire to get up. I make up my mind to get up, and do so. But in reality my mind was made up for me by habit : I rise because it is the usual hour for rising. I prove that this is so by rising about the same hour every morning—a consistency of behaviour which could never be expected did I exercise every morning an unfettered spontaneity. On the other hand, at times I appear to act entirely of my own accord, and untrammelled by habit. I may suddenly determine to rise an hour earlier than usual on Midsummer Day, to take a stroll before breakfast. We may then class our resolutions as of two kinds—suggested (or imitative) and original. I may invest money in oil shares because I am infected with the excitement of a "boom" in oil : in this case my decision has been suggested to me. Or I may invest after carefully examining market reports, and comparing the prospects of

oil with those of other enterprises : in this case I have formed an original decision.

Resolutions that are suggested are formed very easily indeed. But an effort is required to make up our minds when there is no assisting suggestion. The effort may be accompanied by a good deal of mental perturbation. Many of us have experienced the annoying perplexity that may be occasioned by the necessity of making a spontaneous choice—it may be in the purchase of a necktie or a wedding present : we should feel thankful were there only one article in stock which could possibly be selected, and we hail with relief any suggestion the shopman may make to help us to a conclusion. We are sometimes even impelled to go by the chance result of a “toss up.” To most men life would be unendurable did it require them very frequently to form conclusions by spontaneous judgment : they are content to be led by habit or suggestion.

§

When we act upon a suggested resolution we cannot, of course, claim to have exercised spontaneity or free will. There is a large and influential school of thought which denies that our behaviour is at any time spontaneous, asserting that resolutions which bear all the appearance of originality are in reality forced upon us, and merely give effect to suggestions that can be detected if we cast our eyes backward in search of them. My determination to rise early was the outcome of a casual glance at an almanac : my preference for oil shares was prompted by a remark which I chanced to overhear in a railway carriage. It is impossible to disprove this theory. The action of our brains is limited by experience ; it is compelled to mould itself upon the past, and

every decision that we form can without doubt be connected with something that has occurred to us. On the other hand, the theory appears to be equally incapable of proof, for it cannot be shown that the happenings to which it points as having *caused* our action did not, in fact, merely have the effect of *conditioning* it. I cannot eat *unless* I have teeth: but I do not eat *because* I have teeth, but because I wish to do so. A young man adopts an Indian career after casually reading a book on the Indian Services: if he had not chanced upon the book, he might have lived his life in England. But he goes to India not because he read the book, but because he was disposed to try the new. Had he not possessed this disposition, no book would have moved him: possessing it he is ready to receive from any source information that enables him to see his way to a career towards which his bent inclines him. It is, then, his disposition, and not the reading of the book, that is the true cause of his resolution: the latter is merely a condition.

But, it will be objected, this argument merely shifts the cause further back: it is his disposition, not a choice of free will, that sends him to India. It is true that we can hardly escape from the sway of our instinctive impulses: but in man these impulses are so conflicting and of so general a character that they leave ample scope for the exercise of free choice in giving play to them. That we possess a measure of independence is shown very clearly by the process of "fixing our attention." Our attention may be attracted by an object subconsciously, in which case, of course, no question of spontaneity arises. But it may also be fixed by an effort of will. We are conscious, very distinctly indeed, of possessing the power of fixing it upon anything that we please;

and the effort which it costs us to do so seems to prove that the process is actively original, and is not the resultant of predetermining impressions.

The "determinist" theory, which denies the existence of free will, is attractive to those who are inclined to view Life as the result of mechanical or chemical causes. If Life is simply a series of reactions to external stimuli, there is no place in it for either consciousness or free will. Free will may be ruled out of existence, as an illusion, if we dignify as the *causes* of our behaviour the facts of our experience which necessarily *condition* it. The existence of consciousness cannot possibly be denied. But it is regarded by this school of thought as a functionless superfluity, to be compared with the sparks that fly off from an electrical machine, the shadow of a moving object, or the humming of a top. Yet in spite of these explanations we feel that we possess free will as well as consciousness, and can use them for active purposes. We can treat consciousness as an accident and free will as an illusion only if we disregard introspective observations which, in such a matter as the appraisalment of our mental faculties, are an infinitely safer guide than inferences that are based upon our experience of inanimate things. The most materialistic of philosophers does not venture to repudiate altogether the promptings of these feelings. He will not deny the existence of consciousness. But he distrusts their revelations when they contradict the conclusions to which he is led by the inferences that he draws from material happenings. We are, however, compelled to trust to introspection for most of the knowledge which we possess of our mental processes, and it is unreasonable to discard it, in one province of our enquiry, simply because its promptings are out of accord with our experi-

ence of material energies. If we place any trust in our self-conscious powers of observation and analysis, we must arrive at the conclusion that spontaneity, or free will, guided by consciousness, is not only a vital force, but that it is the highest and most wonderful of the vital forces that are manifest to us: it lies at the extremest limit of the territory which Life has won in its struggle with the Matter that fetters it; and in its capricious irregularity it presents the strongest contrast to the uniform, calculable energies that are displayed by Matter when unallied with Life. Practically, of course, we know very well that human nature introduces an unpredictable element into our experiences.

And, if the majority of men are content to regulate their lives by the suggestions of others, or by habit, and make no original use of their wills except to decide trifling questions of every day routine, those who aspire to lead their fellows are generally characterized by strong will-power, which is, indeed, often their only title to ascendancy. So also with the men who have led human progress by their inventions, whether in forms of art, or in standards of conduct, or in material contrivances. Free will is distinct from the inventive impulse: it is a disposition towards choice, not a motive towards construction. But it is obvious that an inventor must use it very largely in selecting and combining the ideas that occur to him. Man owes his moral and material advancement, as well as his social organization, to the exceptional powers of volition enjoyed by some of his kind. He has risen above the brutes, little by little, through the inventive spontaneity of a few of his species, to whom it has occurred to suggest changes of idea or of habit. Some of these have been adopted through

the assimilating force of the imitative impulse. Others have been derided, or neglected, and forgotten.

§

There are, however, limits to the spontaneity of the most eccentric of men. His wildest vagaries are circumscribed by the range of his experience. So also with the inventive impulse: the most original designer merely expands or applies ideas that have been gathered by him from outside, or combines several of them together. Free will cannot, then, open a new and original path of action for itself: it can do no more than select one out of the various paths that are offered by instinct, by habit, by imitation, or by reasoned inference. It is, in fact, concerned not with invention, but with choice. The questions with which we are confronted differ immensely in complexity according as they are concerned with alternative *methods* of satisfying a single impulse, or with conflicting *impulses*. Influenced by the instinct of benevolence, we may be doubtful of the particular charities to which we should subscribe: we may hesitate over the dishes wherewith to satisfy our appetite, or, having determined upon a visit to France, over the advantages of the routes by Calais or Boulogne. These are only questions of method; but if the alternatives are very nearly balanced, neither scale being weighted by any strong feeling on our part, a distinct effort will be needed to decide upon one or the other.

The strain upon the will is much greater when the alternative that confronts it is not one of methods, but of conflicting impulses, as, for instance, between an impulse to show ill-temper and an impulse to be kind, between an impulse to take ease and an impulse to work. In such a

case the will is tried very severely, often, many of us have felt, beyond its strength. But, by persistent effort, a man of character may gradually reinforce the weaker of the two impulses until the tendency for which he strives becomes a habit. Then the battle is won: the will has triumphed. The will may be assisted in this struggle by the infliction of punishment—by the association, that is to say, of pain with the successful predominance of the impulse which it is desired to subdue. Punishment, or penance, may be self-inflicted, and may be used by the will itself as an instrument to weaken a persistent assailant. So St. Paul by “buffeting” his body and “leading it about as a slave,” accustomed unruly impulses to live in servitude.

This is, however, a triumph which is reserved for the strong. An impulse may be naturally so forceful, or have been so encouraged by habit, as to be irresistible: the will may choose the better, but, however fortified by conscious reason, cannot turn us from the worse, and our prayer must be to be spared from the temptation. So a drunkard or debauchee may be well aware that he is ruining himself—may wish in his heart that he could resist his proclivities—but is unable to fight against them. The tempter may, however, be subdued if the assistance of a rival impulse can be enlisted against it. Drunkenness, which will not yield to the reasoned counsels of moderation, may be conquered by other impulses, if the allegiance that is given to them is complete. Fear may be driven out by blood-thirstiness. Instinct must be countered by instinct: but our will may assist us to set up this antagonism. One who is enslaved by a passion may, by an effort of will, conjure into activity an impulse that is derived from the æsthetic or from the ethical

instincts that are inherent in us all ; and, if he will surrender himself completely, will make no reservations, but will bind himself by vows to utter obedience, he may develop force that will enable him to outmaster his familiar demon. Here again, punishment may be helpful in undermining the control of the dominant impulse. In the nature of the case it can hardly be self-imposed, and is in many cases inflicted by the State. But although it may weaken the unlawful propensities of a criminal it cannot be trusted to reform him. To establish such a change it is necessary to awaken some dormant impulse which will give him a new object in life.

§

It will, perhaps, not be altogether fanciful if we see some connection between the development of spontaneity, or free will, and the individuality, or separateness, of living creatures. Life does not appear to pervade space ubiquitously, like the energies of gravity or electricity : it is distributed amongst a number of isolated closed vessels, for as such may be considered plants and animals. Each of these is a separate centre of energy. In dividing itself amongst millions of different carriers Life has reserved possibilities of activity which would have been lost were it diffused through a continuous mass of living *plasma* or tissue. A structureless living jelly (*Bathybius*) appears to cover large areas of the ocean floor : but, if the original type of living matter was of this kind, it was abandoned for the cell, the distinctive feature of which is *separateness*. It is only in the lowest ranks of the animal and vegetable kingdoms that cells have fully preserved this characteristic : higher up the scale they have cohered into masses, exchanging their inde-

pendence for co-partnership, and their vague freedom of action for definite special duties. The bodies of the higher plants and animals are composed of countless thousands of such cells, which have undergone great changes of form in order to become fitted for their particular functions. But by this sacrifice of individuality, a new individuality has been created, that of the mass of cells, or organism, as a whole. We may perceive here a fresh illustration of Life's indifference to the means by which it achieves its purposes. Individuality begins with the cell, but pursues its development in cell-masses, the units of which may have lost it.

§

Below the limits of the sway of reason—below, that is to say, the higher classes of the animal kingdom—volition is concerned with little else than the control of movement, and it must have become attenuated almost to extinction in those organisms which have lost the power of moving themselves. Plants, of course, illustrate most typically this sacrifice of activity to convenience. But there are multitudes of animals, notably of the zoophyte class, which are also rooted in the ground. At one stage in their lives, however, these stationary animals—and some portions of all plants—appear to manifest spontaneous movement. This is during their embryonic growth, or in the process of reproduction. The coral zoophyte and the barnacle, during their larval stages, are free-swimming and active: and the pollen grains of flowers fertilize the ovules by developing a measure of independent activity. So is kept alive the impulse of mobility, which is one of Life's essential features, and is obscured, not extinguished, even by so close an alliance with Matter as ties the organism to the soil.

But, it will be said, the behaviour of the lower animals is regulated by directive instinct : what scope can be left to them for spontaneous action ? Their behaviour, indeed, approaches the mechanical. But it does not exactly resemble clock-work or the movements of iron filings in the presence of a magnet. In the lower ranges of the animal kingdom the promptings of instinct are very peremptory and extraordinarily detailed. But cases arise for which they do not provide, and we may see ants, bees, and spiders hesitate and make trials when confronted with unusual difficulties. In fact the directions of instinct do not cover the whole of the ground, and leave some opportunities for the making of mistakes and of attempts to rectify them. The behaviour of insects is occasionally guided by trial and rejection, and in this differs altogether from the action of machinery. You may see a line of ants checked and apparently perturbed by an unusual obstacle: one of them finds a way to circumvent it, and the rest follow its spontaneous lead. Bees will vary the shape of their cells in order to carry their combs round an obstruction. Higher up the scale, as the promptings of instinct become less and less elaborate, the scope for experiment—for making choices—widens: we have already seen that birds, for instance, will on occasion depart very considerably from their instinctive procedure. In man the field for spontaneous action is incomparably wider than in any of the animals below him. But the field extends throughout the province of Life, narrow though it be when we reach its humblest regions. There is a period in the life of each plant when certain of its cells appear to be confronted with a choice. And the lively activity that is displayed by the minute unicellular organisms which flit across the

stage of a microscope is scarcely to be explained by the impact upon them of external forces. Volition, like consciousness, has its roots in the beginnings of Life, although we may hardly compare the spasmodic capriciousness in which it first becomes manifest, with the freedom that is exercised, consciously and deliberately, by the mind of man.

CHAPTER IX

RECAPITULATION

ACCORDING to the conclusions at which we have arrived a living creature may be defined more appropriately by its impulses than by its organs : its organs are, in fact, the products of its impulses. We do not see because we have eyes, but we have eyes because we have an impulse to see. This statement may appear paradoxical at first sight : but on further consideration its truth becomes self-evident : for how, indeed, could a minute fragment of protoplasm develop an eye unless there was within it an impulse to do so, or unless it was constrained by an impulse from outside ? An organ which is not animated by an impulse degenerates into a useless survival, like the rudiments of hind limbs in the whale or the muscles by which man once moved his ears. But an impulse needs no organ in order to manifest itself. The primitive forms of life can appreciate light without eyes, and can feel and recognize their food without sensory organs ; and we have seen that from less humble ranks of the animal kingdom illustrations can be drawn of the discharge of functions that ordinarily appertain to special organs, by the unspecialized vitality of the body as a whole. We must etherialize our conceptions of Life as we have begun to etherialize our conceptions of Matter : we must regard it, not as a series of activities that are produced by a particular type of substance or machinery, but

as a complicated energy of (it may be figured) interlacing whirls, which animates the mechanism of the body and is not caused by it.

But, it will be objected, if we lose our eyes we cannot see : if an organ is diseased its activities fail : if the machinery of our bodies is stopped, we die. How can it be denied that our vital functions are the product of the organs by which they are discharged ? By broadening our view, it may be replied, and taking into consideration not only the higher forms of living creatures, but the undifferentiated, unspecialized, unicellular organisms in which living matter is at its simplest. These possess functions without organs : nay more, they do not appear to suffer death. In reproducing their kind they divide themselves up ; but nothing perishes : the whole of the organism passes, so subdivided, into the next generation. If they are cut into pieces, each fragment becomes a new centre of vitality, which rapidly grows into the typical form of its species. May we not, then, surmise that death is the penalty of differentiation—the consequence of separating out the functions of Life, and attaching them to different arrangements of living tissue, of breaking up, so to speak, the multitudinous cross-whirls of instinct into a number of separate eddies ? By this division of functions Life gains immensely in efficiency. But it sacrifices itself. Its endurance is weakened by its disintegration, and it is no longer capable of resisting indefinitely the clogging influence of the material elements with which it is associated. We know, however, that an impulse may for a time sustain vitality against the effects of organic degeneration. Many men are kept alive through illness or old age by their interest in their work, and die as soon as they take relief from industry.

§

Evolution may, then, be defined as the development rather of impulses than of organs. Some of these affect the body, others the character, and in tracing the affinities of plants and animals, and of races of mankind, we are as likely to find clues in behaviour as in bodily features. The evolution of species in the world of life has been commonly attributed to natural or sexual selection. But this confuses a condition with a cause. Evolution must proceed from a changefulness that is inherent in living creatures, for, unless changes occurred, there would, indeed, be nothing for selection to act upon. It would be pleasing to feel that this changefulness was systematically directed towards the organism's benefit. But against such a supposition there is an overwhelming mass of evidence. Variations occur in every direction. Those that are harmful are eliminated by the struggle for life : those that are beneficial, or harmless, may survive. But we need not assume, on the evidence that has been collected, that variation is entirely uncontrolled—that in no case is it directed by outside influences. Facts are very numerous which appear to indicate that plants and animals may be stimulated to vary their forms or dispositions by their environment, by their habits, or by the imitative impulse ; and in this case the variations would be generally to their advantage. We cannot absolutely deny that the giraffe may have been stimulated to vary, so as to lengthen its neck, by continued striving after higher foliage ; that the migration of swallows is not impelled by an instinct which was generated by habit, or that Arctic animals did not gradually acquire the faculty of turning white during winter by subconscious imitation of the colour of snow.

§

In examining our own instincts we are assisted by the emotions which some of them excite : to the instincts of other persons, and of the lower animals, we have no clue but their behaviour, and our conclusions can merely be inferential. The knowledge that we can gain by introspection and inference is very incomplete. But it appears to warrant us in attempting to classify instincts according to their tendencies, and in making some generalizations regarding the character and extent of their influences. We may distinguish them as *impulsive* and *directive* according as they simply impel the organism to seek a certain end, or elaborately direct it in the means of securing that end—according, for instance, as they impel an insect to provide for its offspring, or direct it in the detailed steps that are needed for such provision. Impulsive instincts appear to be uniform in general character throughout the animal kingdom : directive instincts vary greatly in different classes of animals. In the lower ranges of the animal kingdom directive instincts are exceedingly strong, and govern peremptorily almost every detail of external behaviour, as well as the processes of growth and the development and functioning of the internal organs. As we ascend the scale we find their authority gradually withdrawn from the control of external action, until in man they have altogether relinquished this domain. Their vestiges, however, remain in our *aptitudes* for acquiring accomplishments, and they continue to govern despotically the functioning of our internal organs. Reason is the development of an instinct which guides us indirectly, and not seldom wrongly, by telling us, not that which we require to know, but how we should learn it. Consciousness assists reason

by directing its inferences from the accidental to the essential; also by extending immensely its scope, and so enabling it to draw inferences not merely from impressions or recollections of things, but from conceptions of their properties. By volition, or the exercise of will, we are able to enforce the conclusions of reason, and we are thus equipped with the means of guiding ourselves through difficulties which, in the case of the lower animals, are met by the injunctions of directive instinct. But reason, consciousness, and will share their authority over us with a multitude of impulsive instincts—selfish and social, reproductive and provident, cruel and kind, æsthetic and ethical—which vary greatly in strength from individual to individual, but can generally set up from amongst their number, in each one of us, some tyrant, or tyrants—some “favourite” propensity—which our conscious reason and our will are unable to coerce. But, if assisted by habit, they may be able to prevail. Habits, acquired sometimes by will power, more generally by imitation, or education (a form of imitation) may be employed to facilitate the outflow of particular impulses that are commended by reason, and, proportionately, to weaken the influence of others of which reason disapproves. But, if entrusted too confidently with the direction of our behaviour, habit may enslave us, and grow into such a tyranny as we employed it to dethrone. Our path is, indeed, strewn with pitfalls. We have liberty such as is denied to the insects; but it leads us through dangers from which their lives are free.

§

Features of the body vary from individual to individual in size, shape or colour: so do instinctive impulses vary in strength; and, since

they are very numerous and act in combinations, the possibilities of diversity in human disposition are practically infinite. Individuals, moreover, differ in their sensibility and in their aptitudes for acquiring accomplishments, and these unlikenesses introduce a further complication into the possibilities of human nature, so that no two individuals are exactly alike. The impulses that are aroused by a sensory impression or a recollection may differ surprisingly on different occasions: the associated set of recollections can never be the same, and will arouse a novel assortment of impulses: the relative strength of impulses may be modified by habit, or in some cases, influenced by the will: we are also affected by the mood which governs us at the time. Moreover, it seems that some impulses may rise or fall at periodic intervals. Human nature is, accordingly, not only very diverse from individual to individual, but results in behaviour which varies very greatly in the same individual. We may, indeed, believe that human behaviour, if purely impulsive, would be so eccentric as to be irreducible to rule. But the outflowings of impulse are controlled—brought within sluice-gates, so to speak—by habit. To this regulation of discharge individuals and communities owe the regularity of their lives, their general uniformity in dress, manners, and amusements, even the ideas which direct their outlook upon life. Not only is habit the foundation of conventional morality: it guides our aspirations and fortifies our conclusions upon religion and politics.

§

Pleasure and pain may be distinguished from happiness and unhappiness. The former arise from our sensations: the latter from our instinc-

tive impulses. Happiness is obtained by satisfying an impulse: unhappiness results from inability to satisfy it. One who is devoid of strong impulses cannot be happy: one whose impulses are strong and are unsatisfied must be miserable. Impulses may, within certain limits, be modified in strength by habit, and we are able in some measure to fashion our desires to our opportunities. The happy man is he who makes this correspondence complete. Pleasure and happiness commonly lead to the virtuous and the useful. But they may also be obtained by the enjoyment of tastes and the satisfaction of desires which are pernicious for the individual and for society.

§

The impulses which have been classed as *instinctive*, in the ordinary use of this term, are extraordinarily contradictory. They fall into groups of opposites. It may appear incredible that Life should display itself by the ordering of antagonisms. But each one of us may satisfy himself by introspection that his character is in fact a mass of contradictions, and that he often acts in a way which he afterwards regrets. A duality runs through us which appears to be altogether inconsistent with such a simple explanation of Life as is given by materialistic hypotheses: we seem to be the resultants of two rival forces, which may perhaps be contrasted as Life and Matter. We are insatiably curious to penetrate the veil behind which are concealed the mysterious influences that have filled the earth with its varied hosts of plants and animals, that have brought some to honour, others to dishonour, and that elevate and deprave the mind of man. We are in no way assisted by the know-

ledge that comes to us through our senses. This simply enables us to catalogue, symbolically, the effects that these influences produce. The word "ocean" of itself affords no idea of the great waters: it is merely a symbol which stands for them in speech and writing. The impressions which we gather of the ocean by sight, hearing, and touch resemble it no more nearly than does the word: they also are merely symbolic—sensations which give us, not veritable pictures, but artificial signs. What can we know of the essential disposition of Nature when her face is shrouded from us? What should we know of man if we could see nothing but his material accomplishments—his furniture and houses, his roads, railways, and shipping? The clues which Nature vouchsafes to us are infinitely less instructive, for what we judge to be her accomplishments are but visionary symbols of things which we may never hope to realize.

§

We are, then, deceived by our senses. And we are misled by our reason. We watch its processes in the mirror of our consciousness. They rest entirely upon the assumption that like happenings involve like consequences: we regard this sequence as the result of the abstract property of cause and effect, and are uneasy in our minds unless we can assign a cause to every happening. It seems particularly necessary to assume that the circumstances upon which our lives and happiness depend are ordered, and not the result of purposeless change, and this assumption has influenced the speculations of agnostic philosophy quite as strongly as the meditations of religious feeling. Evolutionists are incessantly engaged in searching for utilities in the colours,

shapes and qualities with which plants and animals are endowed ; and we all feel gratified when it is shown, for instance, that an animal's particular colour may assist it in evading danger or in attracting a mate. But it must be confessed that these explanations very often assume that birds and beasts are easily deceived by superficial resemblances, and that females are pleased by eccentricities of appearance which, when they first developed, would simply be deformities. In the vast majority of cases peculiarities of shape and colour are quite inexplicable on utilitarian grounds, and appear to be merely the fruits of an impulse for change. If harmful, they would generally be weeded out in the struggle for existence, which seems, however, to have spared some of them, as, for instance, the monstrous beak of the horn-bill. But, if harmless, they would remain to testify to the irresponsible activity of the impulse to vary.

An analysis of human character discloses similar anomalies. There are instincts that are useful in the struggle for life : there are instincts that are useless from this point of view : there are others that are harmful, such as the lust for cruelty, the passion for intoxicants. If we turn from ourselves to the course of the world around us, we find much that is beautiful, much that is repellent : there are smiling pastures, there are desolate wildernesses : in some years the earth brings forth her increase, in others millions of its inhabitants are starved by famine. Life, the most precious of treasures, is poured out wastefully—often with bitter dregs of misery. The mere fact that animals eat one another shocks our sense of morality and kindness. If there be a purpose in the course of Nature, we may hardly conclude that it is in accord with our notions of justice or mercy.

There is an antithesis of good and evil—an apparent duality of control—that has been frankly recognised in many religions. Christians, indeed, are taught to believe that “the devil, as a roaring lion, walketh about seeking whom he may devour.” To many men the idea of duality is unsatisfactory: it is out of accord with the desire to simplify—to discover an ultimate unifying principle—which influences modern thought. But there is nothing to show that this desire is well-founded: it may be as misleading as the notions which led to magic and witchcraft. We do not reject the distinction between positive and negative electricity because we are unable to explain it.

§

From this mysterious confusion one fact emerges clearly—that in the animal world the course of evolution has promoted the growth of individual liberty. Instinct at first wields almost despotic authority over both the aims and the methods of existence: its impulses drive living organisms along certain lines of conduct; its directions minutely prescribe their itinerary. It is gradually displaced, so far as external behaviour is concerned, by reason, consciousness, and will; self-government is, so to speak, substituted for a tyranny. But it is left to us to discover how best to use this new constitution in shaping our behaviour to our instinctive impulses. An immense variety of choice is opened to us, and we should be distracted with this liberty did we retain the whole of it. The generality of mankind resign their privileges and are content to be ruled, for the most part, by imitation (stimulated by suggestion) or by habit. But others are less apathetic, and their influence may be traced in the gradual extension of ideas of freedom. During

modern times notions of liberty have spread very rapidly. To self-consciousness liberty can make a special appeal. The recent revolutions in Turkey, Persia, and China were inspired by a conscious desire for self-assertion which was felt by large numbers of the population. However ineffective, it was at least a new element in the feelings of the East. We still hold that children must obey their parents, servants their masters, and that all are constrained by the laws of their land ; but society no longer supports the absolute power of the father over his children, of the master over his slave, of the despot over his subjects. Liberty, that is to say, spontaneity of will, appears to be gradually weakening the chains of habit. And habit itself, it must be remembered, is not an hereditary despotism, differing in this respect from directive instinct. Our habits are contracted by ourselves, and it is possible for us to change them. By habit, moreover, we can gain deliverance from, so to speak, inherited enslavement. For by its help we may control the impulsive instincts which survive as the mainsprings of our actions and emotions, and, by facilitating behaviour that is good, strengthen ourselves to resist the temptations of evil.

With a great price man has obtained this measure of freedom : he has paid for it in countless years of degrading error into which, in his liberty, he has drifted. Mistaking images of the memory for visions of the supernatural, he has concluded that the material world has a spiritual, or shadowy, counterpart, with which he is in communication through the counterpart, or "double," of himself. It seemed unreasonable that either the substance or the shadow should be subject to annihilation : death accordingly appeared to be an unnatural termination of activity,

and was ascribed to the malign influence of an enemy, exercised by magical powers. Each death, then, involved at least one murder in revenge ; and even in these days tribes are known who are exterminating themselves by superstitious retaliations, because they consider themselves to be naturally immortal. Impelled to seek a cause for everything that happens, they are left to themselves to make the search ; and they connect together, as cause and effect, events which have no relationship whatever to one another. From similar errors of judgment have proceeded the thousand superstitions that have not only darkened man's intelligence and retarded his progress, but have turned him in blind anger against his fellows, and have made violence and bloodshed the outstanding features of human history.

But if the past is dark there is light before us. Man can improve himself : he is not merely a completed link in a chain of evolutionary metamorphoses. His reason may be trained to discover more and more accurately the properties of things, and the properties of properties : it may be assisted immensely by the accumulation of knowledge. His will may be strengthened by self-discipline. Habits, of mind as well as of body, may be changed for the better. His advancement has proceeded in the main from the birth of men of originality, or "supermen"—sports in the parterres of convention—whose novel ideas are gradually adopted, sometimes because they are endorsed by reason, but more often through the influence of the impulse to imitate. It is owing to the possession of this impulse that man can be educated : the education of the young is a special application of its virtues, the usefulness of which will be greater or less according as it is directed to

the training of the reason and will, and the acquirement of useful habits, or is devoted to the memorizing of symbolic knowledge. The imitative faculty is powerfully assisted by self-consciousness: this enables us to see ourselves and compare ourselves with others, and the impression which we gather may be a most efficient incentive to improvement or reform. Habits of mind now prevalent appear to be reinforcing the faculty of self-consciousness: its influence has extended very materially during recent centuries, especially amongst the peoples of Northern Europe and America. This reflection will assist us in explaining the acceleration of progress which is undoubtedly to be seen during the period of modern history.

§

Perhaps the most striking fact which has been brought out by these analyses is the antagonistic duality of our instinctive impulses: it is almost incredibly strange, but it seems to be true, that we live under the influence of contraries. We are urged towards change: variety pleases us, monotony fatigues us. But we have also a longing to repeat our mental and bodily experiences, and, if we give way to it, we become bond slaves of custom. We are impelled to look solely to ourselves, but also to neglect ourselves for the benefit of others: blindly to devote ourselves to the propagation of our kind, with foresight and industry to make the most of Life's practical opportunities. We are naturally cruel, and also naturally kind. We are endowed with æsthetic appreciations which are heightened by self-abandonment: we are also endowed with ethical aspirations of which the ground note is self-control. Our vital organs are controlled by forces

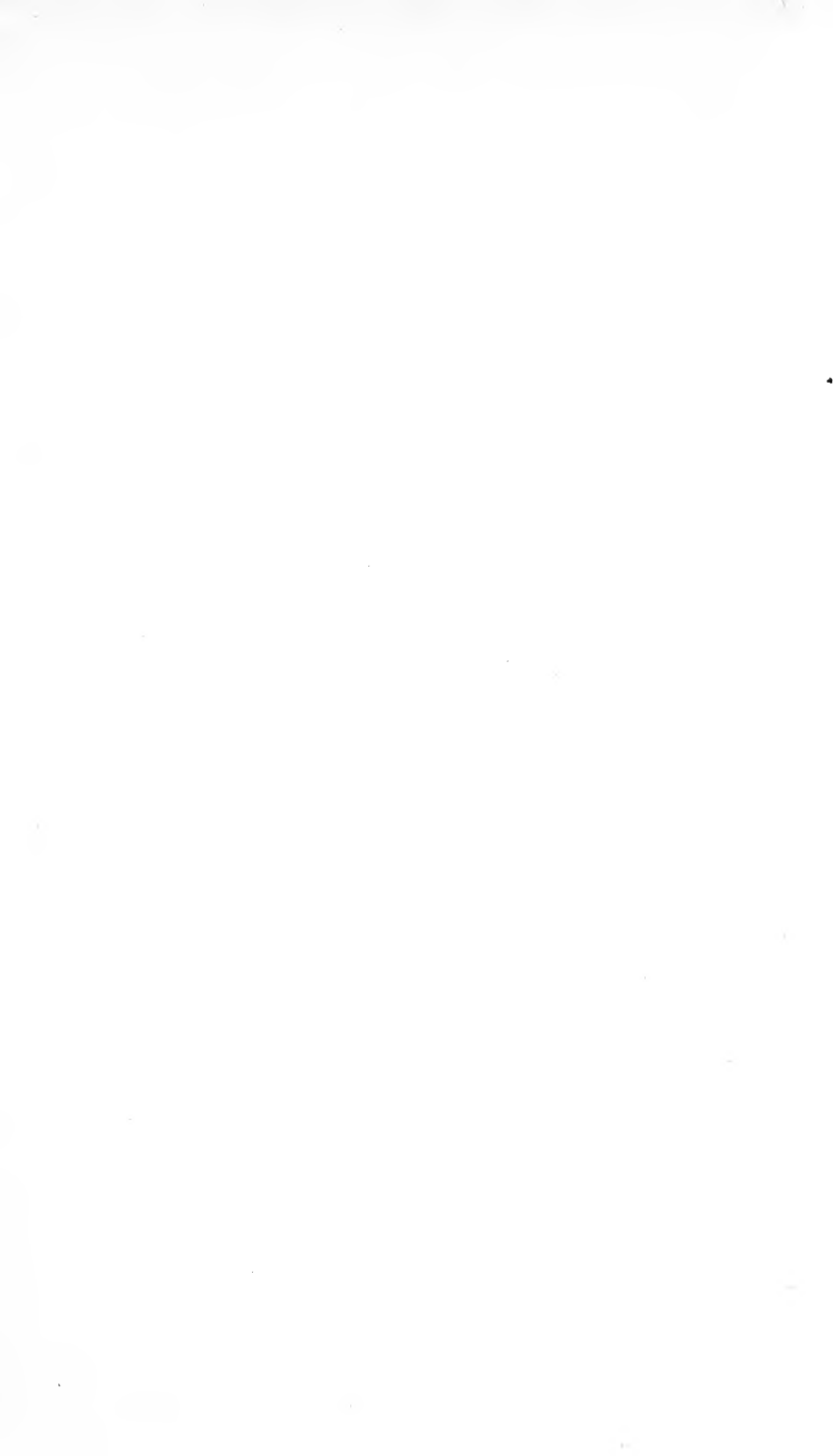
that are hidden from our consciousness, but our external behaviour can be influenced by the conscious exercise of reason and will. Freedom is the ideal of our will : slavery the result of our habitudes. Through these series of opposites there appears to run, like a double strand, two distinct strains or tendencies, one which approximates in some fashion to what we know of the working of the physical lifeless world, the other in strong contrast to it. Thus repetitive habit is closer to the rhythmical vibrations of inorganic matter than is changefulness : to be self-centred, to have no object but the reproduction of the species, and to be cruel may appear, not altogether fancifully, to be more *material*, more accordant with the unfeeling action of physical laws, than to be sympathetic, provident, and kind-hearted. So also with the impulses that have been classed as æsthetic and ethical : the one trembles with the thrills of light and sound with which Nature is beautified, the other severely rejects her attractions. The influence of directive instinct closely resembles the regular, unhesitating action of physical laws : conscious reason and will appear to be poles apart from it.

We appear, then, to be influenced by two antagonistic tendencies, the one representing the cramping mechanical energies of Matter, the other proceeding from activities of a more spiritual character which we may venture to identify with Life itself. Life, as we know it, cannot be manifested except in combination with Matter, and the development of the living world has proceeded from the clashing energies of these linked antagonists. The impulses of Life may appear to be *supernatural* when contrasted with the mechanical activity of Matter. From them we have kindled the beacons which we term our

“ideals.” We idealize self-sacrifice not selfishness, industry not lust, kindness not cruelty, liberty not habit. We speak, it is true, of “artistic ideals”; but these are, in fact, hardly comparable with the ideals which have led human society up the path of progress. We may reflect upon the thought that these impulses are endorsed very markedly by Christian doctrine—may, indeed, be described as fundamental principles of unsophisticated Christianity. There is not a point in our contrast between Life and Matter but is authoritatively endorsed by texts of Scripture. To “do unto others as we would that they should do unto us” is an ideal expression of the social instinct. Upon the impulse to foresee is grafted man’s hope of immortality and of the ultimate redress of this world’s injustice; and, if no encouragement is given to the amassing of wealth, industry is not dishonoured: *laborare est orare* is a maxim of the Church. The heart of Christ was aglow with kindness for all men, and during the cruellest ages of Christendom some reflections of this glow were caught by those who turned their faces towards Him: ideas of kindness inspired St. Paul with one of his sublimest exhortations: unless they were instinct with kindness, his zeal and eloquence, he confessed, were “as sounding brass or a tinkling cymbal.” And, whatever be the opinion of modern divines, self-restraint, hardening into actual asceticism, has undoubtedly been sanctified by the example of Christ and the teaching of His apostles. In the character of our Lord the impulses of Life irradiate humanity with supernatural lustre. His face was set against the morality of habit, turned towards the spontaneous flowerings of the conscious will. He was vehemently opposed to the ordered sanctimony of convinced self-righteousness, strong

in maintaining that sins could be forgiven if they were judged sincerely by the reason of the sinner, and condemned by him in resolutions of voluntary repentance. He opposed no meticulous rules of ethics or ceremonial to the changeful current of man's social development: the principles which He defined lie as deep as Life itself. The key-note of His teaching was echoed by St. Paul—"The letter killeth, the spirit giveth life." No one who believes in the spirit of Life but will accept Jesus Christ as his Example and his Master.

PART II
CONSTRAINING INFLUENCES



CHAPTER X

RACE

THE usefulness of a spaniel depends, firstly, upon its breed, secondly, upon the circumstances in which it is reared, and, thirdly, upon the training that it receives. Unless it is well-bred we do not expect it to display the qualities of a good spaniel; but these qualities may be ruined by over-feeding or by unhealthy surroundings, and they need education for their development. So with a people of mankind. Their behaviour appears to be the result partly of racial peculiarities, partly of the climate and surroundings in which they live, and partly of culture—that is to say, partly of inborn instincts, partly of the pressure of the environment, and partly of the habits that are engendered by the social, ethical, artistic, and religious ideas of the community. Differences between one people and another may all be traced to the effects of these three influences—Race, Environment, and Culture. The difficulty is to allot national characteristics between them, to decide which of them is responsible for any particular trait. Few will deny that gipsies have a character of their own, and that they preserve some traits of this character in every country of their adoption. It is then hardly affected by a change of environment. It may be racial; but it may also be the result of culture—of religious and social ideas which have been preserved from obliteration. To distinguish between the effects

of race, environment, and culture, is exceedingly difficult. But there are few problems which raise questions of more practical interest in attempting to explain, or to forecast, the history of mankind. For a peculiarity that has become innate and heritable cannot be eradicated except by a change of breed—or, perhaps, of environment—whereas one that is freshly implanted in each individual may be modified by a change of culture. By styling a peculiarity “racial” we imply that it is heritable. Peculiarities that are derived from culture are, we shall see, not heritable: those that proceed from environment appear to be in some cases heritable, in others not.

§

RACE.—The racial peculiarities that force themselves upon attention are those which are materialized in distinctive bodily features, such as the dark hair and complexion of tropical peoples, the prominent jaws and woolly hair of negroes, the oblique eyes, flattened and hairless faces and high cheek-bones of the Mongols. According to our theory these distinctions arise from peculiarities of impulse, of which, indeed, they are the manifestations. Other peculiarities of impulse affect the character: man’s instinctive impulses are so numerous that character may vary very widely if some of them are innately stronger or weaker than the average. Character may be further modified by variation in the strength of aptitudes. We all know that these differ considerably from individual to individual: some men have a peculiar aptitude for learning languages, others for mathematics or games of skill. Individuals vary, moreover, in the delicacy of their senses: some are unable to appreciate certain shades of colour, are deaf to the charms of music;

and we may believe that the "joy of life," which in some persons is so exhilarating, proceeds from keen sensibility as well as from strong æsthetic impulses. But the difference in impulses, aptitudes, sensibility and physical traits between the members of a family are generally less than those between persons who belong to different families. A race, as we shall see, may be likened to a family, except in cases where interbreeding between different sections of it is artificially checked, and we may then expect to find such a general similarity between the members of a race as there is between members of a family. Traits of character cannot be discerned directly: they can only be inferred from behaviour, and in examining them we are confessedly upon ambiguous ground, especially when dealing with large bodies of mankind. But certain of them are unmistakably plain. Such are the low reasoning powers of savages, and the weakness of the impulse which leads to industry. Others, equally undeniable, may require closer observation or comparison to be detected. No one will dispute that amongst Mediterranean peoples, for instance, the æsthetic impulses are unusually strong.

There is a school of thought which is reluctant to admit that character is determined by race, since in this case it cannot be radically changed by education. But practical men of affairs, whose success depends upon knowledge of racial character—such as commercial travellers or contractors—will ridicule the idea that differences in racial disposition are only skin deep. When races are marked by peculiar bodily features, it is only reasonable to suppose that these distinctions are accompanied by peculiarities of character. We habitually recognize the association of features with character: thus we speak of a determined

eye, an intellectual forehead, a sensual mouth—connections which have been established by practical experience. The Jews are generally distinguished by a particular type of features: they also possess a distinctive character which they have preserved during centuries of vicissitude. It may be urged that they have preserved their national culture through these changes, and that to the continuity of their culture should be ascribed the endurance of their distinctive disposition. In preserving, or modifying, traditional behaviour, culture exercises beyond doubt an immense influence. Anglo-Saxons who have settled down amongst lower races—"squawmen" or "beach-combers"—appear to sink almost to the level of their associates. But there is something in character that is independent of cultured or uncultured habits. We feel that it is absurd to attribute to culture alone the persistence of British characteristics in the white population of North America and Australia, and of Dutch characteristics in the Boers of South Africa.

It is difficult, as has already been observed, to isolate the effects of racial, or hereditary, traits from those of artificial conventions that are imposed upon man by the conditions of his environment, or by his culture, especially as there is reason to believe that some racial traits owe their origin to conditions of environment. But in some cases we can make this analysis. The in-and-in breeding of the Indian caste system has established or preserved, on a hereditary basis, some variations of the Asiatic physique and temperament. The Bengáli Kayasths, for instance, possess a character and features of their own: so do the Mahratta Brahmins (Chitpáwans) of the western coast, and the martial caste (Rájputs) of Rajputána. These castes are, each,

one of many in the areas which they inhabit, and are subjected to no special influences of environment. Their physical peculiarities can hardly be due to their culture, and, if these are innate, their peculiarities of disposition may justly be held to be innate also. The Armenians, the Jews, the Basques of Northern Spain, the Parsees of India, and the gipsies, all appear to possess traits of character that are peculiar to them, and have resisted for many generations a change of environment. In the case of the gipsies they have also resisted a complete change of culture. The negroes of the United States, of the Caribbean Islands, and Brazil have for more than six generations been living in a changed environment and under a changed culture. They have been Christianized. But missionaries who have spent a lifetime amongst them will admit that, if the influence of white men was withdrawn, they would rapidly deteriorate. The persistence of racial character is illustrated even more strikingly by the Moplahs of the Indian Malabar coast. These men are the descendants of Arabs who settled in the country over twenty-five generations ago. In a moist enervating climate they have preserved the fierceness of their ancestors, and from time to time have risen in disturbances which it has required the use of regular troops, and much bloodshed, to quell. They are Mohammedans amidst a population of Hindus, and their character, it may be urged, is the result of their religious culture and traditions. But the other Mohammedans of India are not endowed with this peculiarity of disposition. In truth, however, we hardly need these illustrations to be convinced that racial character exists as a thing in itself, quite apart from the influences of culture and environment, and that for some

period, at all events, it can maintain its identity, although culture and environment are completely changed.

§

Character is the product of a multiplicity of impulses, and is affected by any special strength or weakness in any one of them. The resulting peculiarities of disposition must make their mark upon the genius and the development of a people. But they may often lie hidden from observation behind the veil of conventional behaviour. In some cases, however, they are sufficiently apparent amongst the generality of individuals to be recognized as typical racial features. Thus we speak of the fierce pride of the Arabs, the agreeable levity of the Persians, the incurious introspective pessimism of the Hindus, the placid industry of Chinamen, and the energetic adaptability of the Japanese. These, it may be objected, are merely habits of mind, not innate peculiarities. May we concede this? Is there reason to believe that an Arab, a Chinaman, or a Japanese, brought up from infancy in a European family, would lose the temperament of his race? Experience shows, on the contrary, that he preserves it, however thickly overlaid by European conventions, and shows it on occasions in his behaviour. His character, must, then, be innately affected by some peculiar strength or weakness of instinctive impulse. The larger are the populations we contrast in this fashion, the more evident become the differences between them. Thus there is a gulf between tropical peoples and those of temperate climates, a breach between Asiatics and Europeans. In Europe itself dissimilarities between race and race, or nation and nation, are overlain by a broader difference—that which separates the North from the South—which distinguishes the

groups of peoples that respectively show their typical features most strongly on the shores of the Baltic and Mediterranean seas.

What are the traits which stand out most clearly if we compare, say, an Italian with a Dane? We notice, in the first place, that the former is much the more impulsive of the two—that is to say, is swayed more powerfully by the instinct of self-abandonment than by that of self-control. He is accordingly the more æsthetic, but the less ethical; he excels in artistic sensibility, but is deficient in the sense of moral discipline from which arose the puritanism of the north.

We may, further, observe a difference in the relative strength of the individualistic and the social instincts. The bent of the southerner is strongly social: he cleaves to his family with superstitious reverence; he is happiest in a crowd; he possesses in a marked degree the virtues of warm-heartedness, generosity, and loyalty which cement mankind into a cheerful society: he is also disposed to accept the arbitrary management of the leaders of his community, and to regard disobedience to their authority as justly punishable with great severity. The northman, on the contrary, has been distinguished since the days of Tacitus by his individuality, his independence; he readily abandons his family surroundings in search of profit or adventure, and is not harassed in his exile by thoughts of his motherland: his ideal of private life is not a crowd, but a home: he will not readily suffer a government or a religion in which his individual existence is submerged.

Southerners are not troubled by the self-consciousness which causes hesitation or awkwardness of address: they are, consequently, expansive in their manners and often very eloquent in their

speech, are not checked by themselves from naïve expressions of vanity, nor, it should be added, safeguarded from the inconsistencies between language and conduct which are detected by an introspective mind. Nor are they sensitive in regard to appearances—indeed they are surprisingly unconscious of grotesqueness or untidiness in dress—and they accordingly are not steadied by one of the surest foundations upon which “respectability” can establish itself.

We may, also, notice amongst them a lack of originality in will-power. All men are more inclined to adopt opinions that are current than to form them for themselves. But the Mediterranean peoples seem to be peculiarly susceptible to the catchwords of the day. The extraordinary infatuation shown by the French over the Dreyfus case is a striking illustration of this tendency.

It seems, moreover, that the impulse to change is less forcible in the Mediterranean than further north. The bonds of habit are stronger. If we look below the surface of modern Italian and Spanish¹ civilization we shall discover a surprising continuity of ideas from the days of the Romans. The style of domestic architecture has remained in some measure unchanged : even so far afield as in Buenos Ayres the houses of the Italian immigrants, in their construction and decoration, offer more than fanciful resemblances to those of Pompeii. Christianity has become the religion of the people ; but in its Mediterranean form it betrays many connections with the cults of pagan times. Pausanias—the Baedeker of Greece eighteen centuries ago—was interested to notice black statues of Artemis : there are black Madonnas at the present day, and the cult of the Virgin

¹ Marius, Sulla, or Catiline would feel quite at home in present-day Mexico.

in Spain appears to be tinged by traditions of the worship of Diana (the moon-goddess) to which the ancient Spaniards were particularly affected. The Madonna is commonly represented in Spanish art as standing upon the crescent moon. There is no essential difference between a bull-fight and the games of the Roman circus: now, as then, a cruel spectacle touches the very heart of the people. Northern manners, on the other hand, have during the past ten centuries been so completely transformed as to present few material traces of their former complexion. In the north, Christianity has changed its character, and has become a religion of morality rather than of ceremonial.

And there appears to be a momentous difference between the north and the south in the relative strength of the two instincts which have been described in Chapter IV as reproductive and provident. These are the mainsprings of the two leading objects of life—to perpetuate our kind, and, by foresight and industry, to ameliorate our conditions. The former is undoubtedly more insistent amongst Mediterranean than amongst Baltic peoples. In southern countries the young attain sexual maturity earlier: this is a physical peculiarity which can hardly leave character unaffected. The passion of love, which in the north is an episode, in the south is an abiding stimulus: judging by their literature, it is hardly paradoxical to say that southerners think only of love, whereas the people of the north have a thousand interests. We may figure to ourselves the influence of this propensity upon the national character if we recollect what it was to be in love ourselves. So affected, we exhibited some of the leading features of the Mediterranean temperament; we were impulsive, little concerned with

our own personality, inconsistent, not greatly interested in our material surroundings, and without any desire to improve them, except in so far as the object of our affections was concerned. Northmen, on the other hand, under ordinary conditions, are distinguished by the practical energy¹ with which they meet their surroundings: they are continually impelled to improve them, and, by altering them, they create novelties in environment which reinforce the impulse for further reform. A southerner accepts without disgust conditions of life which in the north would excite the strongest repulsion. The effect of these two contrary proclivities—the reproductive and the provident—is to be seen very clearly in the position of woman. In the south she is treated as a sexual appendage of man, to be guarded very safely, as is the rest of man's property. In the north, from the earliest historical times, she has been man's companion and partner, and love for her is clarified by sentiments of chivalry and romance—that is to say, by feelings which have their origin not in self-abandonment, but in self-control.

Our generalizations respecting the southern temperament may be extended to the East. There is much in common between the features of the Mediterranean and the Eastern character. Orientals are easily excited to impulsive self-abandonment, are swayed by ambitions which are rather social than individual, regard the government under which they live as a force apart from themselves, are not shocked by inconsistencies between opinions and behaviour,

¹ The number of spindles to which a mill hand can attend is a very good indication of his practical efficiency. In English cotton mills only three hands are employed for 1,000 spindles; in Germany (North and South) seven are needed; in Italy thirteen; and in Bombay twenty-five.

have allowed the spirit of changefulness to be choked by habitudes, and regard woman as an instrument for reproduction rather than as an element of society.

The traits of character, which in this comparison are attributed to the Baltic races, beyond doubt serve the development of the ideas, industries, and institutions which we regard as the hall-marks of modern progress. But the southern races have their compensations. The cultivation of philosophy, artistic creativeness, and the clear-sighted exercise of the logical faculty of the mind are repressed rather than stimulated by the material ideals of the north. And it is doubtful whether these ideals make for such happiness as is given by the æsthetic temperament, and sociability of disposition—impulses which can be satisfied with very small means. These are strongly developed in the Mediterranean—and, speaking generally, in Eastern peoples—and offer substantial compensations for lack of riches and monotony of life.

§

It is difficult to resist the conclusion that the various races of mankind are derived from a single original type: in this case racial differences are the outcome of variations, or "sports," which occurred subsequently to man's first appearance. It seems probable that many of these differences are not the result of random variation, but of variation which has been controlled and guided in a particular direction by climate or other conditions of environment. For we see that certain racial distinctions are associated very closely with certain environal influences. Peoples of the tropics are dark-complexioned and dark-haired, and are, moreover, distinguished by the

early arrival of puberty. Hill men are generally short of stature. The moulding influence of environment will be discussed in the next chapter : but we may refer here to the theory, held by some high authorities, although repudiated by others, that enviroinal influences are responsible for some notable changes which have occurred in human features and character within the period that is covered by historical records and archæological research. It is believed by Professor Ridgeway that a short-skulled people have become long-skulled by migration from the hills to the plains. According to Professor Boas, under the conditions of America, Anglo-Saxon immigrants are gradually changing the shape of their heads ; and it is not uncommonly admitted by Americans that their features are becoming remodelled upon lines that have a curious resemblance to those of the native Indian stock. In the Mediterranean climate of Australia, Anglo-Saxons appear to be contracting the pleasure-loving gaiety of Mediterranean peoples. It seems probable, then, that many racial peculiarities of features and character are the outcome of enviroinal influences, although, once established, they will resist during many generations such a change of environment as is caused by migration. And this power of resistance is, as will be shown, stronger in southern than in northern characteristics, very probably because they are the more ancient of the two.

Variations that are stimulated or guided by environment would promote uniformity among the inhabitants of the same locality and would tend to produce a racial type. But the changefulness of Life is constantly producing variations, or "sports," in diverse directions, and these might lead a race into very abnormal eccentricities were

they not controlled by the effects of marriage. From one point of view, as we have seen, sexual generation may be regarded as a cause of change, since it results in the production of individuals that differ from their predecessors, exactly resembling neither of their parents. But from another point of view it is a conservative influence, since its effect is, so to speak, to dilute any peculiarities possessed by either parent, and by intermixture to produce offspring that diverge less markedly from an average type. This tendency has been formulated as the law of "filial regression." Tallness in the father will be represented in his sons, but in a less degree. Galton found that in the families of 286 judges, who sat on the bench between 1660 and 1865, eminence was shown by 12.6 per cent. of their sons, 3.7 per cent. of their grandsons, and only 0.5 per cent. of their great-grandsons. Their talents fell rapidly to the normal in their offspring. So also children tend towards the normal when their parents are defective. It has been shown by a large body of statistics that parents who are both congenitally deaf may expect three out of four of their children to be free from this defect ; and when only one parent is deaf the chance of deafness amongst the children is only one in eight.

The levelling effect of marriage is no doubt due very largely to the fact that the sexes are not systematically mated so as to bring together males and females that agree in possessing some definite peculiarity. By selective breeding on these lines an immense variety has been produced amongst cultivated plants and domesticated animals. But if selection is relaxed, reversion to type follows. And under normal conditions, whether of men or the lower animals, there would be very little chance that pairing would occur between two

abnormal individuals whose peculiarities were similar. This is the difficulty in accepting the Mendelian hypothesis as an explanation of the origin of fixed varieties or species. It may be proved that certain peculiarities which arise as "sports" are represented by certain elements in the germ-cells that are not obliterated by interbreeding, although they may be concealed. A cross that results from the interbreeding of such a sport and a normal individual produces only a certain proportion of reproductive-cells that possess these new elements, so that if two such crosses come together it would be necessary that one of a particular number of sperm-cells from the male should unite with one of a particular number of germ-cells from the female, in order to produce an individual in which the new character would be fixed. This could only come about with the closest in-and-in breeding, and from a theoretical point of view the chances of the establishment of a new variety seem to be very remote. But the fact remains that varieties have been established: we owe to them the multiplicity of species in the animal and vegetable kingdoms. They have withstood the swamping effect of sexual interaction. But it is clear, nevertheless, that marriage has generally the effect of reducing eccentricity to normality: we observe that relationship is marked by resemblances of feature and character. We also find this resemblance, although in a less degree, within the circle of a nation, for, unless interbreeding has been artificially checked, in the course of few centuries the greater number of its families have blood in common.

It is difficult to realize how extensive are the bonds of collateral relationship. Misled by genealogical tables we picture the continuance of a race in the similitude of a tree. This serves its purpose

when we are considering a few generations of a single family. But it is fallacious in that it emphasizes direct succession, and conceals from us the immense importance of collateral inter-connection. We shall appreciate its deceptiveness if we consider the course of reproduction with reference to direct succession only. The number of our ancestors doubles in each generation, and if we go back twenty generations the forbears of each of us must number a million. But the population of that time would not have sufficed to provide ancestors, in this number, for more than a few persons now existing, and it is obvious that, owing to extensive intermixture of lines, a vast number of the present inhabitants of the British Isles must have ancestors in common. Where free intermarriage is checked by law or custom a line propagates itself still more directly by the union of blood relations. The ancestry of the German Emperor might have included 4,096 individuals during the last twelve generations : as a matter of fact less than 550 persons within this period contributed to his birth, in so many cases have individuals filled several places in the genealogical scheme, owing to the intermarriage of more or less distant cousins. It is easy to comprehend how in these circumstances family peculiarities of strength or weakness would become accentuated. But such restrictions upon intermarriage have not been general ; and in the past there has, moreover, been extensive intermixture of blood by illegitimate connections. So it has come about that, speaking generally, a race may be likened to a family, in that its propagation tends to repress divergences from a type or standard, and to produce a racial uniformity.

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We have, however, to remember that races have very seldom remained undisturbed in their marriage connections, but have usually suffered admixture with other races which have migrated amongst them. This introduces a factor of immense importance. At the present day, migration generally takes the form of peaceful colonization; but in the past the history of mankind has been a continuous record of warlike aggression. In some cases the conquerors appear to have almost exterminated the people they subdued: this seems to have been the ideal of the Hebrews when they colonized Palestine, and our Saxon forefathers do not appear to have left very many of the native inhabitants of England to adulterate their kind in future generations. But in the great majority of cases the conquerors have been content to reduce the natives to serfdom or helotage, and have endeavoured to safeguard the purity of their race by rigid restrictions upon intermarriage. So the Aryan invaders of India established a caste system; the Spartans punished unions between themselves and their helots by degrading the offspring; the patricians of Rome denied the *jus connubii* to the plebeians, and the Americans of to-day visit with the severest social penalties any sexual relations between their own kind and those who possess even a few drops of negro blood. But in the past these restrictions have failed with the passage of time, and mixed unions have generally brought the two races together.

The effects of cross-breeding are many and diverse. As is well known to breeders, a small admixture of strong alien blood may increase very greatly the strength and certain of the qualities of a line. This is particularly the case when the

individual whose blood is introduced is of prepotent reproductive fertility. The Paulistas of Brazil illustrate very remarkably the stimulating effect of a single alien strain. They are, perhaps, the most forceful of the mixed races of South America, and for many generations they exhibited, in war and in slave hunting, a fierce energy which made them the terror of their neighbours. It was, indeed, their courage that preserved Southern Brazil from Spanish domination. At the present time their energy flows in more peaceful channels : they grow the coffee which is the main staple of Brazil and has so greatly enriched the province of San Paolo. They claim descent from a Portuguese sailor who was shipwrecked on the coast early in the sixteenth century, and settled amongst the Indians. When, thirty years later, he was discovered by a party of explorers, he had become the patriarch of a tribe of half-breeds.

In cases where cross-breeding takes the form of a general intermixture of two or more races, there is a tendency for that strain to prevail whose representatives are most numerous, whose peculiarities are most deeply seated, or whose features and characters are most in accord with the enviroinal influences of the country. Circumstances are, then, usually in favour of the native strain, especially when the natives have been spared from slaughter in considerable numbers, for those who have been long established in a country have developed in directions that are favoured by its climate or other conditions. This is especially the case with strains of southern blood, which appear to be so ténacious of their qualities as to overpower, in the course of time, any northern blood that comes into mixture with them in less than greatly preponderating quantities.

The gradual absorption of alien blood is no

doubt assisted by the action of infertility. In a population which is increasing in numbers but slowly, fertility is almost balanced by infertility. If we cast our eyes round the circle of our acquaintances how many are the families we shall find to be verging upon extinction, after perhaps a transient burst of fecundity! Infertility very speedily disembarrasses a race of an admixture of alien blood that is of lower reproductive vitality or is unsuited to the local environment. The immigrant strain may for a time revolutionize society by setting up an eddy of abnormal activity, or by the introduction of new arts or ideas. The survival of foreign elements may from time to time be disclosed by the birth of exceptional individuals, whose character approximates more closely to that of other races than to that of their own. But as time advances, the occurrence of these irregularities will become rarer, until the blended race settles down into homogeneity. These reflections assist us in understanding how a race may retain its peculiar character although it has interbred with alien immigrants; or may revert to its ancient type after temporary bursts of eccentricity caused by the admixture of alien blood.

Infertility, it may be added, contributes to the levelling effect of marriage in preventing a race from improving itself by the breeding of men of talent or "supermen." Persons of exceptional talents are not as a rule of prepotent reproductive fertility, and it is upon less abnormal individuals that the race depends for the continuity of its existence.

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The earliest of our historical records are concerned with little else than wars of invasion, and there is no reason why we should believe that these movements of population only commenced

with the beginning of written history. They may, indeed, be almost comparable in antiquity with the annual flight of the swallows. They have flowed in various directions, but the main current has trended from north to south, since until recent centuries the temptations of wealth and luxury have lain southwards, where conditions of life have been easier and more productive. India owes its intellectual glories to tribes of northmen, generally styled the "Aryans," who some 3,500 years ago broke through its mountain barriers and settled in the Indo-Gangetic plain. They introduced into India the Sanskrit language. The modern tongue which is most nearly akin to it is the Lettish, which is spoken on the shores of the Baltic ; and, from this fact and from references to scenery which occur in ancient Sanskrit hymns, we may assume without rashness that the Aryans had their original home in Northern Europe. It appears from their early literature that their women were free, and were actually permitted to choose their own husbands. But most of the Aryan tribes took wives from amongst the daughters of the Indian soil : the Indian climate cannot have been congenial to them, and by the beginning of our era they appear to have lost their northern characteristics. They have bequeathed to India a literature which may be compared with that of classical Greece. But within historical times their blood has not been able to stir the habitual placidity of Oriental thought.

The ancient civilizations of Egypt and Assyria appear to have had much in common with the conditions of modern China. The people were fast bound by ties of family and religion : their lives were directed by vivid conceptions of existence after death. Their houses were small,

single-storied, and unsubstantial, crowded closely together, and their skill and expenditure upon architecture were confined to temples and tombs. To judge from the tales of Herodotus, there was little or no sexual restraint. The people looked to the government for despotic interference, and were proud of a ruler who was capriciously tyrannical. Dynastic revolutions were of frequent occurrence, but were moved by personal jealousies, not by political aspirations. Peace was frequently interrupted by invasions and conquests, achieved not so much by hard fighting as by the slaughter of armies that nervously shrunk from the test of conflict, and, saving in Persia, not bringing into racial admixture any strains from Northern Europe.

The shores of the Mediterranean, on the other hand, seem to have attracted invasion from Northern Europe from time immemorial. Greek and Roman traditions and history abound with references to attempted or successful invasions of northmen: Gauls, Goths, Vandals, Germans, Lombards, and Normans swept downwards in successive waves of aggression, bringing their vigour to the conquest of Mediterranean peoples, losing it, and becoming absorbed by the races they subdued. The weapons, vessels, and ornaments that have been disinterred from ancient burial grounds show a surprising connection between the manners and customs of the early Greeks and Romans and those of tribes which had their homes in Alpine Europe or in the northern regions of the Balkan peninsula; and we may find in Greek and Roman psychology much to assure us that their ruling classes were descended from invaders who gradually lost their northern attributes. There is a gulf between the ideals of Homer and those of later classical days. The heroes of the *Iliad*

exhibit the traits which we associate with the Norman crusaders: Richard Cœur-de-Lion galloping his horse along the Saracen lines at Jaffa might, indeed, have been a reincarnation of Ajax from the fields of Troy. In the time of Themistocles very different were the ideals of manly conduct. The references to women in both Iliad and Odyssey carry us far from the ideas of a Mediterranean people. There is nothing of the Levant in Hector's farewell to Andromache, in the independence of Penelope, in the punctilious reserve with which Ulysses¹ meets the naïvetés of Nausicaa. We may realize the change which came over Greek thought if we compare a passage in the Odyssey with a sentence from the funeral speech of Pericles. According to the ideals of Ulysses—a man of many successes with women—

Naught beneath the sky
More sweet, more worthy is than firm consent
Of man and wife in household government:
It joys their wishers-well, their enemies wounds,
But to themselves the special good redounds.

Pericles held, on the contrary, that it was the highest glory of woman to be unknown outside her house-door, for either good or evil. In the days when Athens reached the summit of her glory, woman had begun to fall into Oriental degradation. The wife was man's slave, the courtesan was his companion. Thence onward we may watch the rapid orientalization of the Greeks until, during the Byzantine empire, their ideas, their passions, their government became those of an Asiatic country. Constantinople would in all probability have been captured by Islám four centuries earlier

¹ Is not Ulysses represented in Odyssey vi. 232 as a yellow-haired man?

had it not been protected by the courage of a regiment of northmen—the Varangian guard, which was recruited from the shores of the Baltic. It is difficult to avoid the conclusion that Greece, like India, was energized during some centuries by streams of northern immigrants, whose blood in the days of Homer retained its physical vitality, in later centuries, as in India, could produce an intellectual ferment, but finally became too attenuated to give changeful vigour to either mind or body.

We may observe similar features in the history of Rome. The earlier Romans exhibited the simplicity and reticent doggedness of a Germanic race: their women were held in honour, were even a force in politics, and female chastity was an asset of society. Their ideals were of self-control rather than of self-abandonment: the stern endurance of patriotic self-sacrifice was in higher esteem than artistic talents. They favoured the government by council which is so universal a sign of the individualistic ambitions of Northern Europe. But these excellencies evaporated. The republic was torn by personal jealousies: in Rome, as in Greece, politics became a means of securing personal profit. It finally degenerated into Oriental despotism, under which the people accepted without question the ruler who could scheme his election to the throne. Sexual restraint appears to have vanished, and women lost all seriousness of esteem. In the Western Empire an endeavour was actually made to crystallize society upon a caste system. Could we transport ourselves back to those days, we should find ourselves in the conditions which we term Asiatic. The streets and houses of Pompeii recall in miniature those of Canton, and Imperial Rome, with its crowded, servile

population, its mystical religions, its open sexual immorality, must have had much in common with Memphis or Babylon. Intellectual force survived for some period the loss of physical vigour, and we have in Roman law the last traces of the energy which in Greece bore autumnal blossoms of poetry and philosophy. But the scholastic studies of the Romans degenerated into the trivial, mechanical kind that are still favoured at the Moslem university of El Azhar in Cairo. In Rome, as in Greece, we appear to witness the gradual exhaustion of an exotic stream of northern vitality.

Many have been the explanations that have been marshalled by historians to account for the fall of the Roman Empire. The immediate cause was the incursion of savage enemies. But behind this lies, as the *causa causans*, the loss of spontaneity—of the spirit of change—in paralysing inclinations towards habitude. In the softening conditions of peace the people could not retain the energy that might impel them to take up arms and meet their enemies. They were content to bribe them, or to enlist them. They might even resort to such childish expedients as were used by the Spaniards of Panama when they attempted to head off the forces of the Welsh freebooter, Morgan, by loosing a herd of bulls upon them. The marauders shot the bulls, dined off them, and were refreshed for a determined assault on the morrow. We may read in the pages of Gibbon of the despairing artifices which a people that had become inured to peace attempted to substitute for the self-sacrifice of war. Peace and prosperity are only consistent with security when they leave unquenched in the national spirit some sparks of spontaneous and changeful energy which, touched by the wind of

danger, may fire the people to throw aside unwarlike habits—when, in the words of Tennyson—

The smooth-faced snub-nosed rogue will leap from
his counter and till
And strike, if it be but a blow with his cheating yard-
wand, home.

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We may, then, conclude that the history of the Mediterranean up to quite recent times has been determined by successive floods of northern blood, each of which left a stratum of novelty, the relics of which are disinterred, like fossils, by the spade of the archæologist. There was a similar current towards India which could not be diverted even by the barrier of the Himalayas. Ceaseless immigrations of Aryans, Scythians, and Tartars are clearly to be discerned across the misty backgrounds of Indian history. To an uncivilized people the north offers little hope of riches or leisure. Nature requires to be combated with practised skill. The south allured them with its easier opportunities, and they drifted southwards, infusing accessions of vigour into the southern races, but forfeiting in time their own vitality. During recent centuries there has been a change. The arts of civilization have enabled the northmen to produce wealth at home; and America and Australia have offered fields for colonization which promise to be less enervating than those of the Mediterranean.

But migration has not always been from the north to the south. The Jews and the gipsies are Asiatic peoples who have drifted northwards, far afield from their homes. And it is to be remarked that they have preserved their characteristics with a persistency which we cannot find illustrated by any northern race which has been

attracted towards the tropics by the amenities of the south. Observing the many peculiarities in character and ancient custom which the native peoples of Ireland and Wales share with the races of the Mediterranean—with some races indeed of the East—and their extraordinary persistency, we may indulge in the speculation that these peoples have also come from southern latitudes, and are, in consequence, as remote in their sympathies from the English, as the English are from the inhabitants of Italy and Spain. During the last few centuries northern countries have increased immensely in wealth and have attracted immigrants, who may in time change very materially the character of their inhabitants. The Irish have spread in large numbers to England and America: the Italians and other Mediterranean peoples have flocked to New York in hundreds of thousands. Large seaports have always attracted a foreign population: for generations Londoners have been receiving into their houses strangers from all countries of the world, and it may be held that traces of an intermixture of southern blood may already be seen in their features and character. There is certainly great difference between them and the towns population of northern England, which have been affected less intimately by alien immigration.

Generally, however, the outstanding feature of the ancient history of Europe has been the periodic infusion of northern energy into the productiveness of the south. Modern history begins when the north became productive as well as energetic. But the success of northern races is won by their character not by their riches, and it would be an evil day for the progress of mankind were their traits to be obliterated by an influx of alien blood. We might gain a wider development

of æsthetic feeling, a clearer perception of the chains by which logic leads us to true—or, it may be, to false—conclusions, a finer lucidity of expression ; but we should lose the industrious spadework which is disputing with Nature the conformation of the earth, and is establishing conditions of comfort and cleanliness, not only for a privileged few, but for the masses of the people.

CHAPTER XI

ENVIRONMENT

No one who has taken a trip to Brighton—who has fled from the exhausting heat of a London August to the crisp air of the Alps, or the fresh breezes of Scotland—will deny for a moment the exhilarating effect of the change in surroundings. And no one who has visited a boys' club in the East End of London but has been struck with the effect of city life in sharpening the features and paling the complexion. That environment affects men for good and evil is indisputable. It may affect their physical growth and form : it may affect their character : it may affect their habits. A tropical climate appears to stifle the energy of European settlers : the extraordinary development in means of locomotion, which is one of the characteristic features of our times, has beyond doubt stimulated a changeful spirit in modern Europe. Do such influences as these affect the race as well as the individual ? Do they touch the reproductive cells from which new individuals arise, so that they start in life with an advantage or a handicap ? This question is of immense importance. In so far as environment affects individuals, its influence may be corrected by a change of surroundings, or, perhaps, by a change of culture. But if it affects the germs which carry on the race, the peculiarities that it causes become a heritage which may hardly be

put off. We shall find reasons for concluding that the effects of environment may become hereditary in their influence upon physical features, or upon the relative strength of the innate impulses which constitute character; but that, when they are merely concerned with the formation of habits—although these habits may be the most important element in civilization—their influence does not extend beyond the generation that is immediately touched by it. An English baby is born with a complexion and a character which it owes in some measure to the country of its forefathers; but it is not innately more disposed towards the artificial usages of civilization than the child of a family of Esquimaux.

Environment and the individual

We frequently style ourselves “creatures of circumstances”; if, speaking literally, circumstances do not make us, it is assuredly true that they can mar us entirely. We are absolutely dependent upon supplies of food: if they are inadequate the noblest genius may wither in fruitlessness, a healthy people may be enfeebled, may, indeed, be destroyed in millions, as during an Indian famine. There is good evidence to show that food may affect sex development: a bee may become a female or a neuter worker according to the food which it receives in its larval state. The colour of canaries may be deepened into orange by the admixture of some cayenne pepper with their seed. We cannot endure extreme cold: yet a certain chilliness of air undoubtedly has a bracing effect upon our energy. A dry climate is exhilarating; a damp climate depressing. The diseases, which are so masterful an element in our environment, not only reduce the length of human life, but mar the physique of those whose

lives escape them. Even our colour may be affected by our surroundings. An Englishman not only loses his ruddiness of complexion in the tropics : his skin may be darkened, apart from sunburn, by the development of a pigment which has become an hereditary peculiarity of the coloured races. Naturalists have collected many instances of the changing of colour by environment. An Arctic fox, kept in a warm room, has been known to resist its hereditary impulse to turn its fur white during the winter months. The chrysalides of some butterflies will reflect the colour with which the caterpillars were surrounded at the time of their metamorphosis. Alpine plants transferred to the lowlands by the botanist Nägeli changed their habit of growth, but reverted to their original type when retransferred to the mountains. The closeness of the connection between an individual and its environment is shown by the exceedingly narrow limits within which many plants and animals are localized. Their haunts may not be distinguished by any unusual abundance of food. This peculiarity may be noticed amongst British butterflies : the Adonis blue will not stray beyond the limits of a few favoured fields : the Lulworth skipper only occurs at the place from which it takes its name.

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With mankind, at all events, environment affects mental disposition as well as physique. Some peoples take an optimistic, others a pessimistic view of life. There is a gulf between the active hopefulness of the Englishman and the passive endurance of the Hindu. We may ascribe this difference to peculiarities of race or climate, but may find a contributing factor in scenery, the effect of which is

particularly apparent in the bent of the religious and artistic emotions. The simplest religions—monotheistic or dualistic—have arisen amidst landscapes which emphasize the impressiveness of simplicity and uniformity : the most complicated vagaries of polytheism occur where the darkness of forests, the imminence of precipices, the rushing of torrents, and the slow spread of floods display Nature as a many-headed terror for mankind. It has been held that the influence of hill scenery may be detected in the architecture of a people. Architectural styles spread very rapidly by imitation, and lose all connection with the region of their birth. But we may gather from observation that amidst mountains and pine trees buildings tend to be more sharply roofed than in featureless plains. Tall, far-spreading trees are a feature of environment in Northern Europe : in the vaulted aisle of a Gothic cathedral we feel as if overshadowed by their interlacing branches. Nor need we doubt that the exquisite formulation of artistic feeling which was the glory of classical Greece was stimulated by impressions of clear-cut beauty in mountain, valley, and sea. Life in a crowded city produces sharpness of character as well as of features ; and amidst these surroundings it is particularly true that “ evil communications corrupt good manners.” Within certain limits hardship strengthens, luxury weakens the character. Some of us may remember Mr. Barlow’s illustration of this truth in that old nursery classic, *Sandford and Merton*—how cowardice and courage changed about between two dogs which alternately became used to the hearth-rug and the sheep fold. A muscle, or a faculty, is generally strengthened by use, and circumstances that compel its use are therefore invigorating in respect to it. Energy is also

developed by opportunities of remunerative effort: an English labourer or artisan is a different man after a few months' experience of the stimulating prospects of Canada. The consciousness of danger may harden the endurance of a community as of an individual. We may wonder whether Rome would have been great had there not been before her the fear of Carthage. In quite recent times we have seen Australia drill herself under apprehensions of Japan, and South Africa draw herself together to confront the menace of a large and vigorous black population.

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It is, then, indisputable that the influences of environment have powerfully affected the course of human history—have encouraged or retarded the steps by which man has slowly emerged from the darkness of primæval savagery. We may give further illustrations. Unassisted by art man cannot compete with dense vegetation: forest-clad regions have never been the homes of an original civilization. In tropical countries races that dwell beneath the shadow of trees become trammelled with a shyness or timidity which is as incurable as the instinctive nervousness of the lynx: they are enslaved by the grossest and cruellest forms of superstition, and by habits which resist all changeful impulses. The most savage and untamable of the native races of America are those which inhabit the dark forests of the Amazon: and of Africa and India it may generally, though not universally, be stated that humanity is least advanced where foliage is densest. In the temperate regions a forest life is less degrading; but it appears to blunt and depress human faculties, and it may be doubted whether the German tribes which roamed

the forests of Northern Europe, would ever have emerged from barbarous simplicity had they remained unaffected by outside influences. But they possessed energy which could resist the gloom of their environment, and, touched by the glow of Roman civilization, they assimilated knowledge and imitated accomplishments which speedily gave them the command of Nature. The birthplaces of agriculture, and of civilization, have been treeless valleys. Such are Egypt and Mesopotamia, the expanses of Northern India and the densely inhabited portions of China. Far away across the ocean there were two other centres, the treeless upland valleys of Mexico and Peru. In all these localities cultivation reached a high pitch of efficiency.

But the regularity of an agricultural life may fatally reinforce the growth of habits. Agriculturists are generally conservative in their opinions. Under a tropical sun, more especially, the spirit of changefulness cannot survive the cramping effect of custom: the people become so inured to the monotony of peace as to be unable to rise to the exigencies of war, and helplessly suffer their fields to be trampled by the feet of restless invaders. Hordes of these have been bred on the grazing lands which lie along and across the valley horizons. Pasture must be searched for over vast areas of country at different seasons of the year, and a pastoral life nourishes the spirit of adventure by its hardships and its constant vicissitudes. The Hebrews were trained for the conquest of Palestine by their wanderings in the desert. Egypt has constantly been overrun by Bedouin tribes, India and China by Mongol races which have swept eastwards and southwards from the steppes of Tartary and Siberia. In our own time we have

seen the civilization of Egypt seriously threatened by a horde of cattle-keeping (Baggára) Arabs, and, since the beginning of our era, nomadic forces, whether Tartar, Arab or Teutonic, have uprooted every civilization then existing except that of China and Japan. Living in open pastures, nomadic races may become so indifferent to the beauty of foliage that when they settle down, whether in Turkey or in China, they recklessly destroy all the trees of the country. But in return they infuse into it a spirit of active vitality which may initiate some changes in popular habits, may effloresce in such transient glories as those of Khubla Khan or of the Mogul emperors of Delhi. Agricultural and pastoral conditions may, then, be regarded as, in some ways, complementary factors in human progress: the former has provided the mechanism, the latter the energy, for advance.

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Modern achievements in scientific discovery, and in increasing the comfort and variety of life, stand like a tower amongst the monuments of human history: the difficult and tortuous path of progress seems to have been suddenly smoothed and straightened. This rapid development may be ascribed in great measure to the conditions of modern environment. Facilities for travel, for commerce, and for the dissemination of news have drawn all the civilized nations of the world into a partnership of enterprise and research, and have enabled each of them to profit immediately by the discoveries of others. Nor is this all. They have quickened curiosity and the desire for novelty, and have broken down the barriers which the conservative spirit opposes to reform. This transformation of mental habit, once begun, progresses

with increasing rapidity, since each of these multi-form changes in environment acts as an incentive towards further change. But in tracing the origin of this revolution we must avoid the danger of mistaking a condition for a cause. The complexity of modern life has afforded energetic and industrious peoples opportunities for developing the resources of their disposition. But the possession of energy and industry is essential. During the last half century the conditions of India have been revolutionized by the construction of railways and the diffusion of education. Yet the general effect upon the outlook of the people has been disappointingly small. However forcibly advertised in the environment, the material ideals of Europe do not impress Asia, where leisure is preferred to industry, and men show their appreciation of wealth by burying it in the ground.

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In human society the reproductive impulses are very closely controlled by fashions, moral rules and ambitions that conflict with them, and it is exceedingly difficult to determine whether variations in the birth-rate result from changes in reproductive fertility or from various artificial causes. Its very great fall amongst the peoples of Western Europe, and of the Anglo-Saxon colonies, may be due to the postponement of marriage until long after the age that is indicated by the arrival of puberty, or to the voluntary limitation of families. But it is an accepted fact that luxury in diet diminishes fertility. Indeed, under-feeding appears to stimulate it : an Indian famine is followed by a very extraordinary rise in the birth-rate, amounting not infrequently to a third above the normal. Families run large amongst the thrifty Scotch, and the extraordinary fecun-

dity of the very poor, even in countries where the general birth-rate is declining, may be connected with a sparseness, or irregularity, of diet which brings into their life something of the conditions of man's natural, or savage, state. The English peerage may fairly be taken to represent conditions of ease and luxury: few patents of nobility outlast the course of three centuries.

It also seems to be true that idleness is prejudicial to fecundity. Breeders are well aware of the importance of keeping their stock well exercised. But, in the case of women, labour must not be too fatiguing: their employment in factories appears to lessen their capacity for child-bearing. And disease may, of course, severely check the increase of a population: repeated attacks of fever cause an enfeeblement of virility which may end in impotence. For the rest, the causes which at the present day are lowering the average size of families appear to have more connection with the culture than with the environment of society.

Environment and the race

Scientific opinion is sharply divided as to the inheritance of acquired peculiarities. One school of thought not only insists that peculiarities acquired by the individual may become innate in the race, but regards the acquirement of peculiarities as the principal means by which plants and animals have developed their multiform species. Another school denies that acquired characters are heritable, and is persuaded that the differences which divide one species from another have their origin in spontaneous mutations or variations. It fortifies its conclusion by maintaining that the reproductive tissue—or germ-plasm—is entirely distinct from the sentient and active body, and

cannot, then, be affected by peculiarities that are acquired by the latter—a contention which, it must be admitted, lacks adequate proof. Each school can adduce instances to show that acquired characters have, and have not, been inherited. In this uncertainty we may remember that Life does not limit its activities by any consideration for uniformity of procedure, and that, while in some cases it may evolve changes of form spontaneously, in others it may utilize the experience of individuals. Amongst those who most positively deny that environment produces racial changes by its action upon individuals are some who will admit that its influences may predispose organisms to vary in directions that are favoured by their circumstances. And no one will dispute that environment affects very potently the course of racial development by eliminating any change that would put an organism out of accord with its surroundings.

There is, however, much to justify us in going beyond this narrow conclusion and in ascribing to environment an active part in originating peculiarities that become hereditary. Size, for instance, is a hereditary peculiarity: the dimensions attained by either men or the lower animals generally correspond with those of their progenitors. But the size of their progenitors appears in many cases undoubtedly to have been determined by their environment. The grey wolf and the common fox of North America grow considerably larger in the north than in the south, the difference in size amounting to as much as a fifth. Deer of the same species also increase in size very materially towards the north. We may notice a similar tendency in the peoples of Europe. Life at a high elevation appears, on the other hand, to lower the stature of men and

cattle. This is very noticeable as one ascends the slopes of the Himalayas. A dwarfed condition has become hereditary in Himalayan cattle and is retained by them if transported to the plains. Breeders of cattle are well aware that in establishing large or small varieties food is a factor of importance. A liberal diet will enable young stock to surpass the growth of their parents and to acquire additional bulk which they transmit to their descendants. Conversely, cattle may be dwarfed by starvation, and when small Alderney cows were in fashion the systematic underfeeding of the calves was a recognized expedient for reducing the size, not only of individuals, but of the breed. To draw another illustration from India: there is a surprisingly close correspondence between the size of the village cattle and the character of the fodder they receive. In the rice districts of the eastern coast they are very diminutive compared with those of the northern and western regions, where they are fed on wheat or millet straw. Rice straw is of very poor nutritive value. It cannot, then, be denied that the character of the food supply may hereditarily affect the development of some animals. It has been known since the days of Pliny that the garden radish can be raised from the wild species by intensive cultivation, and manure has been of vital assistance to the nurseryman in breeding new varieties of flowering plants and vegetables. If we concede that from bodily nourishment may arise peculiarities of form that are transmitted to offspring, we cannot maintain that the sentient and active body is isolated from the special tissue which secretes the reproductive cells.

Colour also appears to be connected with environment. Speaking generally the coloured races of mankind are those that live under a

tropical sun : their colour is a hereditary trait, but it results from a pigment which (as already mentioned) may be acquired in some degree by a European who resides for many years in the tropics. If we follow the representatives of the Equidæ that occur wild in Asia and Africa, we find that colour markings become brighter and cover a larger surface of the body as we approach the equator from either north or south. The wild horses of Mongolia and the Asiatic deserts are striped indistinctly on the legs. In the ass of Nubia and Abyssinia stripes are developed on the shoulders as well as on the legs, and become more conspicuous. They cover the body of the tropical zebras, but disappear from the legs and under surface of the zebra (Chapman's) of the Orange River, and were limited to part of the upper surface of the (now extinct) quagga, still farther south. Brilliancy is a conspicuous feature of tropical insects and flowers. Tropical birds are also generally distinguished by brightness of colour, as well as by the length of their beaks and tails. On the other hand, it is in the temperate regions that birds develop their sweetness of song. There is no obvious connection between coolness and vocal capacity : nor is there between aridity and the spiny growths that are thrown out by plants—and by some lizards—in widely separated¹ desert countries. Yet in both cases we may feel sure that a connection exists. Doctors are well aware that the recuperative virtues of health resorts are frequently limited, very unaccountably, within quite small areas.

The influence of environment, by promoting or

¹ In similar environments the ostrich and the llama have developed a curious similarity of form. Darwinists ascribe this to the effect of similar selective influences. But it will corroborate the existence of more subtle influences to those who have been led by other coincidences to believe in them.

hindering the use of an organ, or a faculty, may strengthen or weaken it: the resulting development or degeneration may become fixed hereditarily in the offspring. The eyes of a newt (*Proteus*), which lives in the dark waters of the Adelburg cave, have become quite rudimentary and sightless. The horses of a mountain country are born with hoofs that will stand the jarring of hard rocks and city pavements much better than those of lowland breeds. Physical changes that are caused by mutilation are, as a general rule, not inherited; nor should we expect them to be, since sudden modifications of an organ would not affect the germ-plasm so strongly as modifications which have resulted from gradual pressure. But cases are numerous in which mutilations have been passed on to offspring: in one of the most curious, a cat with a broken tail bore kink-tailed kittens, her tendency to transmit her defect increasing with each successive litter until not one of her kittens was born with a straight tail. It has been demonstrated that guinea pigs, which have become epileptic from a surgical operation, may transmit an epileptic tendency to their offspring.

A sudden change of environment appears to stimulate the occurrence of mutations or "sports." Under the artificial conditions of domestication plants and animals sport much more freely than in their natural wild state—display, that is to say, eccentricities of form which are heritable and are seized upon by breeders as a means of developing new varieties. The numerous breeds of dogs, fowls and pigeons have for the most part sprung from these sudden eccentricities; to sports, assisted by cross breeding and intensive cultivation, we owe a large proportion of our most conspicuous garden flowers and our daintiest

vegetables. Under artificial changes of environment—the alteration of the proportion of salt in the water in which it lives—a shrimp (*Artemia*) will become transformed by changes which would suffice to distinguish not merely a new species, but a new genus. Sponges and zoophytes which have apparently migrated from the sea to a fresh-water habitat, have changed the course of their development: the organism emerges from the egg in its adult form instead of as a free-swimming larva. Breeds of English sheep transported to the pampas of Argentina become endowed with novel characters: the legs grow long at the expense of the body: the wool turns coarse and hairy. So substantial a distinction as that between short-skulled and long-skulled races is believed by some authorities to have resulted merely from the differing influences of a mountainous and a plains habitat; and at the present day an American environment appears to be curiously modifying the Anglo-Saxon type in the shape of the head, and in the modelling of the features. If, as appears, changes of environment are followed by hereditary modifications of form, or stimulate the occurrence of hereditary mutations, we may infer that migration has been a powerful factor in the development of new species of animals and races of mankind.

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There appears to be, then, good warranty for the conclusion that the action of environment may produce changes which become fixed in the breed and are passed on from parents to offspring. The character of these changes may often appear to have no connection with any special features of the environment: it is not clear, for instance, why birds should develop their powers of song

most harmoniously in a temperate climate. In the soil, surface features and climate of a locality there may exist stimulating or directing elements which are too subtle to be detected in the present state of our knowledge. This supposition is strengthened by the closeness with which some species of plants and animals are localized within their habitats, and, even more, by the replacement of one species by a closely related species on the further side of a geographical boundary line. In India, for instance, the black francolin of the northern alluvial districts gives place on the peninsular plateau to the painted francolin: there are three varieties of hares, each confined to its particular region: the Indian peacock is in Burma replaced by a species in which the green colour is more predominant. These species differ from one another by peculiarities of marking or colour which cannot be directly associated with any feature of the environment. Yet it is difficult to believe that environal influences did not contribute to the spread of these distinctions until they became universal throughout the species.

It follows that the features and characters of the different races of mankind may, in great measure, be the outcome of the environment in which these races have lived during a long course of generations: racial peculiarities that are now innate and heritable may have been in the first instance derived from soil, geographical features, or climate. This theory will be strengthened if we find that similar conditions, in widely separated regions of the earth, are accompanied by similar innate peculiarities of feature and disposition. Around the globe a dark complexion is almost invariably associated with a tropical sun. As a rule it grows darker with approach to the equator,

and, where exceptions occur, there are circumstances which entitle us reasonably to ascribe them to the effects of immigration from the north. The new-comers retain for many generations traces of their original light complexion, and diffuse them by intermarriage with the natives of the soil. In India complexion darkens very noticeably from north to south : the southerners live under a stronger sun : but it is also to be observed that they have lain remote from the torrents of invaders which, pouring across the passes of the Himalayas, have infused a light complexion into Northern India. The lowest castes of Northern India may be presumed to consist of families with which the immigrants did not intermarry. They are almost as dark complexioned as the people of the south. Africa has been protected from invasion by the deserts which shut it off from the Mediterranean, and it is in Africa that we find colour in its darkest shades. It can, then, hardly be disputed that complexion is a trait which has been derived from environal influences, and has become innate in the breed.

The early arrival of puberty is another physical characteristic which is associated with a hot climate, and has become hereditary. This is a functional peculiarity which must have far-reaching effects upon character. It lessens the period during which the young can acquire useful habits before their minds are preoccupied with sexual feelings ; and it may not improbably be connected with the relations between man and woman which are to be observed throughout the warmer countries of the world. Romantic love is burnt up in lust ; women are regarded as the slaves of men's appetites ; and polygamy is generally practised. We have already considered the influence which the predominance of sexual

feelings appears to have exerted upon the history of southern races.

A mountainous environment is almost everywhere associated with shortness and sturdiness of growth, and with an abnormally large development of the muscles of the calf. This is of course the result of hill climbing : but it has become a hereditary trait of hill people. Some localities are distinguished by the muscular strength of their inhabitants : the fellahin of Egypt are amazingly strong for an Oriental people. We are tempted to assume some connection between vigour and diet. Flesh-eating peoples are generally supposed to be more forceful than vegetarians, and in India those who subsist upon wheat and millet are certainly hardier than the rice-eating peoples of the eastern deltas. But the qualities that are associated with a particular diet may in reality be caused by the circumstances of soil and climate which determine the character of the food supply. In India flesh-eating Mohammedans are scattered amongst a population of vegetarian Hindus : speaking generally they are not more vigorous than the Hindus, although they undoubtedly enjoy a higher birth-rate. And Japan affords a very strong argument for vegetarian enthusiasts. The diet of its people is rice : but no one can deny their physical and mental forcefulness.

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Turning now more particularly to peculiarities of character, we observe that a climate of moist heat is almost invariably—and very naturally—reflected in the physical inertness of the people that are subjected to it. There is a marked contrast in India between the bodily inactivity of the Bengális and the vigour of the Panjábis or Marathas who inhabit a region of lighter rainfall ;

and Bengális who change their domicile to drier climates do not lose their quietism in one or two generations. In Africa also the inhabitants of the drier regions are more strenuous than the tribes who live under a tropical rainfall. The men of Northern Nigeria—the Hausas—make infinitely better soldiers than the negroes of the south. We need not labour this point, which we habitually recognize by applying the term “enervating” to a moist hot climate. Exceptions occur. But immigration will account for them. The Moplahs of Western India have already been mentioned as having preserved through many generations the courage of their Arab ancestors amidst enervating surroundings. But the persistency of their traits merely shows that environment may need time to produce its effects. Dry heat, on the other hand, develops restlessness and courage. We need only instance the Turkomans and the Arabs. The energy that is produced by cold is quite as strenuous and is far more persevering. It will apparently withstand for some centuries the gradual effects of migration southwards. But if suddenly exposed to tropical conditions it seems to wilt more rapidly than the vigour that is derived from desert surroundings. English families which have settled in the tropics deteriorate more rapidly than the Moplahs of Malabar. The energy and persistence of purpose which characterize the Teutonic peoples of Northern Europe are not relieved by the versatility of mind, the expansiveness of heart, which we associate with the Gallic and Mediterranean temperaments. We habitually ascribe this emotional sensibility to the effect of clearer skies and a warm climate. In the native population of Wales and Ireland it may be a relic of the south that has survived a change to a less genial environment.

The glimpses of local character which ancient history affords us suggest that peculiar traits of disposition have been curiously persistent in certain localities, although the race of the inhabitants has been greatly changed. The Athenian character, for instance, has been closely preserved by a people which retains very few drops of Athenian blood.

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We find, then, that certain human traits are so closely associated with peculiarities of environment as to justify us in assuming that there is a causal connection between them. In many cases we may be quite unable to apprehend the links of this connection—to understand why certain facts of environment should involve certain physical and mental features. But it is permissible to draw inferences from occurrences which are in themselves unintelligible: science, has indeed, won its victories by the use of such reasoning. The effects of environment may be distinguished according as they have modified physical features, traits of character, or habits of mind and conduct. The two former have become hereditary, and innate, in the race which displays them. We may hardly deny that strong developments of energy or quietism, of susceptibility to passion, of artistic sensibility and practical foresight, have become as congenitally inherent in races of mankind as peculiarities of feature and complexion. Habits of mind and conduct, on the other hand, do not appear to have become ingrained in the race; they require to be acquired afresh by the individual. Such are modesty, decency, and the civic virtues. A European nurtured by savages would not revolt against the practices of savagery. In distinguishing between a trait of character and

a habit we are on difficult ground : both affect conduct and it is only by observing conduct that we obtain any glimpses into character. But we may define the former as an impulse which is innately strong, the latter as an impulse which has been reinforced artificially by the routine of behaviour. The one proceeds directly from the influences of the environment—in what fashion we may not be able to understand—and becomes implanted in the race ; the other is of man's own cultivation, under the pressure of circumstances, and needs to be sown afresh in each generation. The influence of our surroundings has thus been felt by us in two directions : it has modified the race, and it has swayed very powerfully the progress of culture.

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There appears to be no reason in the nature of things why environal influences should not affect the reproductive capacity of a race and increase or diminish its *innate* fertility. They certainly may lessen the fecundity of individuals. There are some facts to show that the reproductive functions may be innately modified by locality. The *Eschscholtzia*, for instance, in Brazil must be cross-fertilized : flowers will not bear seed under the influence of their own pollen. But in England it becomes occasionally self-fertile, and self-fertilized seed appears to produce stronger plants than seed which has resulted from crossing. When, however, we are dealing with mankind we depend for evidence upon birth and death rates, and these may be affected by such diverse causes—many of them quite unconnected with environment—that we can hardly find material for conclusions which are not ambiguous. There is an extraordinary difference between the birth-rates

of Eastern and Western Europe. In Russia and the Danubian countries they are 40 per mille or over : in the United Kingdom the birth-rate is only 24, in France it hardly exceeds 20. But this difference is of quite recent date. At the beginning of the nineteenth century the French birth-rate was 34 : forty years ago that of the United Kingdom was 35. The birth-rate of Germany is now as high as was that of France a century ago ; but it is falling.

We might be tempted to ascribe this general decline of births in the most progressive countries of Europe to some influences connected with the density of population. But it may be imputed with more probability to artificial causes, noticeable amongst which is the postponement of marriage. In India, with a very dense population, the birth-rate approaches 40 per mille : marriage is there generally contracted at the age of puberty. In the United States, where we should imagine that a rapid development of material resources would be accompanied by a rapid growth of population, birth-rates are no higher than in the United Kingdom. In the Anglo-Saxon colonies of Australasia they approximate to 30 per mille ; but except in Tasmania, they have fallen very considerably during the last 20 years. These facts do not indicate any relationship between fertility and environment ; indeed amongst the poorest classes of our large cities the birth-rate is even now as high as 40 per mille and families would increase with great rapidity were it not that deaths are abnormally numerous. The conditions of town life are so far removed from those of nature that one would be inclined to suspect that they were unfavourable to fertility. There is an idea that London families die out in two or three generations. The population of London is main-

tained very largely by new-comers : more than a third have their birthplace elsewhere. But it is difficult to establish a connection between fertility and immigration : indeed we find the highest birth-rates in districts of East London where the immigrant population is comparatively small. And, taking England as a whole, urban life does not appear to be prejudicial to fertility. The average birth-rate is actually lowered if we exclude the 100 largest towns from our calculations.

It may be that the very high infantile death-rate amongst the poorest classes of our towns results from a form of infertility which denies length of life to offspring although it may permit them to be engendered. But this is only a surmise ; and, generally, if we understand by fertility reproductive capacity, there is little to show that it is affected by surroundings—that, in fact, the English birth-rate would not rise very greatly if celibacy fell into disrepute, child-bearing became fashionable, and marriage was not so long delayed after the attainment of the age of puberty.

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If the physical features and characters of the races of mankind are derived very largely from environal influences we should expect to find them modified where these influences are changed. We have seen that this has very often occurred even within the period of history. English families lose their vigour in tropical countries : a like change was suffered by the northern peoples who, band after band, fought their way to the shores of the Mediterranean, by the Aryan, Scythian, and Tartar invaders of India, by the Arabs who left their deserts for the amenities of Syria, North

Africa and Spain. It has often been noticed that English families settled in Ireland become "more Irish than the Irish." English colonists in South Africa contract many resemblances with the Boers. This may be ascribed to the effect of intermarriages or imitation. But no such reason can be given for the change which is taking place in the North American type, and in the character of the Anglo-Saxons who have settled under the cheerful skies of Australia.

Southern traits are less mutable. The Jews, the gipsies, have lived for generations in Northern Europe, but have remained practically untouched by its influences in feature or in character: the Moplahs have resisted for eight centuries the enervating climate of Malabar: negro character has not been changed materially by a long exile from Africa and by conversion to Christianity: the Latin colonists in South America have remained Spanish and Portuguese—indeed the distinctive traits of the Basques and Gallegos of Northern Spain may still be traced in localities, such as Costa Rica, where they formed a large proportion of the colonists. America, indeed, illustrates on a grand scale the contrast between the compactness of southern and the fluidity of northern attributes. The Anglo-Saxons, Germans and Scandinavians who colonized North America have developed some unmistakable distinctions in their new environment, whilst Spanish or Portuguese from South America would pass for natives of Madrid or Lisbon, and have infused many of their leading characteristics into the native races with whom they have interbred. But, it will be urged, if southern traits are, alike with northern traits, derived very largely from environal influences, they should also be modified by a change of environment. If, however, as seems probable,

they are by far the more ancient of the two, it is only reasonable to suppose that they will be more resistant to new influences. In the one case time may act by centuries : in the other it may be ineffective unless measured by thousands of years.

CHAPTER XII

CULTURE

By "culture" is meant the store of traditions, ideas and habits which is passed on from generation to generation, not by way of inheritance, but as a hand-to-hand gift. The term embraces all that we understand by civilization—almost all that is included in our religious, moral, artistic and industrial lives. Culture, like complexion, has been acquired from our environment; but from an environment not only of things, but of men—of human society, as well as of material conditions. Civilization has been developed by the successive inventions of individual men, just as the multiplicity of the animal and the vegetable kingdom has sprung from the physical variations of individual organisms. If we characterize as "natural" the ordinary balancing of instincts which is to be observed amongst the lower animals, culture may be described as "artificial." It rests upon the effects of habit in enhancing the influence of certain instincts, and in diminishing correspondingly the influence of others. The reproductive instinct, for instance, prompts male and female to come together at the age of puberty: urged by the instinctive desire to make the most of life, culture has postponed the date of marriage. It has conducted man to a pinnacle far above the station of the brutes; but it has led him upwards along devious paths of error. Undisciplined

reason is a dangerous guide. By arguments which accurate observation would have discredited it has induced men to mutilate their bodies by such practises as circumcision and foot-binding, to kill their new-born children, their aged parents, and to make unprovoked and objectless wars upon their fellow men. Led by directive instinct, the lower animals make no such futile mistakes : if instinct has contrived the hereditary mutilation of worker bees by the loss of their sex, it has certainly benefited the hive by their concentrated industry.

Man's extraordinary progress may in great measure be ascribed to a weakening of directive instinct which has compelled him to rely upon his reasoning capacity. The faculty of reason is no monopoly of mankind's : we can detect its working very far down the animal kingdom. But when subjected to the rivalry of directive instinct it is out-distanced by the straighter running of its competitor. So, in the case of the lower animals, instinct generally makes good its claim to leadership, and we may observe its influence in a uniformity of conduct amongst the individuals, or communities, that belong to the same species. One troop of monkeys in an Indian jungle precisely resembles another in its manners and habits. But the castes of an Indian village are sharply distinguished by peculiarities of behaviour. Man has gained incalculably in liberty of action by the loss of a tyrannical faculty, which, however safe a guide, tolerates no wandering on the part of its followers.

What is discovered by reason is recorded by memory, and since the records of memory do not become hereditarily imprinted upon the mind, each generation would start from the commencement of the track were it not equipped, by means

of language, with its predecessors' knowledge. Without language there could be no progression of culture. And, unsharpened by words, the reasoning instinct would have remained very ineffective, since causal connections, other than the very simplest, can hardly be conceived until the links are defined by means of symbols. It is difficult to imagine how we could think of heat as expanding a gas, or of 3 as the cube-root of 27, unless we possessed symbols—in words and in figures—to denote each of the conceptions involved in these ideas. Language has then assisted conscious reason. But conscious reason has created language. Directive instinct might suggest some means of communication by signs or sounds, and it certainly appears that many animals can give practical information to others of their kind. The use of language, however, goes far beyond this: it enables men to share abstract ideas, and, above all things, to instruct one another as to causes. It has progressed by the detection and isolation of qualities or properties, and by the attribution to each quality of its distinctive effects. A developed is distinguished from a rudimentary tongue by the provision of separate words to express stages of becoming or acting which are not detected by the uncultured mind. The embryonic stage of language has already been illustrated from South America, where tribes have not isolated, for instance, the idea of "washing," and use separate single words to express washing their bodies and washing their clothes.

Nor must we forget the effect of writing and printing in spreading culture, and in securing it against the accidents of time and human destructiveness. In past ages how many buds have been put forth by human aspiration only to be frosted, overwhelmed, or deliberately cut back!

On fragments of horn and stone we have sketches of reindeer and galloping horses which have been disinterred from the beds of the interglacial period, and carry us back across a period of, perhaps, two thousand generations. They are roughly scratched, but, in fidelity to life and in the expression of movement, they far surpass the artistic efforts of early mediæval Europe, and are indeed superior to much that was produced by the talents of Egypt, Assyria, India, and China. But by war, pestilence, or natural catastrophes, the culture that flowered in them was altogether blotted out. Even the literature of such modern nations as the Greeks and Romans has required to be reconstructed from fragments which have been recovered from the débris of barbarian conquests. But, so numerous are the books in which our knowledge and ideas are now recorded, that it is inconceivable that they should pass away.

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Reason, we have seen in Chapter V, consists in the linking of results with causes—in the inferring of happenings from other happenings—assisted by an appreciation of the *properties* of things—of missibility as the property of a stone, of lightness, invisibility, and elasticity as the properties of air. An urgent practical problem of life is to discover the causes of success or failure, why an arrow at one time hits, at another time misses, why crops may either grow or wither. We have learnt to attribute misfortunes to our own mistakes, or to unlucky accident. But there are hosts of illustrations to show us that these explanations are not satisfactory to untrained reason. Many days have not passed since misadventures which we should in these times attribute to ill-luck were regarded as manifestations of Divine interference.

This is the view which is still taken of them in Asia, where, if the purposeful intervention of a God is doubted, they are still ascribed to the workings of Fate. In the early days of his mental development man regards himself, not as an independent agent, responsible for error, but as a puppet in the hands of stronger forces. He seems unable to conceive of such an undirected existence as that of chance, and is persuaded that there is an outside cause for everything. It may appear extraordinary that the savage mind should have so rigid an idea of causal connection. But the voluminous records of beliefs and customs, which have been collected by anthropologists, testify very clearly to the existence of this conception. Indeed there are tribes at the present day who are convinced that man is naturally immortal, and that death is always the result of either violence, poison or witchcraft. We may then believe that a search for causes was an imperious propensity in primitive man.

Two sets of impressions make their mark upon us—firstly, those which are received by us through our senses, and, secondly, those which are presented in memory. To us it seems impossible that sensible objects should be confused with imaginary visions: we have been taught from childhood to distinguish the two. But an uncultured mind can hardly discriminate between the visions of a dream and sensory perceptions: the two impressions may doubtless appear to be of different orders, but one seems to be as real as the other. There are persons who are tortured by the most deceptive hallucinations of sight or hearing: most of us take time to lose the conviction of reality that is given by a very vivid dream. The verisimilitude of a vision is greatly increased if the memory is able to visualize clearly

—if it presents a picture in specious detail. This faculty is possessed by us strongly during childhood: it weakens as age advances, but there is reason to conclude that amongst savages it endures more persistently. To them the world resembles a cinematograph show, which presents two moving films, passing before them side by side, one of things observed, the other of things visioned. There are, then, two sets of happenings from which they can select causes, and, since the boundary line between the two series of impressions is not clearly defined, they may confusedly see in one series a cause for something that happens in the other. Their reasoning accordingly proceeds along a double track—one line concerned with observed, the other with visioned causes. We are ourselves not free from this duality. We offer prayers for fine weather, but do not neglect to take an umbrella—or to cock the hay—when clouds are about. The selection of causes, whether observed or visioned, has often been exceedingly erroneous. An Indian cultivator confidently believes that grain germinates most freely when it is sown by a pregnant woman, that the sprouting of sugar cane is stimulated should a horseman ride into the field. These are mistakes affecting observed causes. Everywhere in the Indian fields we may find illustrations of a belief in visioned causes. Sowing, harvesting and threshing are attended by rites of magic or worship that are supposed to control or propitiate unseen influences.

Another conviction, of far reaching consequences, resulted from the confusion of the seen with the unseen. It was imagined that every object possessed a double existence, one appearing to observation, the other in visions, the former transient, the latter everlasting. Such a con-

clusion may seem preposterous to educated minds. But by an effort of introspection we may conceive its possibility, and may understand how our ancestors thought that they were haunted by apparitions which were not phantasmal but realities. It is only in this idea that an origin can be found for the extraordinary fancies of magic and witchcraft—relics of our own history that have been preserved by barbarous tribes.

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Human society probably originated in small troops which lived in constant dread of the dangerous beasts that were so numerous, even in Europe, at the commencement of the quaternary epoch. The first cause of success was obedience to their chief, who was represented not only by the living head of the troop, but by the visioned spirits of departed ancestors. To revere the unity and the headship of the little group may have been the earliest beginning of religion : we can find traces of this observance everywhere. It is still the most popular cult of China : it is a living force in India : it swayed the ideas and the habits of the Greeks and Romans, and in modern Europe is acknowledged by the crowds which flock to the cemeteries on All Souls' Day.

In man's adventures with the brutes an observed cause of success was the use of weapons : a visioned cause was to capture or kill the spirits of the beasts in a mimic hunt. Man made himself flint arrows and axes, and drew pictures which would keep before him the visions of his dreams. So, in domesticating animals, practical skill in taming might be assisted by visionary influences : man added their images to his collection of idols. The cow appealed to his admiration with particular impressiveness : she typified the success that made men rich, and

was used to measure the extent of his riches : she was worshipped in Egypt, even by the Hebrews under Sinai : she is worshipped in India, and traces of this cult may be discovered in Europe. Could not the forces of Nature be domesticated also ? Fire was tamed by some remarkable genius, whom some nations have deified and all should revere. The sun, the rain, the winds of heaven could at least be conciliated by worship. With the increase of population wars arose, and the victorious leader, or a foreign conqueror, was remembered with the honours of a supernatural hero. Around these definite conceptions of divinity there upgrew a tangle of dreads and beliefs—erroneous connections of cause and effect—which darkened the mind with the degrading superstitions of fetishism and magic. Yet we must remember that from these fantastic imaginings, this visionary logic, have been distilled religions of spiritual faith and moral endeavour, and that from them are descended our modern ideas of art and ethics.

In the quest for causes our reasoning instinct has taken the lead : but it has been closely attended by our other instincts, which have at some times prompted its suggestions, and have at all times commended or opposed the ideas, visionary or practical, to which it has pointed. Thus the institution of slavery, which was declared by reason to be a means of securing comfort and leisure, was confidently approved by the selfish instinct : the social instinct firmly consolidated the respect for the family which co-ordinated its efforts in the chase or in war. The reproductive instinct confirmed polygamy, and might infuse into religion conceptions which actually idealized the obscene : the provident instinct sweetened the industry which reason dictated as the means

of livelihood. If reason advised the undertaking of a war, cruelty prompted the extermination of the enemy : kindness endorsed the emancipation of slaves which might reasonably be expected to encourage their honesty. Marvellous beyond all have been the effects of the æsthetic and ethical instincts—of the impulses to self-abandonment and self-restraint which are perhaps the most extraordinary manifestations of Life, and may almost plausibly be regarded as *supernatural* tendencies, unconnected, as they are, with practical needs. The former impelled man to prostration, dancing and music as methods of testifying his veneration : the latter to self-mutilation, asceticism and morality as means of conciliating the spirits of his dreams. Painting and sculpture may have grown out of the rock pictures which brought home to the cave dwellers the spirits of animals that they fought, hunted or domesticated. We may find in the mimic hunt the prototype of the drama, the first-fruits of the dramatic passion through which the theatre appeals to us all. Side by side with this life of visions grew up a life of practical endeavour. It was discovered that bronze made more effective weapons than flint, that stone was more durable than timber for building purposes. We are disposed to regard the harnessing of steam, of electricity, of petrol, the elaboration of machinery, as the greatest of man's practical inventions. But can we see a less originality of intelligence in the domestication of plants and animals, the control and usage of fire, the discovery of the loom, of the plough, of oars and sails, and of the wheel ?

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There is a tendency to believe that a community progresses in concert, as a crop of wheat grows, under the influence of an imagined "spirit of

the age." But if we carefully observe the origin and spread of modern inventions, we shall discover no trace of the general development of an inventive spirit. Novelties owe their birth to the original talents of comparatively few individuals, whose ideas are adopted—or may be neglected—by the crowd. It is as though a crop grew by imitating the size of a few precocious plants. [An impulse to change is inherent in all mankind; but generally it is strictly shackled by the chains of habit, and only becomes effective in those original, or eccentric, men who are endowed with a special measure of spontaneity. Some of these innovators are recollected and honoured; others have been forgotten in the mist of the past, amidst the distraction of wars and migrations. Whether as mystics, philosophers, artists, poets or mechanics, they have brought messages to mankind.] Their ideas have generally been disregarded, and they themselves have been despised—often indeed, like the prophets of Israel, they have been cast out and stoned. They have had opposed to them the prejudice of consolidated habit, and, when they have moved their fellows, it has been rather by the assistance of a chieftain, a priest, or an advertising agency, than by the intrinsic value of their ideas. [But we must not forget that their notions have commonly been erroneous, and that society would have perished had it adopted them all. We owe to inventors not merely the arts and industries that adorn modern life, but the wild, degrading and cruel superstitions which have distorted the path of our progress into labyrinthine complexity, and still misguide vast numbers of mankind.] How extravagant are the cults which within recent times have been accepted by the disciples of eccentric enthusiasts!

It appears, nevertheless, that society owes to individual inventors or reformers the whole of its culture, whether moral, artistic or material—that progress has, in fact, been pioneered by invention and accomplished by imitation. [Until recent years the development of culture has been exceedingly slow. For the innovator has the imitative impulse against him as well as for him: imitation is not only a dynamic but a static force: it is, indeed, far more potent in consolidating habit than in introducing reform, and the bonds of habit can seldom be loosened unless the impulse to imitate is reinforced by some more strenuous feeling. And when habit has been strengthened by the emotions of respect or sympathy, it becomes a settled custom, with foundations so strong as to be almost unassailable by reform.] Loyalty to a church, or to a king, will survive the greatest discouragements; sympathy between members of a caste, or a profession, will resist to the utmost any suggestions for change, even in so small a matter as in traditional style of dress. The Indian costume has remained practically unaltered for many generations: so has village dress in remote corners of Europe; and it is only of recent years that any relaxation has been tolerated in the customary dress of Anglican clergymen. [The conservative force of habit is strikingly illustrated by the immobility of the East. But, judging from the slowness with which man has climbed upwards from the savagery of palæolithic days, custom everywhere froze his endeavours and shackled his faculties during uncounted centuries.]

[A change has come over modern Europe. Amongst us, at the present day, inventive genius has less prejudice to overcome. By travel, by the dissemination of ideas in books and through

the press, the bonds of habit have been loosened, and inventors not infrequently see their ideas accepted with much credit to themselves—may, indeed, amass large fortunes. Custom is no longer firmly crystallized ; and it is interesting to observe that its disintegration began amongst the leisured classes whose habits were not hardened by the unbending routine of daily work. It is amongst the aristocracy of Europe that dress has for centuries been exhibiting its protean changes : it has been the upper classes that have introduced tobacco, tea, and coffee to their immense importance in modern economics : it has been amongst them that the liberal ideas have arisen which have revolutionized the tone of politics. These ideas have insisted upon the fundamental equality of man : they have spread to the masses and have had the natural result of impelling the poor to imitate the rich. Political power may be shared by all : deference must be reciprocal, and respect develops into mutual courtesy. However inexpensively, the dress of the leisured is imitated by the working classes ; and we may instructively compare the fashionable garb of a Sunday crowd on Hampstead Heath with the time-honoured costumes still worn by the peasantry of a remote Bavarian village. The inclination towards reform—the promptings of a questioning spirit—have, we may believe, been assisted very greatly by the influence of self-consciousness, for which increasing scope is afforded by modern habits of mind. The more clearly we see ourselves the less mechanical we are disposed to be in our behaviour. But to affect the heart-strings, imitation must be energized by the spirit of change—stronger in some individuals and races than in others, unnerved during countless generations by the hostility of Nature, or pent beneath the weight of

traditional habit, but still alive, and, when once emancipated, gaining new strength with every reform that it produces.

Even in Western society it is only of recent years that the desire for change has liberated itself into forceful activity. In the past, innovators could only overcome the prejudice of habit when they could enlist the assistance of other impulses, or could appeal to the pressure of changing circumstances. The most potent of these impulses has probably been that of *reverence* or *loyalty*. [Innovations which are favoured by a king or a priesthood may spread very rapidly. In the remarkable fluctuations of dogma which agitated the early Christian Church, we may see the ebb and flow of the ascendancy of particular bishops: the crusades are a striking, if familiar, illustration of the spread of a strange ideal that was favoured by the Church. To the conversion of monarchs Christianity and Islám have owed sudden and wide extensions. The prestige of a conquering race is a powerful stimulus: and war, however bloody and destructive, has brought different cultures into the same melting pot, so that each could attract something from the other. The conquests of Alexander spread Greek culture throughout Western Asia. Even in distant India the coins of Asiatic dynasties bore Greek inscriptions during several centuries. A subject people will imitate the language of its conquerors, however inconsiderable their numbers may be.] How much does not the English language owe to Norman-French! The people of Ireland and Wales adopted the tongue of their English over-lords; and, if prospects remain unchanged, in another century English will be the language of the Indian continent.

In one department of social life the faculty of imitation must always be reinforced by feelings of reverence. This is in the education of the young, which is ultimately based upon the respect which is felt for parents and teachers. Learning, it may be objected, is acquired rather by obedience than by imitation. But obedience is essentially a form of imitation: it is the repetition of an impression that is received under stress of authority. Fortunately for the progress of mankind the imitative instincts of the young are not encumbered with accretions of habit, and act so effectively that in a few years' time the growing generation can appropriate the acquirements of many centuries. At the present day knowledge has become so extensive and so diversified that it is impossible that individuals should learn the whole of it. Teaching is specialized, and particular branches of science are committed to different classes of the community. But, taken as a whole, each generation assimilates all that its predecessors have gained. And the boys of a village school are in possession of knowledge that lay beyond the ken of Plato and Aristotle.

When the chains of custom have once been unlocked, *sympathy* may assist the spread of changes, instead of retarding it. This is illustrated by the vagaries of fashion, which directs not merely our dress and manners, but our artistic ideas. The appreciation of mountain scenery is a modern taste. The Romans were not an uncultured people: they crossed and recrossed the Alps, but appear only to have formed impressions of difficulty and discomfort. In Dr. Johnson's time there was little admiration for Highland landscapes. A fashion for Greek art led the Renaissance. In modern painting and music strange tastes are arising under the fashion of the day. During the

past generation fashion has changed the behaviour of society by discouraging the use of alcoholic drinks. It has accomplished what legislation could hardly have attempted.

In cases where innovations appeal to strong elemental *impulses*, or to the feelings of pleasure and pain, they may gain currency without the assistance of reverence or sympathy. Such institutions as polygamy and slavery need no endorsement but such as is given by human passion. We may believe that the use of intoxicants spread very rapidly. Trade appeals to the acquisitive impulse, and international commerce is of more ancient date than is commonly supposed. Twenty centuries before the commencement of our era merchants were tracking their way through the forests of Germany to bring amber from the Baltic to the Mediterranean ; and the traffic in Cornish tin dates from almost as remote an antiquity. Indeed, the farther we look back into history the more surprise do we experience at finding that in days which we picture as barbarous, there was peaceful communication between lands that are separated by the breadth of continents. In the spread of culture from one nation to another, trade may have been less effective than war, but may justly be compared to it. If a people is richly endowed with æsthetic impulses, artistic craftsmanship may develop without artificial encouragement. During an epoch which is incalculably remote the cave dwellers of the Dordogne valley attained very remarkable skill in sketching from life ; and long before Rome or Athens were founded—even before Europe had learnt the use of iron—there were centres of handicraft manufacture in Germany and Scandinavia, at which stone and bronze were fashioned into arms and decorations with originality of

design and finish of execution. These artistic upspringings were subsequently over-laid by influences from the Mediterranean; but they rose again to the surface, and flowered in Gothic architecture.

Individuals and communities have not uncommonly followed a lead because they were pressed from behind by *circumstances*. The migrations which have influenced human history so profoundly have often been urged by scarcity of land or pasturage: customs and laws have perforce been adapted to the complications that arise from a growing population or material progress. It was an argument for the abolition of slavery that slave labour was ceasing to be profitable. In these cases reason has played a part in the advance of reform. But, generally, its authority has been less compelling than it would please us to believe. Even at the present day its vision is clouded by the prejudice of habit. We may, indeed, be excused if we distrust our reasoning faculties. On the most burning political questions of the day we see men of acute intellect divided in opinion and arrayed, one side against the other, in opposing camps. It is not, then, strange that we should be content with the guidance that we receive from our feelings and habits. We are astonished that, in the East, improvements in economics or in manners should spread so slowly. But our own expenditure is regulated very largely by the dictates of custom. It can hardly be said that patent medicines generally deserve their wide popularity. Political economy, in so far as it assumes that conduct is determined by calculation, may justly be termed a visionary science. The articles which we purchase, and the shops at which we purchase them, are settled for us, in great part, by habit and imitation.

Nor must we belittle our imitative faculty by supposing that it merely imposes upon us a mechanical uniformity, or conducts us forward by leading strings which simply affect our external behaviour. By following the ideas or actions of another we gradually strengthen in ourselves the influence of the impulses which these express, and equip ourselves not only, as it were, with new machinery, but with new motive power. We form new habits of mind, or "ideals," which affect us in spirit as well as in conduct. Thus the acceptance of Christianity leads not only to kindness of manners but to a more effective working of the kindly impulse. So also conditions of warfare subject us more strongly to feelings of cruelty; and democratic politics stimulate our impulse of deference to the crowd.

And, although we may find that culture has been won by steps that cheapen our ideas of human dignity, we may well be proud of the actual results. Man has so far outstripped the brutes as to deserve a place for himself, above the ranks of the animal kingdom. Between the chimpanzee and the lowest savage there is such a gulf as divides no other two classes of related animals. The one can only progress by the slow-moving wheels of evolutionary development: the other, able in some measure to change himself, has invented and adopted complications of behaviour which may have added to misery, which may have hastened death, but are the primæval foundations of modern culture. It is impossible to deny that there has been progress—that in manners and ideas we surpass the Greeks and the Romans as they surpassed the Egyptians and Babylonians. It may be objected that so comforting a conclusion might hardly be reached were our survey made from a point in the Dark Ages of Europe.

The tide of progress has flowed and ebbed. But, even at that time, there was a breath in the air of the spring of a new and more spontaneous vitality. The evils of those days are tearfully deplored by religious chroniclers. But it is something that they were deplored. And we must not forget that there is another side to the picture—that above the darkness of a confused morality there uprose the splendour of Gothic cathedrals.

§

How far can culture modify the innate character of an individual or a race? What are the limits of the artificiality which it can impose? This is a question of immense importance. Upon the answer to it depends our prospect of the future of each people of mankind. We have already seen reason to believe that there are persistent and obdurate elements in individual and racial character which cannot be modified by culture, and will continue to underlie the veneer which habits and conventions impose upon behaviour. If the children of a family, or the boys of a school, exhibit strong individualities under identical influences of training, we may feel sure that races will similarly retain peculiarities of disposition, however closely they may be compressed by the levelling force of civilization. Habit—or culture—effects miracles. We owe to it our rise from conditions of barbarism. A European child, brought up from infancy amongst savages, will behave like a savage; and each of us repeats the development of the race in his progress through culture, from savagery to civilization. If culture can transform an individual, within the space of a few years, from a barbarian into a citizen of a civilized community, may it not be

able to transform, for instance, the disposition of a Dane to that of an Italian? So far as present knowledge goes we must reply in the negative. With however much artistic training, Englishmen will not catch the ecstatic *abandon* of the Mediterranean temperament. In external behaviour culture may produce striking resemblances between different individuals and races. But it appears to leave the original character fundamentally unchanged. The force of habit has, in fact, its limitations. It regularizes our impulses not, it would seem, by modifying their innate strength, but by facilitating their emergence into action. If we imagine the various instincts of humanity confined like the winds of Æolus, and able to free themselves, each through an orifice of its own, habits increase the influence of certain of them by widening the outlets for their emergence, and so augmenting the stream of their activity. Within the receptacle their innate strength, or *potential*, remains unchanged. So we may observe that, under the influence of a strong excitement, such as is occasioned by war, love or acute emulation, the passions of the race display themselves in their innate peculiarity. When an impulse is innately weak, no enlargement of outlet will avail to give it sufficient strength to overcome competing impulses: when it is innately strong, it does not need the assistance of habit to flood the disposition with its activity.

But it has been the theme of this chapter to explain that, although culture does not alter the strength of man's heritable impulses, it regulates their action upon his conduct, and works extraordinary changes not only in behaviour but in habits of mind, or ideals. If a further illustration is required, we may find it in the lives of Christian converts. Changes of religion undoubtedly leave

much that is fundamental quite unaltered. But he would be blind who could not see amongst the negroes of the Carribbean, and the native races of South America that Christian culture has created new ideals, has ameliorated manners and raised the standard of comfort, quite apart from its spiritual effects. The same remark may be made of the converts whom Christian missions have gathered in other parts of the world. Those who become Christians develop a new set of sympathies: they become affiliated to the progressive societies of Europe, and are impelled to imitate them, whereas the adherents of other cults are opposed to Christian manners and customs by not unnatural feelings of loyalty to their creed. In Eastern Europe the progressiveness of Christian, and the stagnation of Mohammedan peoples convincingly illustrates the effects of these feelings. The Bulgarians are racially akin to the Turks. They have profited very remarkably by their inclusion within the pale of Christian fellowship, although we may conclude from the incidents of the late Balkan war that, when culture is dissolved in the heat of conflict, there is little to choose in malignant ferocity between the followers of Mohammed and those of Christ.

§

From the physical point of view, culture is working momentous changes in the conditions of human society. By subordinating the interests of reproduction to those of intelligent activity it is reducing the procreation of children, and actually threatens with extinction the most cultured classes of mankind. Amongst the poorest classes children are still born as plentifully as in Russia or India; but as the social scale rises, the birth-rate diminishes, until, in the uppermost

levels, it hardly amounts to a quarter of what Nature intends it to be. This fall is customarily imputed to the deliberate use of preventives against child-bearing, but we must hesitate to conclude that an artificiality which has not influenced the continuity of the race throughout countless centuries should, within a single generation, have become so widely adopted as to diminish the reproductiveness of a whole population by as much as a third. Undoubtedly it has an effect—and a great effect—in limiting the size of families amongst certain classes of the community. But we must not forget that the falling birth-rate has been accompanied by changes that are of immense importance to reproductiveness—a fall in the proportionate number of marriages, and a rise in the age at which marriage is contracted. In England, within the last forty years the proportion of marriageable women that are married has fallen from 57 to 46 per cent. It has been shown by elaborate statistical investigations that woman's potential fertility—her prospect of bearing children—which is at its maximum when she is 18, diminishes exceedingly rapidly as her age advances: indeed at 28 it has probably fallen by almost 40 per cent. Moreover it seems that a woman who is married in youth maintains her potential fertility longer than one who is unmarried—in fact, that a woman of 28 who was married at 18 has a better chance of bearing offspring than a bride of 28. In a less degree man's potential fertility also declines as his age advances over 25. Since the English birth-rate first showed signs of declining—forty years ago—the average age of brides has risen by 2 years, and that of bridegrooms by 3 years, and the proportion of married women who are under 25 has fallen from 15 to 10 per cent. The effect of this change in

custom will be evident if we compare the marriage ages and birth-rates of different sections of the population. In the classes who live by mining and textile work, where the birth-rate is still comparatively high, women are married, on an average, 3 years, and men 7 years, earlier than in the professional classes amongst which the birth-rate is at its lowest. If we compare the parishes of Bethnal Green and St. George in the East with those of Mayfair and Belgravia, we find that the percentages of married women who are under 25 years of age, are respectively 20 and 7; and we may reasonably believe that the higher birth-rate of the poorer parishes (37 per mille against 16) results in a measure from the larger proportion of young wives. The fall in the general birth-rate which has occurred since 1871, is, no doubt, too considerable to be accounted for altogether by the avoidance or postponement of marriage. The deliberate prevention of child-bearing has been a contributing cause. But it seems probable that if more women married and at an earlier age, the birth-rate would recover much of its former amplitude.

Generally, marriage is postponed for prudential motives, and where children are profitable to their parents, as for instance in the colliery districts of South Wales, young people marry early and have large families. The attitude of religion towards marriage has also been of importance. In religions which make a strong appeal to the æsthetic feelings, the reproductive impulses of mankind are boldly accepted as a gift from Providence; but those which express man's ethical aspirations avert their attention from these instincts as, in some way, shameful. We find, accordingly, that in the religions of Asia, in the Jewish faith, and in Roman Catholic

Christianity early marriages are accepted as a desirable accomplishment of providential intentions, whereas Protestant Christianity cannot actively encourage what it is ashamed to discuss. It certainly seems dangerous for the welfare of a community that its most successful classes should not subscribe effectually to the next generation. Delay in marrying is due very generally to a natural reluctance to lower the standard of comfort, and this feeling might be counteracted could social usages be so far altered as to render it incumbent upon grandparents to contribute liberally towards the up-bringing of their grandchildren. But the older generation cannot be expected cheerfully to accept the prospect of, say, putting down a motor-car in order to educate children's children: they are the custodians of the canons of social morality, and in these individualistic days they will hardly be persuaded to modify them to their disadvantage for the sake of posterity.

There are, however, some consoling reflections. It is by no means certain that the rich have anything more to transmit in begetting descendants than is possessed by the superior working classes, and these are increasing in numbers as rapidly as the very poor: their birth-rate is somewhat lower; but so also is their death-rate. Experience offers no ground for the belief that the culture of the leisured classes is transmissible to their children by inheritance. Would an Englishman, kidnapped by savages in infancy, show any traces of civilized polish in mind or in manners? Are not children born to most scrupulous parents endowed with a propensity to lie and to steal? Talents, or aptitudes, may certainly be passed on by inheritance, and the rich have often acquired their wealth by abilities which in the interests of the community might usefully be transmitted to the

next generation. But in the interfusion of marriage the qualities of the father very frequently miss descending to the son ; and, judging by the number of rich who rise from obscurity, talents often take birth in the families of quite humble folk. Moreover, we must remember that our chief national indebtedness is to men not of aptitude but of genius, who have generally risen from the undistinguished crowd, and have contributed, not children, but ideas to posterity. There are illustrations to show that striking originality may emerge even from negro parentage. In the present uncertainty of our knowledge it appears discreet to keep an open mind upon questions of heredity. Degenerate parents will breed liability to disease : by selective breeding size of stature, strength of muscles, and beauty of features may doubtless be promoted. But originality of genius is a more subtle character : it seems unaccountably to be allied with reproductive sterility. When so much is doubtful, theories are hazardous. It may be that, in their impulse to treat mankind from the purely physical standpoint, eugenists are leading us to such results as appear to have attended the Indian caste system. We have progressed by imitation ; but we have been led by genius ; and no excellencies of body could compensate for the loss of upspringings of spontaneity.

PART III
HUMAN ACHIEVEMENTS

CHAPTER XIII

MATERIAL PROGRESS

To preserve itself, Life enjoins upon each generation the imperative task of producing a generation to succeed it. Not a few creatures die as soon as this task is accomplished. But, generally, time remains for the care of oneself, as well as of posterity ; and this may be spent by the individual, not merely in the search for food, or in the service of the herd, but in provident activities which appropriate or rearrange the things around it. In man, these activities have become so complicated and widespread as to overshadow the elementary interests of animal life : he owes to them his elaborate civilization, the contrivances by which he seems to command Nature in place of obeying her. But they are shared, in some degree, by lower animals, and appear to arise from a special instinct—that of *providence*—which prompts living creatures not to submit themselves to their environment—or slavishly to adapt themselves to it—but with active foresight to mould it to their needs. The construction of protective, and often very beautiful, shells is a distinctive feature in the life history of molluscs ; and far below them, in the very lowest ranks of the animal kingdom, organisms which are mere specks of structureless jelly extract materials from the lime or silica in the water around them, for building shells, which, so small as to be invisible

except under the microscope, are as complicated in form as that of the nautilus, and are adorned with elaborate markings that must be unseen in the darkness of the ocean floor. These minute organisms not only decorate themselves at the cost of their environment, but effect marvellous changes in it: they die, but their shells remain, and, accumulated in the course of ages, form deposits of immense thickness which, subsequently raised above sea-level, contribute largely to the dry crust of the earth. The chalk of the English downs is constituted in the main of these tiny shell-cases. Corals support themselves upon a stony framework which they build up from materials that are dissolved in the sea: their labours also have the effect of extending the earth's land surface. Higher up the scale, the complicated nests of insects and birds illustrate very strikingly the action of a constructive instinct. To these activities the reproductive impulse contributes; their architectural skill is directed to the needs of their young. But there are cases, such as that of the bower-bird, in which materials are gathered and fashioned from the pure love of fashioning, from an impulse akin to that which prompts man to lay out a pleasure garden. Amongst mammals the provident instinct is singularly ineffective until we reach man. In him it is very strongly developed, and is one of the peculiarities which has enabled him so greatly to outstrip all other animals. In its simplest form it is the impulse to appropriate that is illustrated by the thievish propensities of a magpie. But when strengthened by a desire for comfort, or the thousand other ambitions of humanity, it will not only compel man to labour industriously; it is a powerful incentive to discovery and invention.

§

The domestication of fire is perhaps the most eventful fact in human history. It completely changed man's diet, and, since cooked food is more easily assimilated than raw food, it may have set free energy that was absorbed in digestion. In metals it revealed a material for tools and weapons that was infinitely more effective than flint. And it opened out the earth's surface for man's habitation: without means of warming himself, he could never have migrated from the tropics. How fire was brought into harness can only be conjectured. Obviously its use must have become evident before efforts were made to keep it or kindle it; and we may suppose, with Charles Lamb, that its value first became apparent through the accidental discovery of its service in cooking. It is believed that the fires which rush through the forests of India and other tropical countries may be kindled by the friction of dry branches under a persistent hot wind, or by lightning: the bodies of animals that have been overtaken by the flames may be found scorched amongst the ashes; and it is quite possible that savage man, by chancing upon them, may have been led to the idea of cooking for himself. This would only be possible if brands from the forest fire were carefully preserved and fed: once extinguished they could not be rekindled, and we can understand the reverence with which the hearth was regarded, and the importance that was attached to the continuity of its glow. In the East the desolation of a village is picturesquely described by the expression "its fire has gone out." There followed the discovery that fire could be kindled by fire-sticks, or by flint and steel. We have grown too familiar with lucifer matches

to realize what they mean to us. In India it is not very long since a pedlar could attract a crowd around him by striking a match.

The domestication of animals was another long step in material progress. We may believe that this was a development from the keeping of pets, to which man is naturally inclined by his instinct of kindness. Some species of birds and quadrupeds are curiously distinguished by the readiness with which they become tame; owing, it appears, to some weakness of directive instinct they can contract artificial habits more easily than other species to which they may be closely related. The intelligent, playful docility of the sea-lion is an extraordinary "sport"—a gem which lies hidden in the ocean. A little bird of Ecuador—the *chiroka* (*Icterus grace-annæ*)—in a few weeks will become quite habituated to man's society, and will be frightened by no noise or sight that it has once harmlessly experienced. The American grey squirrel fearlessly accosts passers-by in the parks, and there is a large Indian squirrel which will in a few days become astonishingly intimate with its captor. The tameness of the Indian mongoose is well known. But the docility of these animals is exceptional. Most birds, even although born in captivity, never lose their instinctive timidity; and such near relatives of the dog as the wolf and the jungle dog of India are quite untameable. We may suppose that the animals that have been domesticated by man were distinguished, as pets, by the facility with which they could acquire new habits: this peculiarity of disposition inured them to slavery, when it was perceived that they could serve man as well as amuse him. In the tropical regions that were man's first habitat, his first essays in domestication would be with the

dog,¹ the pig, and the fowl. Cattle may also have been tamed from a stock which lived in tropical forests, like the Indian bison and the buffalo of the present day. To domesticate animals of such large size was a great achievement: cattle not only supplied man with milk and flesh, but lent their strength to cultivate with the plough, and we can understand how they came to be regarded as wealth *par excellence*, and were accepted as the symbols of private property. Sheep and goats would be added by tribes which left the plains for the mountains: the horse, the camel, and the ass would be met by the wanderers as, in their northward course, they emerged upon the plains of Central Asia and spread towards Egypt. The strange conditions of domesticated life stimulated variations in these captive animals: peculiarities that arose were fixed by breeding, so that in the course of time they departed very widely from their ancestors in colour, form, and size. But, if permitted to regain their freedom, they will still revert to their original type.

Not less momentous was the discovery that man could intervene between Nature and her plants, making them to grow in uniform crops instead of sporadically, as in the jungle, and improving the quality and quantity of their produce. So long a period has elapsed since the principal food plants were reclaimed from the wilderness that the ancestors of many of them

¹ Upon the companionship of man and his brute associates certain parasites have built up a very peculiar course of livelihood. The tape-worm of man passes its embryonic stages, as a *trichina*, in the tissues of the pig, whence it passes to man by the eating of pig's flesh. It is disconcerting to learn that a tape-worm of the dog's occurs as a *trichina* in human tissues. There are traditions of peoples who maintained packs of hounds as cemeteries for the disposal of their dead; and we may conjecture that in the days of primæval darkness the dog was drawn to man by this gruesome office.

have disappeared from the wild flora of the earth. No wild progenitors can be indicated with any certitude for maize, the millets, wheat, barley, rye, oats, beans, lentils, yams, sweet potatoes, and sugar cane. On the other hand, rice, cotton, potatoes, tobacco, and the various root-crops can be traced to plants that still occur in a wild state. When grain-yielding plants had been brought under control the advantage would be perceived of growing oilseeds to provide a relish in diet and a means of lighting; also of growing fibres, the usefulness of which was enormously increased by the invention of the loom as a substitute for finger-plaiting. If diversity of crops may be taken as an indication of antiquity, it was in sub-tropical Asia that agriculture achieved its first developments. The principal cereals of European agriculture are exotics: wheat and barley were originally Asiatic, and it was not until the Arab conquests of the seventh and eighth centuries that cotton and sugar cane became known in the Mediterranean. Maize, potatoes, the haricot bean, and tobacco are heritages from the cultivators of Mexico and Peru. But Europe has specialities of its own—root crops, in particular, such as the turnip, the swede, and beet, which will not flourish outside the temperate zone.

In the development of mechanical art European civilization incomparably surpasses that of Asia. There is no such difference in regard to agriculture. The cultivation of Egypt, of Mesopotamia, China, and India, reached a very high standard of excellence: plants were differentiated into a vast number of varieties—indeed, over 700 kinds of rice are grown in India: the value of manuring and of rotations was fully appreciated. Modern science has ascertained that leguminous plants, through the agency of microbes which form

nodules on their roots, can enrich the soil by fixing atmospheric nitrogen: for centuries the cultivators of India have been aware of the fact, although not of its explanation, and have sown these plants in association with cereals. Much is now made of the "dry farming" which is to revolutionize the agriculture of South Africa. This simply consists in maintaining a fine surface tilth, and so checking evaporation from the subsoil. It is systematically practised by the ryots of Upper India, who will not sow wheat until, by repeated ploughings, the soil has been reduced to the consistency of powder. Far away across the ocean, on the treeless plateaux of Mexico and Peru there were other centres of agricultural skill, which followed lines that were curiously similar to those of Asia. The plough which is used in the uplands of Cuzco is the counterpart of one that may be seen in India; and the character of the crops and the disposition of the fields vividly recall the features of an Indian village. Modern agriculture has generally been content to grow crops that have been grown from time immemorial although it has improved their quality very greatly. It is only within the last century that tea, coffee, and cocoa have revolutionized the course of civilized diet.

To us it appears quite natural that individuals should possess property of their own: we are disposed to scout communistic theories as visionary, and opposed to fundamental proclivities of human nature. Yet, judging by the survivals of antiquity that may be discovered in laws and customs and in the practices of uncivilized races, we must conclude that in early times property belonged to the tribe, or the family, not to the individual, and that it was originally as unthinkable that a man should appropriate things in private

ownership as that a hive-bee should maintain a store of honey of its own. Man was of account only as a member of a society, and it was out of the question that he should hold anything in antagonism to his fellows. At the present day in a typical Hindu family there is no separate ownership : its members remit their earnings to the head of the family, and receive at his hands their fitting maintenance. There are still villages in India which periodically " pool " their fields and redistribute them by lot.

It seems probable that private ownership in women, land, or other things arose out of predatory conquest. Success in war could hardly be expected unless the fighting men were encouraged by the expectation of retaining for themselves what they had won by their valour ; and it is plausibly conjectured that marriage, the exclusive possession of a woman by a man, has its origin in the forcible capture of alien women. This supposition would explain two curious survivals—the simulation of ill-temper by the bride and her relatives, which is a common feature of marriage ceremonies, and the very general prejudice against taking a wife out of the bridegroom's own clan. It may easily be believed that the mastership of one man was less disagreeable to women than the promiscuous intimacy of the herd, and that they accordingly favoured their own enslavement. Warriors who were permitted to appropriate their plunder would, if victorious, become owners of slaves and cattle ; and, if the vanquished tribe was driven off its land, they might also be rewarded by the grant of allotments, which would be their own, exclusively, and free of all demands for the benefit of their fellows. War is now condemned by many as one of the most destructive of evils : it may be

so, but, such are the anomalies of Life, that we may owe to its influence our family relationships, our homes, and the very idea of our possessions.

The gorilla builds a nest amidst branches, and, prompted by a like impulse, man provided himself with shelter on the ground. In the tropics huts of grass or leaves would be his first essays in home-building. In the colder climate of Northern Europe he seems to have commonly taken refuge in caves, the occupancy of which he disputed with bears and hyenas. With an increasing population a new danger arose: inter-tribal wars became frequent and buildings were desired for protection against enemies. An earthen rampart might be thrown up, or the safeguard of a moat might be secured by building the village huts upon piles that were surrounded with water. On this plan the ancient lake villages of Switzerland were designed. With the improvement of tools durable materials could be handled: dwellings of more than one storey might be erected: castles for defence, temples in honour of the gods and monuments in honour of the dead might be built so solidly as to resist the corrosions of time during many centuries. But it was long before designs were altered with the change in materials; and to this day the bridges in Japan mimic in stone the beams and joints of wooden structures.

Man has been defined as a "tool-using animal." Without special appliances insects would be unable to construct their elaborate fabrics: by peculiar modifications of the jaw they are provided with as varied an assortment of implements as may be found in a mason's tool bag. Left to the guidance of his reason man for countless generations possessed no such resources as this instinctive equipment. His only tools were fragments of

chipped flint. Fire, transported from the hearth to the furnace, brought the metals into his service. Copper, tin and zinc were blended into bronze and brass : iron was not more refractory, but in Asia and Europe was a later discovery. Carbonized iron (steel) of good quality could be produced by simple appliances if used with skill. To steel-edged tools most materials are submissive : the blacksmith could work in iron, the carpenter in wood, the mason in stone, and could elaborate ornamental embellishments which in some countries were brought to a high pitch of artistic excellence. But the motive power was man's own strength : manufacture was by handicraft. Only a century and a half has passed since the discovery was made that by the burning of coal energy could be evolved which could employ tools with infinitely more efficiency than was attainable by human muscle, so that man, having once harnessed this power to his machinery, could stand aside and watch the achievements of the *jinn* he had enslaved.

Dress originated in an idea not of decency or of warmth, but of ornament. It has accordingly been the practice of almost all races of men partially to undress themselves as a sign of respect. Orientals uncover the feet ; Europeans the head. It is related of the Sultan of Melli that he would permit no women to enter his presence until they had discarded all their clothing ; and ladies may not be presented at the royal courts of Europe unless they are clad in *decolleté* fashion. Amongst uncultured peoples beads are often more prized than clothing, and their women are loaded with necklaces when scarcely provided with a nether garment. Civilized nations, under the promptings of reason, have discovered the protective value of clothes : they have also strayed into

the most fanciful ideas of their connection with decency. The history of dress throws an interesting side-light upon human character. Amongst the richer classes of Europe there has been, during a thousand years and more, a desire for change which has led to increasing alterations of fashion. Until recently the poorer classes were content to wear a customary dress. In India fashions have hardly changed during many centuries.

There are tribes, with some pretensions to culture, and much skill in handicraft and agriculture, that have remained ignorant of the art of writing until they learnt from Christian missionaries that they might express their language in Roman characters. Yet pictorial writing appears to be an obvious development of such elementary acquaintance with drawing as is possessed by most savages. It seems easy to represent the idea of a house by a rough picture of one, and it is surprising that the art of writing pictorially—or ideographically—did not become as widespread as the use of fire or of the loom. It was the idea upon which Egyptian hieroglyphics were elaborated: they were eventually turned to express syllables or letters, but continued to be used ideographically until classical days. The cuneiform characters of Mesopotamia were similarly of pictorial origin. The natives¹ of North and South America were familiar with the use of pictorial writing; and in the Bolivian museum at La Paz there is a parchment, of comparatively recent date, on which Indian hands have represented pictographically so abstruse a subject as the tenets of Christianity. Ideographs are still used by the Chinese, and in a less degree by the Japanese. They have one great advantage:

¹ As also the inhabitants of Scandinavia during the Bronze age.

expressing not words, but ideas, they can be used between persons who speak different languages : they are understood in Peking and in Canton although the languages of these places are quite dissimilar. But they are cumbrous, and unless complicated by many artificial conventions—such as, for instance, the addition of symbols to signify *sounds*—they are hardly capable of expressing abstract ideas or shades of meaning. The nations of the world have generally come to write phonographically, that is to say, to employ symbols to denote not things, or the ideas of things, but the sounds by which things or ideas are denoted in speech. This improvement was discovered very slowly. It must have been difficult for unscientific minds to conceive of the reproduction of a sound by a mark or symbol, and the first dawns of the idea may have arisen out of punning—by the employment, for instance, of the picture of a post to signify a post-office. In this case the picture actually recalls not an object, but a sound, and is really phonographic. The next step would be to use pictorial symbols to denote the first syllable of the name of the object that they represented : thus the picture of a cabin might stand for the syllable “ca.” The analysis of syllables into letters, and the allotment of abbreviated symbols to individual letters was the final stage of the invention. But phonographic writing could easily be misunderstood and took time to gain confidence. In the hieroglyphic inscriptions of Egypt the phonographic representation of an idea is commonly followed by an ideographic picture known as the “determinant” : as a child, after scrawling the word “bullock,” might add, for greater clearness, a picture of the animal.

The most difficult step in the development of

writing was the analysis of syllables into letters : this once accomplished, it was possible to express the sound of each letter by an arrangement of dots and dashes such as is used in the Ogham alphabet of ancient Ireland—and in the Morse system of modern telegraphy.

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By trade, or the exchanging of articles, men are able to obtain things which they cannot produce or make for themselves or seize from others. It has been attended by abuses which have increased the tale of human misery. Slavery has followed in its train, and the ruin of backward races by spirituous liquors. But with a magnetic attraction it is drawing together the different races of mankind and is developing a practical idea of human brotherhood—in money-making if not in sympathy. Less strong a bond than religion, it is infinitely more extensive. At first it enclosed the village within its meshes of mutual inter-dependance, uniting the cultivators with the artisans upon whose industry they relied for their implements, their furniture and their clothing. From the village its tentacles spread to the nation, to groups of nations, and finally have embraced the whole world. Under its influence civilized lands have been covered with a network of railway lines and telegraph wires, along which streams of travellers, letters and messages are incessantly hurrying, regardless of the boundaries which artificially separate communities of mankind. The financial reservoirs of cash and credit, from which trade draws the streams of its activity, have been internationalized, and the obligations of different peoples are so closely interlaced that an injury to the resources of one is felt by all. Financially, it may then be urged, war is a

mistake ; and there are enthusiasts who expect that considerations of profit will gradually soften men's fighting instincts and reconcile the civilized world to unbroken peace. So high are the hopes that may be built upon a system which is founded upon the narrowest conceptions of self-interest.

International trade may, accordingly, be regarded as a flood which is spreading ideas and inventions throughout the world, and does not permit them to be monopolized by any particular nation. But we must not forget that from the beginning of human civilization there must have been a current, however slow and intermittent, which maintained some intercommunication between the races of mankind. There is no tribe, however backward, which is unacquainted with the use of fire : the plough and the loom are known almost universally. We can hardly believe that these discoveries—and other surprising similarities between the culture of widely separated peoples—originated independently at several centres ; and we must, then, suppose that in the course of ages a knowledge of them filtered gradually around the world. Trade routes have been respected by the most barbarous nations : the blackmail that they levied spared sufficiently high trading profits ; and we find that amber from the Baltic was well-known in Asia centuries before the Trojan war, and that Greek ornaments and vases reached Northern Europe when, to the people of the Mediterranean, it was a land of terrifying fable. Some inventions were so patently useful as to command immediate adoption : the spread of others would be impeded by the force of custom until it was urged by some special pressure. Such may have been exerted by rulers of intelligence, or by religious priesthods. But more potent influences would be those of war and

intermarriage ; during the ages in which trade brought nations into merely surface connection, it was the ebb and flow of conquest and migration that most effectually transported new ideas and usages from land to land. Northern India was no doubt desolated by the Aryan invaders, as subsequently by the Tartars and Moghals : but from both it gathered some novelties of culture. The Turkish conquest of Constantinople shattered the last fragments of Greek civilization ; but refugees from the catastrophe brought ideas into Western Europe, which took root in eager but uncultured minds and blossomed in the Renaissance.

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Material civilization was late in spreading to Northern Europe, but, once planted there, flourished with a changeful vigour which speedily gave it a character of its own. Amongst the Baltic races the provident impulse of acquisitiveness is very strongly developed ; but until modern times it was chiefly exercised in robbing others, and their history exhibits a covetous turbulence that contrasts very strongly with the placidity with which the Mediterranean races accepted the domination of Rome, and with the acquiescence of the peoples of India in British rule. The prospects of gain that were opened by civilization diverted their energies into more productive channels. Finding that riches and comforts could be acquired by industry or by commerce they have thrown themselves into these pursuits with an aggressive activity which has effected more change in material conditions than had come about in many thousands of years preceding. They have cared little for the philosophical speculations which occupied the minds of the Greeks, and still influence the opinions of Indians

and Chinese, and have generally been content to accept morality and religion as affairs of law or of habit. The æsthetic impulses which stir southern races to self-abandoning ecstasy excited in them much colder feelings. Their instincts sought more practical activities and have been turned to the improvement of their material surroundings. Death, which by other peoples has been accepted as decreed by fate, has by them been met in a spirit of antagonism—as an evil which man should show his skill by averting. Cleanliness has become accepted as a gospel message, and comfort as man's most rational desire. Surroundings should not only be clean : they should be pretty ; and, when travelling, we may learn from the cottage gardens of the poor that we are under Baltic not Mediterranean influences. The strong individuality of these northern peoples is manifested in their idealization of the home, and by their desire to beautify it : this feeling influences them even when in distant exile : the German colonies in Brazil and Chile are markedly distinguished by neatness of houses and house-surroundings from the cheerless villages of their Latin neighbours. Religion and politics are regarded from a practical standpoint. Their religion has not been so much concerned with technicalities of belief, or mysticism of ceremonial, as with the construction of churches and cathedrals, with philanthropy and social improvement. Even during the dark ages of Teutonic Christianity the monastic life was esteemed more as an opportunity for industry and good work than for the religious meditation which other races have accepted as its crowning merit. Protestantism sets a higher value upon moral behaviour than upon niceties of belief. The personal issues which everywhere give politics their most exciting

interest have in the north been linked with practical considerations, and men's adherence to one politician or another has to some extent been guided by their opinion of the social effect of the views that he professes, and has not been solely determined by sentiment or jealousy.

The industry of these Baltic peoples has been stimulated very greatly by the freedom of their women. Swayed less masterfully than southerners by the reproductive instinct, they have, from the beginnings of their history, prized woman for her companionship as well as for her purely sexual attributes, and have conceded to her a substantial measure of liberty. The mediæval ideas of romance and chivalry manifest a self-restraint in regard to her which seems strange, if not ludicrous, to a Mediterranean. Her material desires are treated with indulgence, and they have been a most important factor in creating the demand for dress and furniture which has started the wheels of factories and has swelled the current of trade. Man is generally content to live in barbarous simplicity, or to share with other men the comforts of a club. It is to woman that we owe the multifarious demands of the home—the extravagances, if you will—that attend the establishment of a separate centre of life for each family. Imagine the streets of London deserted by women: nine-tenths of the shops would be shut: the tramways and omnibuses would pay no dividends.

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It must be confessed that these material ambitions are in themselves less respectable than the ideas that may be evoked by introspective meditation: the pursuit of comfort, of riches, can hardly be ranked with the moral aspirations that have been enshrined in all ages by religious and

philosophic thought. It is a truism that riches do not give happiness : neither can they mitigate the terrors of death : a wise man will surely prefer to them the careful training of his own mind. But it must be remembered that, although wealth may in itself be vanity, its pursuit gratifies the provident instinct and is therefore exceedingly pleasurable. And from the desire for riches have arisen new standards of ambition which may at first blush appear sordid, but have in effect conduced to human benefit. We are impressed by wealth almost as much as by birth or breeding. We are coming to respect success in industry or in commerce more than the authority of a king or the antiquity of an institution. The East still admires the capricious despotism of a strong ruler; but "Bluff King Hal" or "Good Queen Bess" would, we feel, be unacceptable anachronisms in England of the present day. We wonder what the Somersetshire peasants can have seen in Monmouth that they should have shed their blood for him. The House of Lords, the Established Church, are no longer secure in popular veneration. Material ambitions may appear an unworthy substitute for feelings of reverence and loyalty. But they make for freedom, and the spread of culture. In the pursuit of wealth artificial class barriers are levelled : success is open to the poorest, and the difference between the lower and the upper classes of the people is seen to be one of circumstances not of essence. The poor may accordingly copy the rich in dress and in manners : dress they must imitate in cheaper materials, but in manners they may be—and are becoming—of the finest. Culture is, then, becoming the heritage of all, not the privilege of a few.

These feelings of emulation may bear bitter

fruits: the current of industry is frequently disturbed by strikes of workmen. But the increasing similarity of interests and pursuits tends to draw rich and poor together: kindness on the part of the well-to-do is the more appreciated as it becomes more sympathetic and less patronizing. Moreover, the activity which is exercised upon material objects appears incidentally to react upon the mind, weakening the instinct of cruelty and strengthening that of kindness. It certainly does not arouse such jealousy—that cruellest of emotions—as is provoked by struggles for social or political precedence. So the Baltic races, in wrestling with substance, have found more abiding visions of the spirit than have been vouchsafed to peoples of less practical instinct. They have led the world in philanthropy as well as in industry, illustrating the fable in which a man's heirs, by digging for treasure in his orchard, find in the improvement of its produce the gold which his will had promised them. Their wealth and prosperity have drawn upon them the eyes of all other peoples, and, by imitation, their cult of the material—and even their attitude towards women—have spread, and are spreading far and wide amongst nations that fall within the pale of Christendom. Outside this circle of religious kinship the ideas of Northern Europe are adopted much less eagerly: they can hardly be accepted without some suspicion of disloyalty to creed, some sacrifice of natural pride. So Turkey hesitates to follow her Christian neighbours; and India lags, in her standard of comfort, behind the humbler families of the British Isles.

CHAPTER XIV

SOCIAL PROGRESS

MAN is a gregarious animal, and it is, then, in the herd, rather than in the family, that we should search for the foundations of our social fabric. We may perhaps discover some of its primæval features in the behaviour of a troop of monkeys. Amongst them there is neither marriage nor private property ; all things are in common, save for the interference of superior strength or courage. These qualities are respected, as also is age. There is generally a leader of the troop who must be strong and courageous : he must also, it seems, be old, and he is generally ill-tempered.

The first beginnings of exclusiveness were due, we may believe, to the predilections of woman, who, naturally disliking to be at any man's disposal, reserved her attractions to certain members of the herd. This introduces us to the custom of polyandry, which is still a living force in some respectable communities ; it has, for instance, maintained itself amongst certain peoples of India and Tibet. Woman took a further step when, following the dictates of her heart, she denied herself to more than one man, whom she accepted, more as her customary lover than as her legal husband. Amongst a very intelligent tribe of Assam, marriage is still in this embryonic stage. A man does not

live with his wife—does not, indeed, take his meals with her: he visits her, more or less stealthily, at night, and has no concern with the upbringing of the children. In these circumstances woman, not man, is the pivot of society, and we have the conditions of the matriarchate. Children belong to their mother's family; women are the titular holders of property, and succession to property tends to go through the female line. We find traces of the matriarchate, subsisting throughout the world, in the cult of female divinities.

Conditions of warfare introduced momentous changes. Men who captured women in inter-tribal conflicts could hardly be denied the exclusive possession of them, and might retain them as their particular share of the booty. Life elaborates beauty from the humblest origins, and we need not shrink from believing that marriage has sprung from conditions of slavery. There are (as has already been mentioned) some curious survivals in marriage customs which seem to indicate that the wife was originally a captive woman, who, belonging to an alien tribe, was not subject to the claims of her captor's tribesmen. A leading warrior might not content himself with a single wife: to possess a number of wives might indeed become a sign of dignity. The conditions of peace were reversed, and a multiplicity of wives took the place of a multiplicity of husbands. Man became the pivot of society: the matriarchal gave way to the patriarchal system, and the foundation was laid for family life as we now know it.

Woman's rule was, then, born of peace, man's rule of war; and it is amongst warlike races that we find the most despotic developments of the power of the husband and father. Marriage

customs, like all other customs, spread by imitation: unwarlike communities would tend to copy the manners of their more forceful conquerors or neighbours. Man's authority advanced; woman's declined, and we can trace the progress of this revolution during the period of recorded history. Succession through males is now almost universal amongst races who have any pretension to be civilized. But in legends and fairy tales how often does it not come down to us that anciently a young man might win a kingdom by attracting the affections of a king's daughter!

But, it may be urged, if the patriarchal system arose out of woman's slavery, how comes it that woman has been so highly esteemed amongst some races which have accentuated strongly the authority of her husband? She might be honoured or dishonoured under the mastership of man. In Asia the patriarchate has commonly been polygamous. In Northern Europe, under the impulse of peculiar instincts, the subjection of the wife had the effect of identifying her interests with those of her husband: servitude grew into partnership, and the chastity which she contributed to the common stock was regarded as her most cherished possession. It might be preserved in the face of whatever temptation, and did not need to be safeguarded by the bars of the harem.

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We may, then, conclude that the family, which appears to be the most natural element in the constitution of society, is in reality an artificial creation—the composite result of various impulses. Sexual attraction is its foundation; but this is transitory, and can fortunately be replaced by feelings which spring from our impulses of sociability, habit, and kindness. Selfishness

enters into its framework : the marriage tie is reinforced by notions of exclusive possession, of particularity, of service. Maternal love is its cement ; for this imperious impulse finds in family life the best means of expressing itself. The affection of a mother is one of the most beautiful impulses of life : the complete self-abandonment of its promptings appeals very powerfully to our æsthetic instincts, and we should like to believe that it is *directive*—that it leads a mother infallibly to detect her children. Not so : it is blind. A hen will bring up as her own the chickens of another, will feel motherly love for a brood of ducklings, has been known to adopt a litter of ferrets in spite of the distress they occasioned her in searching for her teats. The hedge-sparrow will labour incessantly to feed a young cuckoo, although its large size should repel her, and she may have seen it shoulder her own young out of the nest. Cats will suckle puppies—even rats. A mother will cherish as her own a baby that has been substituted, if she is unaware of the substitution ; indeed, a foster mother's love may show all the self-sacrifice of the maternal instinct. When this instinct is not satisfied by maternity it may be lavished upon a pet dog. It wells up from the depths of a woman's heart, but laves the object that is nearest to her.

Marriage that is monogamic makes a further appeal to elementary human feelings. In its intimacy — its mutual confidence — man and woman enjoy the completest satisfaction of that social instinct which makes it so hard for the individual to stand alone. The mask is thrown down that hides self from society : each gives the other visions of reality, and it is a blessed relief to be rid, during some hours of the day, of the artificiality with which individuals

protect themselves against the crowd that they are compelled by their impulses to contemn and to respect. It is often claimed for the monogamic family that it provides a nursery and a class-room for the next generation, and is essential to civilization, if only on this account. It may certainly enable children to profit to the utmost by a mother's care, and by the expenditure which a father is willing to incur upon those whose interests he identifies with his own. But many mothers are inefficient nurses : few parents are inspiring teachers ; and from long time past, in the upper classes of English society, mothers have been content to leave their little sons to be instructed by schoolmasters, and to be initiated by other boys into the ways of life. The difference between the ideal of family life and its actualities has been recognized by the State, which during the last generation has itself undertaken to educate the children of the poorer classes, and has even commenced to feed them. These children generally regard the school house as their home, and feel more respect for the school-mistress than for their mothers. And this is no matter for surprise. Family life loses its attractiveness in a single-roomed lodging and amidst the recreations of the pavement.

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If, marriage apart, we endeavour to analyse the cement which consolidates human society, we shall find, here again, a variety of elements. Some relationships, such as that of master and slave, are upheld by the narrowest impulses of selfish interest : others, such as comradeship, display the depth of our social, or unselfish, sympathies. Sympathy may be warmed by

kindliness : selfishness may be blunted by kindness or sharpened by cruelty.

Turning, in the first place, to the influence of the social impulses in linking men together, we observe that, like the maternal impulse, they are vague and uninformative until, focussed by propinquity, they find their object in the persons whom we see around us. We insensibly defer to our close companions: friends may be more to us than relatives: our charity is moved more strongly by sights than by tales of distress. Men who have lived amongst alien races—and may criticize them severely—will defend them in case of need even against their own kin. Anglo-Indian officials will champion the cause of Indians against such belittlement as is implied by the immigration policy of the South African government. But the propinquity may be ideal as well as actual: notions of it may be evoked by conceptions that arise out of memories, as well as by the impressions of our senses. The idea that another is a blood relation predisposes us towards him. So also do ideas of comradeship in religion, in business, or in opinions. A Mohammedan is drawn towards a Mohammedan, a surgeon towards a fellow-surgeon, a radical in politics towards another radical. Ideas of closeness that arise in this fashion have been of immense importance in human progress: they are, indeed, the foundation upon which much of our social structure rests. Sympathy that is born of sight or touch may be stronger than can be generated by ideas of fellowship. But obviously it can bind only a small society; and towns, countries, and nations would lose all coherence were their inhabitants not welded together by the wider feelings which may be aroused by ideal conceptions of relationship. The history of the birth of these conceptions—whether religious, social,

or political—is in fact the history of the development of modern society.

The earliest of these conceptions is that of blood brotherhood. This was the foundation of the tribe. It was assumed that the members of a tribe were descended from a common ancestor; outsiders might be admitted, but only by a formal adoption ceremony which had the mystic effect of a rebirth. From the tribe sympathy broadened to the nation, or group of tribes, unified by the possession of a single government, but not effectually compacted until the right of inter-marriage was generally conceded. Or, sympathetic conceptions might take a different course and collect around ideas, not of relationship but of neighbourhood. Thus the village, the town, the country became, so to speak, endowed with a consciousness, a patriotism, of its own, which might at times be in conflict with tribal sympathies. Within the State men became collected into groups by the notions of fellowship which originated in similarity of occupation: the Indian caste system, originally tribal, has been reinforced by these notions: the solidarity of guilds, and trade unions, illustrates their force; indeed, traders and artisans who follow the same line or calling have tended to congregate together in the same quarter of the town. Endless, indeed, are the ideas which, like centres of magnetic attraction, draw men into clusters within the circle of the State. There is an *esprit de corps* of the class, of the political party, of the club, of the regiment; and the community may be honey-combed with secret societies, which to some races are irresistibly fascinating. So attractive may be these partisan interests that they may undermine the sympathy of the nation as a whole. Patriotism may be choked by them. This needs a unity of

interest, and we may learn from the marvellous successes of the French revolutionary republic that, when this is forthcoming, no feat of arms is impossibly difficult.

Loyalty to a general or a king may take the place of patriotism—indeed, has often been its predecessor in time. We intuitively reverence the leaders of the herd. The institution of monarchy probably originated in conditions of war, in which a nation is greatly advantaged if its forces are directed by a single authority. For this reason the Jews desired a king; and within recent years a curious illustration has come from the experiences of some hill tribes across the Assam frontier. They sought British assistance against a small immigrant tribe which they were unable to withstand because, amidst democratic communities, it was governed by a raja. But feelings of loyalty must be supported by ideas of kingly attributes, which in these intelligent days will not long irradiate a monarch who does not possess these qualities.

We need not insist upon the unifying effect of religious beliefs. Their influence has been immense in consolidating peoples—and in disintegrating them—in raising the moral tone of a nation—and in hurling it blood thirstily against other nations. Amidst the distractions of modern philosophy, politics and pleasures, religion is losing its compelling authority. But that it is still a living force may not be doubted if we regard the present state of Ireland, and of French Canada, the recent war in the Balkans, the bitter animosities which occasionally antagonize Mohammedans and Hindus.

A feature of present day conditions is the remarkable development of the spirit of nationality. From Ireland and Wales to China sections of the populations of empires and kingdoms are asserting claims

to, so to speak, a national personality. These pretensions are based upon notions of unity that are derived from past history, and their advancement may be attributed to the increasing attention that is paid to historical studies. To corroborate them by evidence of singularity, attempts may be made to resuscitate languages that are actually dead.

So far for the ties between man and man which rest upon the influence of the social instinct. But these are not the only links in human society. By the selfish, or individualistic, impulses, bonds have been compacted which have drawn men together as by hoops of iron. Many of them have been forged in the smithy of war. Slavery is technically dead; but up to quite modern times it was a vital element in the constitution of society, and, from a practical point of view, it is still a living institution in some Spanish and Portuguese countries. It is not peculiar to mankind: some species of ants have slaves, which appear to become greatly attached to their masters and will fight energetically on their behalf. Slaves might be acquired by raiding: in this case their condition generally became that of domestic servitude. Or, when a country was conquered, the indigenous population might be degraded to a position of helotage, in which they might labour on their fields, but for the conqueror's benefit, and were carefully excluded from political privileges. As time advanced, and their condition improved, they have claimed freedom, and even political equality, and they have generally made good their claim except in cases where the ruling class has rigidly maintained its vigour and exclusiveness. The conflict between the patricians and plebeians of Rome is a familiar illustration of this social revolution; and we have an instance nearer home in the history of Ireland.

Since commerce has become a temptation

for the world, countries have been conquered in the interests, not of colonization, but of trade. In these cases there has been little interference with the activities of the subject inhabitants; indeed, they may be infinitely more prosperous than they would have been under a government of their own. So it is in the Asiatic dependencies of Britain, France, and Holland. It may be urged that under alien rule the native peoples lose heart for self-improvement. It does not follow, however, that they would have advanced more briskly under native rulers. The peoples of India are decidedly more progressive than those of Turkey, Persia, or China. Culture has spread by imitation, and in the past civilization has owed much to the lead of foreign conquerors. But it is true that in these days self-conscious pride may hold men back from adopting alien fashions.

Domestic slavery has given place to the relations of master and servant: predial slavery to the relations of employer and employed. In modern society these are, beyond all comparison, the most important of the social links that are formed, not by the social, but by the selfish impulses of men. Servants and employées so far resemble slaves in that they are obliged to work. But they may choose their employers; they may combine, and may gradually compel the payment of higher wages. But large numbers of them live in abject poverty, lacking even the security of a slave's subsistence; and it would be idle to pretend that their indigence does not prove that our social organization has its signal failures. Their misery is in great measure the result of their freedom: there are two exits from the Temple of Liberty, one leading upwards, the other down.

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Ideas of liberty are, indeed, always striving to unloose the fastenings—whether selfish or unselfish—wherewith society is bound together. According to the theory of human behaviour which we are endeavouring to maintain, liberty means little more than opportunities for change. None the less is the desire for it a fundamental impulse of human nature, which in the majority of men is restrained by habits of mind or body, but leads others violently to attack established ideas and customs. Through the shrine of Liberty one may pass sometimes to a promised land, sometimes into the wilderness, often, indeed, only from one walled labyrinth into another. The soaring ideals of the French Revolution accepted their accomplishment in a military despotism: the liberty of combining—so precious to workmen—reconciles them to such a tyranny, at the hands of their union, as no monarch would dare to impose. We may, in fact, conclude that, generally, liberty means little more than freedom to choose one's master.

Not infrequently, moreover, the ideas of enthusiasts may be demonstrably pernicious. Yet they are none the less strongly urged against the established bulwarks of society. What wonder, then, that the guardians of these ramparts, whether kings, priests or lawyers, should have regarded reformers as the enemies of mankind, and have striven to repress their propaganda by ostracism, persecution, and martyrdom! They have erred—erred cruelly—but not altogether so selfishly as is sometimes imagined. For, until reason has been trained and knowledge disseminated, the quack has as great a vogue as the qualified doctor, and it may reasonably appear safer to stand still than to advance in complete

uncertainty. None the less is it true that progress is impossible without liberty to change; and it is a striking proof of the advancing intelligence of mankind that in western countries people may be left almost unchecked to listen to exhortations whether good or evil.

Freedom or choice—be it only of a tyranny—is undoubtedly an ideal of growing influence. It is the mainspring of modern democracy, and is gradually revolutionizing society by disposing mankind to dislike the routine of discipline. We hear of strikes every day. Women are in revolt against the dominance of men. Girls leave domestic service for factory work: armies can hardly be maintained by voluntary enlistment: workmen repudiate the promises of their leaders. This tendency is, naturally, deplored by those who suffer from its consequences; and we may undoubtedly discern in it threatenings of evil as well as promises of good. It may even endanger the existence of a State by disarming it in the presence of enemies. But, if change is Life, we must not hastily condemn the swaying of our impulses. If civilized man is becoming less amenable to discipline, he is at the same time becoming more kindly in feeling, less inclined to close his eyes to the interests of others.

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A philosopher searching for the key-note of our present culture might indeed find it not in knowledge, nor in wealth, nor in luxury, but in the astonishing development of man's kindly feelings. The emotion of kindness is, as we have seen, connected with the impulse to embrace or fondle, which is manifested very clearly in the social life of southern nations. In northern peoples the impulse is not focussed so strongly upon flesh and

blood, and, perhaps for this reason, can excite emotions of more general sympathy. The Mediterranean races are still very far from humane : their descendants in Central and South America are not infrequently obsessed by a maniacal lust for cruelty. The Baltic races may claim with some reason that they are less passionately afflicted with a desire to torture, mutilate or kill ; but their history abounds with illustrations of the fierce over-mastery of cruel impulses. Now, however, amongst them—and especially in England—philanthropy has become a fashion of the day. It is not merely that enormous sums are dispensed in charity, or that the well-to-do consent without much grumbling to be taxed in order to educate and feed the children of the poor, but that there is a desire to see and mix with the poor, to visit them in their homes, and render them personal service. Cynics may object that these benevolent feelings are prompted by the consciousness that the poor have votes. Not so : they are also awakened by the ill-treatment of animals ; and, indeed, there are many to whom the overloading of a horse is more distressing than the sight of a neglected and hungry child. In Canada and the United States alms-giving is hardly practised : if any need it, they would resent the offer of it. But a spirit of mutual helpfulness is manifest everywhere : it is good to watch frock-coated doctors and lawyers, at a suburban railway station on their way to town, turn their hands to assist market-gardeners in loading their boxes of fruit on to the train. In both Europe and America this impulse of kindly consideration for others is taking the place of formal rules of morality. It can find excuses for crime, which are mitigating the severity of the penal laws. It may soften the struggle between

capital and labour, and heal the social wounds that are caused by their conflict. In countries where this kindly feeling prevails, strikes leave no great aftermath of bitterness: masters and men can shake hands when their disputes are settled, and bear no malice for the sternness of the fight.

Its effect may be seen in the desire to spread culture amongst the masses. This is a distinctive note of modern times. In ancient days culture was the monopoly of the wealthy: the poor were left in unenlightened ignorance, and the advance of civilization can be measured by nothing more significantly than by the increasing proportion of the population who enjoy its amenities. In England, for many centuries past, religious and charitable foundations have afforded free education to some children of the poor: during the last forty years the State has undertaken to extend this privilege to all of them. The fruits, it must be confessed, hardly satisfy our hopes. So dispassionate an observer as Mr. Charles Booth writes of the "palpable failure to secure the results anticipated," and recently several experts in education have publicly criticized in a tone of keen disappointment the effect of our schools in raising popular intelligence. It is, nevertheless, impossible to deny that their influence is plainly to be discerned in the dress, manners and ideals of the new generation. Intellectually the harvest may fall short of anticipation; but this may be due to imperfections of method. Education is still under the influence of mediæval authorities who believed that it was concerned with little more than the acquisition of knowledge, and did not perceive that it should be really the introduction to a life of self-improvement. The sons of the richer classes still spend much of their

youth in learning Latin and Greek, although it is certain that few of them will pursue in after life the study of languages, which are not more flexible or expressive than French and German, and are of no practical usefulness to men of affairs. So also, in the schooling of the masses, too much stress has been laid upon the memorizing of knowledge and too little upon the training of the mental faculties. It is necessary to memorize: an abundance of word-symbols is needed for expression. But man has risen above the brutes by his¹ discernment of properties, by the exercise of his will, and by the possession of useful habits, and if education were directed more fully to the strengthening of these impulses, it might have greater effect in raising the level of character and intelligence. Habits, it should be explained, include habits of mind—that is to say beliefs and ideas: these affect very powerfully the drift of society, and an agnostic philosopher may very well believe that it would be an evil day for England were religious instruction excluded from the influences which shape the minds of the young.

It is tempting to dilate upon the contrast between riches and poverty as an evil feature of modern times; it is indeed amazing that members of the same social organism should, some, have more than they can waste in the most extravagant luxury, and others, less than they require for the bare necessities of life. But this is as ancient as human aggressiveness, and indeed present day conditions are infinitely to be preferred to those of classical times when half the population was bound in slavery. Speaking

¹ The practising of volition is a leading feature of the Montessori system of education. Children select their own tasks, and accordingly guide their studies by choice, not by imitation.

generally, poverty is the outcome of poverty—the result of a lack of advantages in possessions, birth or character which may enable a man to bargain advantageously with other men. His helplessness is woefully increased should he be constitutionally idle, should he be lacking, that is to say, in the impulse to industry, or should he be oppressed by the tyranny of other impulses, such as the passion for drink or for gambling, which fatally affect the impulse to industry. The misery of helplessness reaches its climax in unemployment: this (as will be seen in the following chapter) may plausibly be ascribed to a slacking, or interruption, in the current of exchange—of the changing of goods for goods or goods for services—which, like a stream of electricity, turns the wheels of modern economic life. Such remedies as may be found for it must have the effect of stimulating this current. Poverty that is deepened by defects of impulse demands remedies of greater complexity.

The enquiries of Booth and Rowntree have shown that about one per cent. of the population is composed of wastrels—persons to whom work is constitutionally repugnant. This is perhaps, not a large proportion of infructuous buds on the tree of life, and these degenerates, it may be remarked, are born in all classes of society. How many sons of the rich might we not find idling through their summers in the London parks were they not maintained by the charity of their relations! Men of this disposition will only work under strict compulsion: so they may acquire habits of industry, but these will rarely become so strong as to survive in conditions of freedom. Far more numerous are those who lack the comforts and decencies of life because their impulse to industry is clogged by the passions for drink or gambling.

These may be reckoned, it appears, at something more than a quarter of the town population. Education may sober them by offering a wider range of interests: much may also be done by efforts of will—artificially stimulated, it may be, by the taking of pledges. So great is the evil that the richer classes may not unreasonably be asked to deny themselves for the benefit of the community, and to consent to the absolute prohibition of the sale of intoxicants. But men drink or gamble to satisfy the inherent passion for change or variety of mood, and the most effective method of bridling this propensity is to offer them means of excitement which are less expensive and less degrading. From this point of view we may contemplate with satisfaction the growing popularity of football matches, variety entertainments and cinematograph shows.

More numerous again are those whose circumstances must be described as poor, but suffice to provide them with sufficient subsistence, and with some margin for the amenities of civilization. They cannot afford domestic servants: but they live in decent quarters and have some money to spare for simple luxuries. These are the conditions of about half our population. It is easy to be too gloomy in commiserating their lot. Happiness results from the satisfaction of impulses: lacking strong impulses one could not be happy: with impulses unsatisfied one must be miserable. But the impulse of ambition, for instance, may be satisfied by small degrees of promotion: moods may be changed with no large expenditure: children play in the gutter as happily as in the nursery. And the working man who takes a pride in his work satisfies his provident impulses quite as completely as the merchant or stockbroker who

deals in thousands of pounds. The impulses of love may be satisfied by marriage—more often, it may well be, amongst the poor than amongst the rich. Æsthetic impulses may be gratified by a street organ : and if they are developed more abundantly by the rich, the poor have, as compensation, ampler up-wellings of the ethical aspirations that are manifested by the self-denial of wives for their families and the astonishing generosity of the working man. Poverty may be unacquainted with the pleasures that are derived from luxurious sensation—may not be tickled by the taste of truffles and champagne. But happiness is more desirable than pleasure. And the poor are, at all events, untroubled by the pangs which are suffered by respectability in maintaining appearances before the world. One may, then, easily be too severe in condemning modern society. Pessimistic criticism is very attractive : indirectly it flatters one's own ideals. It is probable, indeed, that the strictures of moralists and divines have overrated considerably the extravagances and miseries of the past ; and in future centuries a student of our times may be seriously misled by much that he may come across in the accounts that we are giving of ourselves in current literature.¹

Human society has, then, developed into its present complexity by the progressive adoption and abandonment of various ideals, or habits of mind. Submissiveness to a patriarch or a tyrant has given way before notions of deference to the majority, of liberty and equality. The idea of

¹ Is not there too much shadow in this opinion of Mr. Frederic Harrison's? "Our present type of society is, in many respects, one of the most horrible that has ever existed in the world's history—boundless luxury and self-indulgence at one end of the scale, and at the other a condition of life as cruel as that of a Roman slave, and more degraded than that of a South Sea Islander."

blood-brotherhood has widened into that of civic relationship. Traditional custom has been shattered by the expansion of industrial enterprise. How, it may be asked, have these transformations of feeling come about? Partly, it would appear, through the growing influence of self-consciousness. But in greater measure through the imitation of reformers, who have introduced new standards of conduct, and habits of mind, which, by reinforcing the influence of particular impulses, have profoundly modified man's valuations of life. By the exercise of deference and kindness, we subject ourselves more fully to our deferential and kindly impulses, as by the practice of warfare we have strengthened the authority of pugnacity, cruelty and self-sacrifice. Have we, then, in reforming zeal and the imitative propensity, a panacea for everything that is injurious to human society, or obstructs its development? We may not take so sanguine a view of human possibilities. The impulses, with which we are born, subsist beneath the grating which convention imposes upon them. Habit, while, so to speak, regularizing their discharges, leaves their essential strength unchanged. We see that individual differs from individual, and race from race, under similar conditions of culture. An Englishman brought up from infancy amongst savages would no doubt exhibit many fundamental traits of Anglo-Saxon character: but we can scarcely believe that he would be impelled or restrained by any of the ideas which differentiate the English from their barbarian forefathers.

CHAPTER XV

MODERN ECONOMICS

WEALTH is a means of procuring the satisfaction of impulses; and it may be defined as potential satisfactions that are embodied in a material form, and are therefore capable of being transferred from hand to hand, and of being pledged as security for a loan. Immense is the importance of this last quality. For our economic system is based upon credit—that is to say, upon the anticipation of future receipts. The manufacturer pays his workmen because he expects to sell the things that they make: his capital may be provided by borrowing upon the security of his buildings, machinery and stock of unsold goods: the merchant raises money wherewith to continue his business by hypothecating his consignments before they are delivered. Money itself may, indeed, be considered as a form of credit that is insured against failure by its intrinsic value. A sovereign is of use to us because it represents a sovereign's worth of future satisfactions. It is true that money may be borrowed upon security that is not material: a tradesman may borrow upon the goodwill of his business, an artist may obtain credit upon the money value of his talents. But security is imperfect unless it is represented by a thing that can be transferred from hand to hand before it is finally appropriated. The pawnbroker is the

poor man's friend : from no one else can he raise money.

Wealth is produced by the action of our provident impulses—those of foresight, industry and a desire for possessions and comfort. But these impulses are, as a rule, not sufficiently strong of themselves to induce us to labour persistently. They need to be reinforced by habits, and by other impulses which can only be satisfied by the products of industry—that is to say, by wealth. The desire for food or for luxuries, ambition and the longing for social esteem, the love of children, the passion for change which may be satisfied by travel, by amusement, or by drink, our artistic tastes, may all contribute to enhance the forcefulness of our industrial impulses. The possession of industrial or provident impulses is essential ; they are the roots of our industrial activities : failing them man would remain as poverty-stricken as the brutes. Where they are weak, wealth is not produced. Indian labourers prefer their habits and their leisure to a rise in wages ; and the large amounts of coin and bullion which are annually received by India in payment for raw produce, are in great measure buried under ground. But when the industrial impulses are at their strongest, they still appear to need reinforcement before they will urge mankind to continuous exertion.

Our economic development has then progressed through the strengthening of our provident or industrial inclinations, firstly, by the acquisition of industrious habits, and secondly, by focussing upon industry the stimuli that can be derived from other propensities. Money is the lens by which our various desires are concentrated. We are told that money serves the community as a standard and measure of value, and as a medium of exchange. In truth it is something more. It

gives its possessor an *option* of acquiring whatever he pleases that is within its value and is exposed for sale. One who possesses a sovereign possesses a sovereign's worth of choice, and, so far, has the world at his disposal. Money, then, stimulates our impulses by offering them every variety of satisfaction. It gives full play to the desire for liberty, for choice, which to a greater or less degree is inherent in all men. Remuneration that is offered in kind is far less stimulating, and payment in food or in goods has passed out of usage in all progressive communities. In some parts of India a ploughman still works for thirty bushels of grain, a blanket and a pair of shoes as his yearly wages. There is nothing before him to relieve the monotony of life, not even the chance of beggary. It is not surprising that the payment of wages in *truck*—that is to say, in goods, not in money—has been strenuously opposed by the English working classes and has been prohibited by law. Such a system starves the enjoyment of life and the zest of industry.

If we search for a fundamental difference between the economic conditions of the present day, and those, let us say, of ancient Egypt, we may find it in the stream of money which permeates our society, passing through such a multiplicity of channels as conduct the blood to every recess of the body. It is ever-flowing: the humblest family makes its daily purchases. It passes in broad channels through the homes of the rich: the poor receive rivulets only. But there are no members of the community, except those in workhouses, asylums and prisons, who do not at least dip their fingers in the current. It is surprising that human inventiveness so long fell short of the discovery of money. The earliest known coins were struck by the Lydians some

twenty-seven centuries ago. Tokens¹ in the form of miniature hoes, axes, and other implements were in use for some time previously. But we may conclude that the monetary system that now appears essential to social life, has come into existence since the beginning of classical history.

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The life of a community which subsists by hunting, cultivation or the pasturing of cattle is borne, as it were, upon a smooth-flowing stream: when men forsook these pursuits for the manufacture of things, they threw themselves upon a whirlpool, and entrusted their lives to the circulation of its current. Manufacture can continue only if goods are sold: selling and buying must never cease. Political economy used to teach us that a demand for commodities is not a demand for labour: but if a demand for commodities did not exist, no manufacturing labour would be employed at all. Industrial prosperity depends upon the rapidity with which this current circulates, as well as upon its volume.

Its rapidity is increased by improvements in communications which lessen the time that is required for the completion of a purchase. It is also increased by the enterprise of retail dealers who by bringing goods to the doors of the customers quicken the current of selling and buying. If, from any cause, rapidity of transit is seriously diminished, the industrial population is thrown into such distress as results from the closing of a market. It is kept alive by such a stream of exchanges as is supposed to be the nature of the electric current, and its vitality suffers if the

¹ Is it not possible that the miniature, or "pygmy," flint weapons that are a puzzle to archæologists were used for this purpose?

stream is obstructed. This is one of the perils of war.

The volume of the wealth current is maintained or augmented by the action and interaction of a large number of factors. First may be mentioned the employment of credit. By credit all the available goods of a community are drawn into the market and used in purchasing.¹ A man may have money, with no desire to expend it. But he will rarely be unwilling to add to his potential satisfactions by lending or investing it at interest, and in this case he contributes to the fund that is employed in purchase—in the purchase of goods that are exposed for sale, or in the purchase of goods by an employer from his workmen that takes the form of paying them wages. Credit is based upon the transferability of wealth: but when commercial confidence runs high, goods or land may be pledged several times over, and the industrial fund of the country may enormously exceed the amount of the actual available wealth. But when security is based, not upon wealth, but upon trustfulness, its existence is precarious: if a link is broken, the chain collapses, and such a commercial panic ensues as periodically disorganizes industry and throws workmen out of employ.

Cheapness also increases the volume of production. There is always a reluctance to part with money. This is lessened if its expenditure will give a substantial return in satisfaction. And the cheaper are goods the greater is the surplus that remains, after procuring them, for the purchase of other varieties of satisfaction. Accordingly cheapness promotes variety of demand and stimulates the establishment of new

¹ "Purchase" is used throughout as including the payment of wages by a manufacturer to his workmen in return for the goods they create for him.

industries. Why, then, it may be asked, is there an impression that high prices are favourable to trade? High prices must necessarily restrict the number of purchases upon which a limited income can be spent. The manufacturers upon whose goods its expenditure is concentrated will no doubt be benefited. But this will be at the expense of those whose goods are no longer purchased because they are beyond the consumer's means. If a country is considered as self-contained, high prices redistribute profits and activities, but do not increase them. If, however, they are realized from foreign consumers, they may be an actual gain to the country of export, for the counterbalancing retrenchment of purchases in the importing country may affect goods which the country of export does not supply. High prices may, accordingly, stimulate certain industries at the expense of others; and, if the industries that suffer are in foreign lands, high prices may increase the total wealth of an exporting country. But they do not produce the effect of low prices in increasing the wealth of the world as a whole.

If we look back to the early stages of human society we shall find that the first step in increasing the wealth of a community was the diversion of labour from domestic employ, or feudal service, to the more productive occupation of making things. The ultimate fact upon which industrial development is based is that a cultivator's labour produces more than suffices for his support. He has rarely been permitted to retain the surplus. It has been taken from him as rent, and in days of simplicity is mainly spent in the maintenance of relatives, dependants, and retinues of servants. Manufacture is limited to primitive conveniences, and the craftsmen are commonly paid in produce.

These conditions are still typical of India, as they were of Europe in mediæval days. When landlords conceived a desire for manufactured luxuries they gratified it by reducing their personal establishments. Labour was diverted to handicrafts, and the industrial era began.

Industry stimulates industry. The making of shoes incites men to buy them, and to make other things in order to produce funds for the purchase. Each new handicraft, then, created others. This interaction is an accumulating force, and rapidly extended the field of industry.

Handicrafts gave place to machinery. By harnessing the energy of coal with himself, man augmented immensely the effectiveness of his labour. With the assistance of a machine, a few factory hands are as effective as scores of handicraftsmen. Not only was the output largely increased. Prices were lowered, and cheapness, as we have seen, has a potent effect in increasing demand. With each diminution of price the market widened: by lowering prices a factory encouraged the establishment of other factories. The economic conditions of the present day are based almost wholly upon the use of machines.

There followed the organization of factory industry, and a development of skill in management, engineering, prospecting, and in reading the market, without which production on a large scale would be impossible. A growing alertness guided invention, and secured the prompt utilization of its discoveries. And labour became more effective as, with the spread of knowledge, it became more intelligent.

Manufacture is supported by purchases, and purchases are vastly stimulated by temptation. Our eyes are everywhere assailed by advertisements, which have indeed become a feature not

only of town but of country scenery. Some of us are not moved by their importunity, may indeed resent it. But their general seductiveness may be inferred from the fact that it pays to spend so lavishly upon them. Customers are tempted by the attractive display of shop windows, by the blandishments of salesmen and even by appeals to the gambling spirit. In some measure these efforts merely divert purchasers from one firm to another. But they also draw into the vortex of trade money that might otherwise be hoarded, or spent in procuring, not things, but services.

We must remember, however, that, failing the security of property which is given by a strong and trustworthy government, none of these forces could have come into play. From an economic standpoint one may easily comprehend why the community is disposed to judge offences against property more severely than brutal assaults. They strike at the foundations of the industrial fabric. We cannot, then, deny a high industrial value to the State employées, whose business it is to protect the community and to preserve peace. So also with many other kinds of professional service, and particularly with the efforts of medical and sanitary experts. Health is a necessary condition for effective labour.

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So far, we have been considering a nation's production of wealth by efforts which are confined within the limits of its own territory. These efforts are, however, gradually yielding in importance to commercial and financial transactions with other nations, by which the wealth-streams of particular countries are becoming merged into a wealth-stream for the world as a whole. The advantages that result are in some cases one-

sided, one country gaining at the expense of another. In other cases the advantages are mutual and increase the total resources of the world. Generally, international trade has this result. The merchants who conduct it make their profits by appropriating wealth from whichever country is most in need of the exchange. But, profits apart, the effect of both exporting and importing is to increase the effectiveness of industry. The export trade brings new markets within reach and expands the demand: the import trade assists manufacture by introducing supplies of raw material, and lowers prices by bringing goods and food upon the market more cheaply than they could be produced at home. Since a fall in prices stimulates production and increases wealth, proposals to check importation by the imposition of a protective tariff must justify themselves by their effect either in enabling the country to enrich itself at the expense of others, or in promoting developments which have a social or political as opposed to an economic effect. A protective tariff which raises prices, may check the stream of foreign investment by increasing the profits of some home factories; and it may be that, by inducing capitalists to invest at home, the wealth-stream would be swelled more abundantly than by the expenditure of the interest which foreign investments would yield. It may be desirable for social reasons to encourage manufacture as opposed to agriculture; or it may seem politic to foster agriculture at the expense of manufacture in order to secure that the country should not become entirely dependent upon others for its food supply. Or, stress may be laid upon the advantage which results from the power of retaliation in penal tariffs in compelling other nations to moderate their customs demands.

But, apart from such reasons, any measures which would raise the prices of imports should apparently be deprecated, whatever be the customs policy of other nations.

By investing money in other countries a community alienates a means of increasing its own productiveness ; but, by the interest that it exacts, it levies a tax upon the resources of the borrowing country which, if spent within its own limits, may add very greatly to its wealth. Moreover, if the loan is remitted in the form of goods, its grant will at least benefit the lending country by the single turnover of its amount. And if the borrowing country is undeveloped, and yields very liberally to the outlay of capital, not only may the lending country make larger profits than it could obtain from a home investment, but the riches of the world as a whole will be increased. By her enormous foreign investments England levies a percentage upon the produce of many countries. The Canadian farmer, the Italian *metayer* of Argentina, the Indian ryot, all render her a share of their crops.

The receipt of a loan by one country from another increases its wealth-stream, and stimulates the demand for local manufactures. If received in the form of goods it is of course a direct accession to resources. On the other hand, there is interest to be paid, which involves a transfer of resources to the lending country. But borrowed money is exceedingly profitable to lands that are undeveloped. Canada and South America owe their astonishing progress very largely to the assistance of English and American capital, and it is not surprising that they should leave nothing untried to advertise their advantages to the investing public.

A war indemnity is in effect a loan without

interest, and, whatever be urged by the advocates of peace, must augment the resources of the nation which exacts it. This is also the case with tributes and subsidies, and money which is expended by foreign travellers. The Swiss have, indeed, built up their prosperity with the money which has been attracted by the scenery of their land. The wealth which England obtained from her tropical dominions—especially from India and Jamaica—was the stepping-stone to her present riches and commanding commercial position. How many families have been founded, how many noble mansions built, with the profits of indigo, tea, and sugar! From the whole world she levies contributions by her earnings in the ocean carrying trade.

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We turn now to the distribution of wealth—to the influences which determine its appropriation by individuals, and result in the distinction between rich and poor. The simplest and most ancient of these influences is force. The criminal classes still employ it. The levy of taxes by the State, and, in many cases, the exaction of rent by a landlord are ultimately secured by force. A community settled upon land which it was the first to colonize, would hardly appreciate the meaning of rent: each cultivator would expect to keep the whole of his produce. But, when conquered by invaders, they would be forcibly taught that the profits of agriculture leave something for a landlord to exact; and that, indeed, under the rule of force, the cultivator may confidently expect to retain only so much of the produce as will keep him from starvation. Rents are now commonly regulated by competition, by custom, by kindness, or by law, and their just

amount is calculated by scientific formulæ. But originally they were as large as the landlord could demand without fear of rebellion or of the death of the tenant. Similar is the history of a manufacturer's profits.¹ They were originally so much of the produce of a slave's industry as were not required to keep him alive. They are now the difference between the selling value of an article and the price which is paid for it—in the form of wages—to the workmen who make it. But they no longer simply express the extorting power of an employer. They include charges for skill in superintendence, and for depreciation of material, which are part of the necessary cost of producing the output. They also include interest charges on the capital cost of buildings and machinery, and on the money advanced in purchasing raw materials and in paying wages. Those who believe in the possibility of "collective ownership" will not admit that these charges for interest are unavoidable, and will view them as appropriating, and not as producing wealth. But if, as may well be believed, the community would be unable to raise the necessary capital without borrowing at interest, the capitalist may claim that his charges for interest—at the market rate—are a necessary condition for the effectiveness of labour, and are part and parcel of the cost of production. No such claim can, however, be made on behalf of profits that are obtained by means of a ring, a trust, or a monopoly. These simply represent wealth that is appropriated from other members of the community by the possession of a peculiar artificial advantage.

Trade enriches the world by circulating the produce of industry. But it retains a very large

¹ Gross profits.

share of the produce for itself—far more than it could claim as the cost of its services. In some cases its profits may actually double the price of an article. There is nothing more remarkable in our modern economic conditions than the extraordinarily large number of retail shops. Their multiplicity may be of assistance in inducing the public to spend its money. But they are maintained very largely by the habits of their customers, who, in defiance of the axioms of political economy, support certain shops, not because they expect better goods or lower prices than elsewhere, but because they have contracted a habit of dealing with them. When so many are selling, individual profits cannot exceed a low average: there is keen competition: this is apt to deaden the appreciation of high morality; and trade may degenerate into a method of “getting hold of other people’s money without getting taken up by the police.”

The rendering of *services*—of satisfactions, that is to say, which do not take a material form—are the most obvious of the influences that enable some individuals to appropriate money from others. These are not included in a nation’s wealth; but they comprise nearly all of its higher activities—the utilities which we derive from letters, science and art, from religious and secular instruction, from medical assistance—everything, in short, which raises life above sensuous enjoyment or a struggle for gain. Lawyers and politicians may complicate affairs which might be simply transacted, may earn money and credit by appealing to impulses that are not amongst the proudest attributes of humanity; but it is hardly conceivable that a civilized community could make shift without them. We must be rapidly carried in railways and tramcars to maintain the

stress of modern conditions. Amusements satisfy an impulse for change which gives joy to life and lightens the weight of advancing years. We owe to domestic servants the comfort and orderliness of our houses.

No shiftings of wealth that are confined to the members of a community can lessen the community's total wealth, however disadvantageous they may be from the moral or philanthropic standpoint. The extravagance of the rich in the end provides honest folk with food and lodging, however unworthy be the hands to which the money is first scattered. Expenditure upon armaments is frequently deplored as a waste of national resources ; but it passes on the wealth current and provides subsistence for thousands of men as effectively as expenditure upon school-houses or motor-cars. The enormous cost of the Panama Canal is no net loss to the United States : the outlay has in the main passed through American hands, and is, so far, merely a transfer of wealth from the body of tax-payers to some of its members.

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The wealth-stream flows past everyone's door. Some receive profuse supplies from it : others may scarcely enjoy a few drops. Industry may help itself from the stream, but only by pannikins : the plodding workman, the careful seamstress, seldom earn more than a bare subsistence. If we desire a more liberal measure we must obtain it by influencing others—by inducing them, so to speak, to lower a bucket and draw for us—if we, in return, will satisfy an impulse which they cannot conveniently satisfy themselves. So we draw for shop-keepers in return for comforts and

luxuries, for doctors in fear of ill-health, for railway companies and theatres to gain change and variety, for charities to satisfy the kindness of our hearts. To satisfy feelings of cruelty we may patronize very barbarous entertainments. What will men not pay for titles, for steps on the social ladder which gratify their ambition or vanity ! There are baser instincts which may be worked upon by those who can exploit the depths of human nature. So wealth is appropriated, and men grow rich, by successful appeals to the desires of others. But it does not follow that society is corrupt. Excepting the passion for cruelty, there is no class of impulses which are harmful in themselves : any injury which they may cause to individuals, or to society, proceeds from the means that are adopted for their satisfaction. We may reasonably sympathize with a desire for variety whilst strongly deprecating its satisfaction by drink.

Riches are, then, gained by the possession of some special advantage which enables us to satisfy the impulses of others. Industry itself is no such advantage : it is possessed by thousands of workmen who are, individually, of no particular value to their employer, and are thus unable to demand from him a full share of the proceeds of their labour. In these days the greatest advantage is wealth, and a cynic may take a gloomy view of our relationships. For wealth attracts wealth, and social inequalities must tend to increase unless the process is checked by law. There are, of course, other advantages. Skill and intelligence will enable a workman to demand higher wages. Birth gives advantages : less in the present time than formerly. Talent is of service : so also are high educational qualifications, but these are obtained by the expenditure of money, and have generally been unattainable except by the rich.

Beauty may find a rich husband : strength and activity give a money value to a professional football player. The possession of land is a far-reaching advantage : it may enable a landlord to impose his own terms on his tenants and labourers by threatening them with banishment from their homes. But it generally goes with the possession of money. Riches are the all-important advantage. Through them satisfaction may be offered to almost every impulse of humanity, and money may be collected as if by magnetic attraction. The poor have one advantage of their own : they form by far the most numerous class of the community. By a strike they can obtain the advantage of a monopoly. And by their voting power they can limit the tyranny of wealth through protective labour laws.

But this despondent conclusion does not take into account all the impulses of mankind. There remain the promptings of kindness and self-restraint, which are authoritatively impressed upon us by religious teaching. These moderate the fierceness of the struggle for life amongst human beings. Their power is shown in the liberal amounts subscribed in charity. They may soften the relations between employer and employed, between landlord and tenant, uniting interests which are naturally divergent, and substituting mutual consideration for mutual distrust. The sympathy of Parliament has undoubtedly been stimulated, in some measure, by the political power of the masses. But kindly feelings have also been effective : the richer classes show little resentment when required by the law to contribute to the assistance of the poor. Society ultimately relies upon these feelings to preserve it from being torn by dissension : and amongst the habits of mind which should be pressed upon the

young none are of more importance to the community than kindness and consideration for those around them. The discipline to which boy-scouts submit themselves has no more admirable feature than the helpfulness with which they learn to meet the needs of others.

The accumulation of riches may have benefits in its train. It stimulates the aptitudes of mankind. The wealthy can afford to pay high prices for meritorious industrial or artistic work. It may be urged that genius is its own incentive: that inventiveness or art do not need to be excited by money rewards. This is true in a measure. But we cannot trust the creative spirit always to urge genius to exert itself. Judging by the anxiety of inventors to protect their ideas by patents, their originality is stimulated by hopes of gain. And artists of eminence expect liberal fees if they are to rise to the utmost height of their talents.

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Are poverty and riches essential results of our industrial civilization? Could not the State, or community, reconstruct society so as to maintain the effectiveness of industry, while directing the distribution of its fruits according to principles of equity and kindness? By labour legislation the State is successfully checking the rich from pressing to the utmost the advantages of their wealth: moreover, it is taking a practical hand in the economic life of the community, and manages to distribute letters, to carry passengers, efficiently and economically, while assuring to its employées a living wage. But the aspirations of Socialism soar far beyond this. The community, it is claimed, should itself undertake to produce wealth and to distribute it; or, at least, should imperatively regulate its distribution so

that no one should possess more than an equitable share. That is to say, wealth should be distributed without reference to the differences of character and strength that exist between the impulses of different individuals. One man requires much, another little, to make him happy : to one ambition is more than art, to another both these are less than change : one finds change in travel, another in games, a third in a novel. Under a socialistic régime these varieties of taste could not be considered in fixing the share of each individual : passions would be eliminated as contributory industrial forces, and industry would need to be its own reward. The community undoubtedly includes a large number of individuals in whom the industrial impulse is so strongly developed as to urge them to work irrespective of personal advantage. But, judging from the facts of common experience, the greater proportion will not work unless this impulse is reinforced by selfish considerations, and there are not a few who will not work except under the stress of necessity or compulsion. A hive of bees displays unselfish industry : but they are moved by directive instinct, whereas the behaviour of man is the product of a multiplicity of impulses. Can we believe that his relations with other men might be arranged so as to rest upon one of them only ? In exceptional cases such a fabric can be built up : the monastic system is based upon the ascetic impulse : the Indians of Paraguay were disciplined in the minutest details of life by their reverence for their Jesuit masters. But the construction is essentially unstable, and cannot endure unless human nature is, so to speak, emasculated. Our hopes for the future must fall short of Utopia, and we must be content with the less heroic prospects of lessening evil and increasing good.

CHAPTER XVI

MODERN POLITICS

THE vicissitudes of politics interest us so keenly because they give play to so great a variety of impulses. We admire our political leaders : were an impulse to admire or respect not innate in us, social life would have no centres around which to gravitate. We are moved by the success or failure of the party to which we have attached ourselves, because, having identified ourselves with it, we are excited by the feelings of emulation which set man to race against man, horse against horse, dog against dog. The daily changes in the political barometer gratify our passion for variety. We may be interested in the programme of undertakings to which our party commits itself, because it enlists the provident impulses that stimulate us to use our reason to ameliorate the conditions of the future : moreover, our kindly feelings may be appeased by the assurance that these undertakings will give happiness to persons or classes that have attracted our sympathy. The bitterness which is permissible in party politics affords a canalized outlet for our unkindly feelings. Finally, our self-conscious pride is soothed by the reflection that, in however moderate a degree, we can assist our party and its objects by our vote, and that we are actors, and not merely spectators, in the drama which each morning's newspaper unfolds before us.

In early days the politics of the State afforded no such variety of entertainment to its citizens. Every herd must have a leader ; and the tyranny of a chief, respected, it may be, for his age, his strength, or his ill-nature, was no doubt the primordial political institution of mankind, and endured until it was confronted by the interests of the family. With the development of the patriarchal family the leader's absolute authority was limited by the influence of the heads of families, and in many cases was subverted by a council of elders, or grandfathers, the prototype of the senates of historical times. There are not a few tribes of the present day whose government is still in this stage of evolution. It is sometimes figured as a democracy, but incorrectly, since it allows no voice in public affairs to the mass of the people, and is, in fact, the rule of age, experience and long-standing custom. But, generally, amidst the surges of war, the authority of a senate has been overwhelmed by the prestige of a general : he has seized control as dictator or king, and the form of government has reverted to the monarchical type.

The fortunes of kingship have depended upon the temperament of the people. In the Baltic races the impulse of veneration is constantly assailed by a robust desire for freedom of individual action and for change. Most other races appear to need—and will only obey—an authority that they can admire : they are impressed by the irresponsibility of absolute power, which harmonizes with their conception of the Divine ; and, since there are feelings in human nature to which cruelty may appeal, a ruler may actually gain admiration by the capricious infliction of death or torture. Accordingly, over the greater portion of the globe kingship has been

invested with very arbitrary prerogatives. So long as the ruling classes of Greece and Rome retained some drops of northern blood, the influence of the general was limited by the subdivision of his functions, and the senate could maintain itself as the directing authority of the State in every province of activity except upon the battlefield. But with the passing of time the dictator overshadowed the senate, and Rome and Constantinople alike submitted to an oriental despotism. In northern Europe, on the other hand, kings have always been pressed to defend their authority against encroachment. They have been powerfully assisted by the influence of religious feelings. A king who was deified was in theory irresistible ; and no arguments for limiting his authority could withstand a belief that he held his office by Divine right. Indeed, it was very probably the influence of religion that exalted the successful general into a hereditary king. Divinity which was instinct in the father would naturally descend to his son.

But religion has not always contented itself with the upholding of monarchy. The visioned ideas to which it appeals may affect men as strongly as the most serious or attractive of life's practical contingencies, and may be as awe-inspiring as the most absolute tyranny. When, at the fall of the Roman empire, men lost confidence in monarchy, the Church of Rome stepped into the breach, and during many centuries attracted more veneration than was accorded to the most august of sovereigns. Its influence was least impressive amongst the Scandinavian and Teutonic peoples : the ideas of their preference were practical, and it was first among them that religion, unable to maintain its autocratic pretensions, fell back to become a guard for the

king's palace. But it has been unable to defend monarchic authority against attacks that were delivered, at the outset, by the independent ambitions of the aristocratic families which were represented by the senate, and, later on, by the aspirations of the common people. It may be argued that the commanding influence of the German Emperor effectually contradicts the assumption that the Teutonic peoples have been consistently moved by a desire to limit kingly prerogatives. But the conditions of Germany are peculiar: threatened upon one flank by the spirit of revenge, and on the other by the vague overshadowings of Slav ambition, she imperatively needs a War Lord, and must subordinate her aspirations to this necessity. And by exceptional forcefulness of character a king can always revive the respectful feelings to which the institution of kingship owes its origin.

The Army and the Family, then, stand for influences by which monarchy and aristocracy have, respectively, been upraised. In Europe these influences have been in perpetual conflict, one or the other gaining strength as foreign or domestic interests became most pressing. Before the Eastern despot family authority has respectfully retreated within the circle of its own affairs, and has rarely ventured to contest with him the control of public business. We can hardly dignify with the name of "senates" the oriental councils (or *darbars*) that rather feed a prince's vanity than moderate his caprices. In the West the struggles of the political arena have been complicated by a new force: the undistinguished masses have appeared at its gates and have demanded a part in the tournament. They might respect a king; and in the placid continuity of country life loyalty might persist towards land-holding

families. But in towns, populated in great measure by those who had cut themselves adrift from home and tradition, respect for the aristocracy could hardly survive. Men to whom family connections were a matter of indifference, could not be expected to understand that distinctions of family were in themselves sufficient to support the authority of a senate. Between aristocracy and democracy a struggle commenced, in which the king assisted sometimes one side, sometimes the other, and was gradually shorn of his authority by both antagonists.

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The masses that now became a power in the State generally represented a subject people that had been conquered by the ancestors of the king and the aristocracy. In southern Europe their blood has been mainly that of a short-statured, dark complexioned race¹ of keen sensibility and high artistic talent which has been settled along the northern shores of the Mediterranean since the earliest days that the archæologist's spade has revealed to us. But in all probability they also possessed some admixture of northern blood, derived from waves of invasion which from time immemorial had flowed over them. The ruling classes which had established themselves in most parts of Greece and in Upper Italy at the commencement of classical history represented the last of these invasions. The Dorians of Sparta, and the patricians of Rome held in close subjection the helots and the plebeians; and early Roman history is in great part occupied with the struggle of the plebeians to secure social and political enfranchisement. The characteristics of the French,

¹ Known in classical times as Pelasgian in Greece, as Ligurian in Italy and the south of France, and as Iberian in Spain.

the Welsh and the Irish afford us reason for believing that these Mediterranean peoples extended up the west of Europe to the British Isles. But here the admixture of northern—or Baltic—blood was larger; indeed it appears that in England at the time of the Norman Conquest the dark complexioned inhabitants had been displaced very extensively indeed by Danes and Saxons. With us, then, the conflict between the people and the aristocracy (which has recently eventuated in the withdrawal of the veto from the House of Lords) has not been of so racial a character or so bitter as, for instance, in France. The nobles and the people have been in great measure blood relations, and the classes who were conquered have not been insulted by the physical contempt which would have denied them the right of intermarriage with the aristocracy. The enfranchisement of the masses has accordingly come about through gradual and peaceful stages. In France it was obtained by an outpouring of the hate of a rancorous helotage. The subject populations of Wales and Ireland have been unable to accomplish so drastic a revolution. But they have, nevertheless, been enfranchised, and have, naturally, turned their votes to abate the pretensions of their alien conquerors.

We must not, however, figure the advance of democracy as the spreading of a slow, resistless flood. When a people has become accustomed to subjection, they accept their chains as the bonds of habit, and will not rise to throw them off unless they are encouraged by a popular leader. They have become used to tyranny, they take no interest in State affairs, and, if gross injustice arouses them to spasmodic rioting, they are easily quieted by disciplined forces. Leaders of energy and intelligence are required, and they have very

frequently come to them from the ruling classes. The motive of these revolutionaries may have been in some cases sympathy for the oppressed. But the student of character may not unfairly conclude that it has more often been a desire for personal distinction, or the imperious longing for change which dominates some men—especially those whom the routine of industry has not broken into habit. The Roman poor were championed by members of the Roman nobility, such as the Gracchi and Catiline. We may indeed surmise that the French revolution would never have come about had revolt not been led by birth and intelligence—by the fire of Mirabeau, the vanity of Orleans, and the cultured philosophy of the Girondins. A lawyer headed the League which heartened the English working classes in their struggle for the suffrage. The natives of Ireland made their first successful move towards independence under the Anglo-Saxon leadership of Parnell. It is possible to be too cynical. In some cases reformers have been sincerely impressed with the justice of their ideas, and ready to sacrifice themselves for their principles. But they have found that argument is of no avail with the conservatism of a king or an aristocracy; and when they have not been killed, banished or imprisoned, they have been ignored. It was necessary to secure some external support, and they might find this in the numbers of the masses could these be roused into activity. For this something more was required than well-balanced reasoning: dispassionate exhortations would not draw the poorer classes in their multitudes to demonstrative meetings which could be used to coerce the authorities. They could be electrified only by appeals to their passions, and especially to their jealousy or their self-esteem; and the

harangues of a demagogue must be frothy to be convincing, however solid may be the convictions that he cherishes in the background. And, success being won by dramatic powers, not by sincerity, it is no matter for surprise that many demagogues have been simply actors, without any earnestness of purpose behind their volubility. But, whether inspired by principle or by ambition, their success has been marvellous. Authority which will not listen to argument will give way before a mob, or a string of demonstrative outrages ; and in the end kings and aristocracies have conceded to the common people a voting power which outbalances their influence, and is, in effect, transferring the government of the country from the hands of the conquerors to those of the conquered. Such a revolution would have thrown the community into a state of never-ceasing discord were it not confirmed by the impulse of deference¹ to the majority. This may offer to a democracy as strong a guarantee as may be obtained by a monarchy or aristocracy from the impulse of reverence. In many cases it has been intrinsically too weak to give this security, and republics have reverted to despotism—in fact if not in name.

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But, it will be said, this is a sketch in monochrome which inadequately pictures the struggle for freedom : the triumphs by which liberty has been won have been coloured by many phases of activity : their history is not comprised in the

¹ It is extraordinary, when one comes to think of it, that five persons should acquiesce in conduct of which they disapprove, because there are six persons who approve of it. Some peoples, those of India for instance, appear to lack this instinctive respect for number. But we may find traces of it in the earliest Germanic institutions which history reveals to us.

vision of a mob howling at the gates of a palace or senate-house. This is true if we take into account the gradual emancipation of particular classes—the securing of privileges by crafts or trades guilds, of charters by the principal residents of a town, of parliamentary assemblages of their own by the clergy, or by such of the well-to-do classes as lay just below the ranks of the aristocracy. These have been obtained by many expedients, by the granting or withholding of money, by the influence of religion, and by the use of armed force. But these communities were all of the nature of aristocracies. Their privileges were peculiar, and were maintained by a jealous conservatism. There is, indeed, little analogy between the protection of a craft, or of a class, from arbitrary interference, and the concession of manhood suffrage to the people as a whole. The one was desired for definite practical objects and was appreciated by reason of its fruits: the other fulfilled aspirations which were indefinite and emotional, representing conceptions, not of material improvement, but of human dignity. We should, then, readily understand why women who can emancipate themselves from the chains of habit are now clamorously demanding the suffrage. They share men's confident ideas of personal importance, and they conceive that, if these ideas are gratified for one sex, they may reasonably be gratified for the other sex also.

The suffrage having been won by the stimulating effect of an appeal to self-conscious vanity, the possession of a vote is of value in itself, quite apart from the political opportunities which it affords. It has, consequently, been a striking feature of democracy that the people, having secured the right to vote, can with difficulty be persuaded to exercise it. A political issue, of how-

ever great importance, if put to them in cold blood, will not move large numbers of them to record their opinions. Even in the democratic atmosphere of the United States a referendum may not elicit responses from four-fifths of the voters ; and at English elections the voting power of the constituency must be galvanized into activity by emotional appeals to other impulses than that of reasoning providence, and by the dignified conveyance of voters to the polls. The provident impulse is, in fact, an inadequate stimulus, and it is necessary to awaken other instincts. Many lie at hand in the recesses of human nature, and skill in selecting and in arousing them is the talent of the successful politician. Admiration may be enlisted by appeals to loyalty, and by such organizations as that of the Primrose League : religious prejudice is a declining force, but it may still turn elections elsewhere than in Wales and Ireland : jealousy can usually be aroused by denunciations of the rich, and the orator can always fire the sympathies of his audience by eloquence that invokes the dignity of man. But the most potent of these extraneous impulses is that of emulation. This is the mainspring of the party spirit. Men who care little for Liberal or Conservative principles are roused by the contest between blue and buff.

Party spirit is indeed the driving force of present day democracy. It was aroused on the day when first a question was decided by voting, and it has accordingly swayed the judgment of senates as well as of popular assemblies. But it is by no means peculiar to the political arena. Gibbon with his remorseless pen has described the bloody antagonisms which, aroused by a liking for one or other of two companies of chariot drivers, or for one or other of two benches of bishops, divided

Constantinople into Green and Blue, into Orthodox or Arian. These were Mediterranean fruits of the emulative impulse that in present day England gives life to games, and makes football matches so immensely attractive. Political parties generally assume that their differences represent some questions of importance: there is, indeed, a natural rivalry between those who possess and those who wish to possess; and a philosopher may distinguish Conservatives and Liberals as actuated, respectively, by devotion to habit and by the spirit of change. But party feeling needs no solid nourishment. In Latin countries the politicians who are in and who are out of office have rarely represented anything but themselves: it would distract most Americans to define the difference between Republican and Democrat: if Ireland secures Home Rule, the Unionist party will change its name but not lose its adherents.

But party feeling is not hastily to be condemned because its energizing impulses are profitless in themselves. It is of advantage to the State that the ministry in office should work in the light of jealous criticism. Periodical oscillations in the drift of policy keep alive a healthy spirit of change, afford hopeful prospects for those who are discontented, and are an invaluable safeguard against violent revolutions. It may, moreover, be held that the emulative spirit, as the driving force of a nation's development, has less harmful possibilities than the spirit of self-interest which would take its place were the voters enrolled, not in one or other of two large political parties, but amongst a number of groups, each of which represented a separate class of the community. It must, however, be admitted that for the procuring of changes in social or political conditions—as

opposed to the maintenance of a respectable regularity—the group system is the more effective of the two. The leaders of political groups move along lines that, prescribed by self-interest, are clear and definite. A group will generally be too small to dominate of itself the political situation ; but it can make terms with other groups, bargaining for mutual assistance ; and the simplicity of its purpose is of great advantage when opposed to the kaleidoscopic ambitions of a political party. So the group of Irish Nationalists has brought Home Rule almost within their grasp, the Welsh group has shaken the Established Church in Wales to its foundations, and the Labour group has forced legislation giving trades unions such privileges as are enjoyed by no other associations.

Political forecasts are very uncertain, and there are peculiarities in the English character that may divert our political evolution from the lines that have been pursued by other nations. But it seems probable that the two historical parties will gradually be disintegrated out of existence by a growing cleavage of the electorate into class groups. As the working classes advance in intelligence and lose traditional habits of mind, they will appreciate their wants with greater clearness, and become less disposed to entrust their interests to politicians who regard them merely as pieces—of more or less value—to be played in the game of party politics. Legislation will be urged frankly by considerations of personal advantage—that is to say, in the interests of the class, instead of those of the political party—and it is probable that this will infuse a bitterer note into political antagonism. We must hope for a palliative in a growing respect for public opinion, in increasing obedience to that social impulse which leads us to defer to the

majority. No strike has been able to withstand the rising waves of popular resentment. Nor does it appear too optimistic to expect that the clash of divergent interests will be softened by the broadening influence of the spirit of kindliness. If these peacemakers fail, society may be distracted by troubles for which an autocratic dictatorship may be a welcome alternative.

So far, however, in England, the interests of the group, although they may temporarily obscure those of the party, have been unable to eclipse them. The achievements of political groups generally fall very far short of expectations, and, with a revulsion of feeling, disappointed voters have disregarded the promises held out to them by their class leaders for the more exciting prospects of a party contest. This tendency is clearly to be observed in the fortunes of the British Labour party. Did the voters segregate themselves in groups according to their personal interests every democratic country would be ruled by a Labour ministry. For the working classes by their preponderating numbers hold the issues of the elections in their hands.

Their influence has, unfortunately, so far prevailed as to infuse an unpatriotic note into British politics. The national flag may not wave over our school houses to symbolize to the young the claims of their country. In extraordinary contrast the citizens of the United States, and the Canadians, lose no opportunity of displaying, and saluting, their national emblem. They are not divided by the ideas of class exclusiveness which have come down to us from mediæval days, and lead the British working man to believe that patriotism is a form of respect for the aristocracy. But suspicion of the national flag does not imply indifference to national pride; when this is

aroused the working classes forget all other considerations and will vote for the political side which voices most clearly their feelings of aggressiveness or indignation.

Generally the Liberal programme of changes—however indefinite—should naturally be more attractive to the poorer classes than the Conservative attitude of “let well alone.” But both parties represent wealth, and the privileges of wealth, and that either of them should be victorious indicates that the atmosphere of elections has, so far, been charged by party spirit, by the emulative impulse, rather than by hopes of personal benefit. One class stands apart—those who are fired by an ardent desire to improve the condition of their fellows, who view politics, not as a play, but as a purposeful effort to raise ideals and succour distress. These may give their votes to whichever party promises them assistance. But they are comparatively few in number, and their influence is very much less than their zeal.

Party government has merits of its own as a system for administering home affairs. But in the conduct of foreign affairs and in the control of dependent peoples, it suffers from a great disadvantage. A State is conciliated or obeyed according to the respect with which it is regarded. It requires, however, a mind steeped in democratic sympathies to feel respect for a government which periodically appeals to the public not to turn it out of office, and solicits the opinions of the masses upon questions of State policy. In Europe democratic sentiment is growing apace, and our Foreign Secretary's difficulties are sympathetically regarded by foreign ministers, few of them free from similar difficulties of their own. No such allowances may, however, be expected from depen-

dent nationalities: they are bound to the Imperial Government, not by democratic feelings but by respect, and if this be lost, their allegiance is lost also, unless a motive can be found for it in some other impulse. Germany possesses a stable government, and it is possible to imagine Berlin as the effective head of a large colonial empire. For London no such prospect was conceivable, and the British over-sea dominions have accordingly been entirely emancipated from control. In effect they are united to the British Isles by nothing more substantial than an alliance, warmed no doubt by sentimental and patriotic ideas, but cemented by the advantages which they derive from the investment of British capital and the protection of the British fleet. Since long time past the Irish have lost all respect for the British Parliament: its vacillations of policy, which to Englishmen appear natural, to them appear absurd, and they have turned for discipline to the Church, to despotic societies, or to autocratic leaders of their own selection. There is a serious danger that India may also lose all respect for British rule if its vision, with growing acuteness, should pierce through the ranks of the officials who have so far represented consistency of purpose in the State authority.

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Political convictions are in great measure based upon habit, and it is a matter for some surprise that a party which is once secure in office should ever be driven from it by a change of views that cuts away its majority. Educated men, when past the enthusiasms of youth, rarely shift their allegiance: conversion is hardly respectable. Indeed we take it for granted that Liberalism and Conservatism run in families, and our

curiosity is aroused if brothers differ widely in their politics. The transfer of votes which turns out a government occurs for the most part amongst the working classes, and in greatest measure, it may be suspected, amongst the least intelligent of their ranks. To these men party rivalries are of no serious interest. It pleases them to be on the winning side, and they will vote for the party which is shown by the trend of the contest to have the best chance of victory. Moreover, they are apt to be misled by an incorrect connection of happenings as cause and effect, in the light of which the party in office appears to blame for anything that disturbs the regularity of life, whether it be a rainy summer or a rise in prices. There is, further, an instinctive desire for change which gradually undermines the credit of a government with those who are not bound to it by feelings of allegiance. Accordingly, from the day on which a ministry takes office a mutinous spirit begins to show itself amongst such of its supporters as are not pledged to it by family habit or by sentimental loyalty; and these people, when a general election comes round, are ready to lay hold of any handle against it, unless their affections have been reattached by definite promises of personal advantage or by such a passionate interest as is excited by any question of national prestige. It follows then, that the complexion of the British Government is determined by the least intelligent of British citizens. No system could be worse in theory. Yet in practice it works passably well.

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It is, then, a complicated assortment of impulses which determines the voting of a parliamentary constituency. There is the respect

which men feel for their political leaders, the impulse of emulation, the desire for change, the hope of personal advantage, and, with much feebler influence, some aspiration for the public good. The balance of these forces may be entirely upset by such a passionate interest in national credit as was aroused, for instance, during the South African War. To the mind of a philosophical theorist the only one of these impulses which can worthily determine the course of government is that of provident anxiety for the public welfare. If he finds that this is of no great account amongst the mass of the voters, he may console himself with the reflection that it has generally weighed heavily with the leaders of both parties. They have often been exceedingly wrong in their views—indeed, if there be such a thing as a right decision, one of the two parties must be wrong in cases where their opinions are diametrically opposite. But they have as a rule meant well for the State, and have not permitted their private ambitions to eclipse altogether the good of the public; and this has enabled the party system to bring forth fruit out of intrinsic barrenness.

So long, however, as democracy is only a means for enlisting in politics the combativeness, jealousy, vanity or selfishness of the public, it will give us but little of the fruit which it is capable of bearing. The chief of its potential merits is that it enables the community to profit by the energy and talents of such of its members as have a provident and kindly interest in the fortunes of their fellow-citizens. So far, it enlists these capacities very imperfectly indeed. Men of this stamp are, and probably will always be, an inconsiderable proportion of the electorate, although they are increasing in numbers and in

signs of activity. Few of them can gain entry to Parliament: and there are comparatively few members of Parliament who share their knowledge and enthusiasm. Nor are their views satisfactorily represented in parliamentary discussions. One of the greatest evils of the party system is that it closes the lips of those who, while generally supporting the ministry in office, would like to criticize measures which have been drafted in the privacy of the Cabinet: they must vote for them in tongue-tied silence. The Press does not offer an adequate outlet for discussion, in as much as most newspapers are controlled by interests that are solidly committed to one party or the other. These enthusiasts can, then, only express themselves by the formation of societies with active propagandas, which, if successful, may compel the attention of the Government. The many-sidedness and activity of these private reformers may be inferred from the astonishingly large number of societies that are on foot, with optimistic programmes of the utmost diversity—from the feeding of school children to the preservation of open spaces, from the closing down of the liquor trade to the stopping of vaccination. Their aims are sometimes admirable, sometimes absurd; but their upspringing is a genuine sign of democratic vitality: they are unknown in countries where the government is democratic only in name. There is no place for them in the party system. By vigorous canvassing they may induce a Cabinet to adopt an idea. But their influence is from outside: it is rather that of an advocate than an adviser.

We may, however, assume with some reason that they may gain a more direct influence in political councils. If, as appears probable, we may read our own future in the political conditions at which the United States, untrammelled by precedent, have

already arrived, we may conclude that eventually the legislative programme of each party, or group, will be settled more or less definitely in unofficial convention, and that it will not be open to political leaders to spring upon the country measures which have been designed in the secrecy of the Cabinet. When they enter upon office the adopted programme will imperatively guide and limit their activities. Such a system would give infinitely more importance to philanthropic societies than they enjoy at present. They would have access to the preliminary conventions of groups or parties; they could urge their views at moments when politicians were concerned, not with polemic activity or destructive criticism, but with the construction of a programme that would satisfy their constituents, and might not infrequently be persuaded to add¹ a new banner to their equipment of political emblems. So assisted, enthusiastic idealists may march to triumph in alliance with interests that have no organic connection with their own.

This, it may be urged, is not a pleasing prospect: it threatens us with the eccentricities of a government by faddists. But we may condemn as a fad a most useful ideal until we appreciate the full scope of its importance. What aim can a State possess that is finer or more fruitful than to promote the healthfulness, intelligence, and morality of the coming generation? In the United States this is a dominating political cult, to which all vested interests must pay obeisance. It ordains the ruthless elimination of city slums, and the careful purification of popular entertainments. Two generations ago it would have seemed to English statesmen the vision of a sentimental dream. In these days it has its

¹ So the Labour Party has adopted the cries of "Votes for Women" and "Justice for India."

votaries, needless to say, in the British Parliament. But it is a persuasive not an imperative force, and is often excluded from the balanced considerations of practical politics.

With the increasing influence of unofficial propaganda the status of politicians must inevitably decline. They will no longer be figured as the anointed champions of the public; they will be its salaried employées. Across the Atlantic this transformation is almost completed: with us it has begun. In these circumstances the public will not expect great nicety of manners in its representatives, or be too curious as to the sincerity of their convictions, so long as they faithfully carry out its mandates. It may not be greatly scandalized if they add indirectly to their emoluments. In the Houses of Representatives at Washington and Ottawa the standard of morality is lower than in the House of Commons. We need not, however, assume that this laxity of conduct is inevitable. It is hardly to be observed in Australia and New Zealand.

But philanthropy is cold stuff to set before the electorate: at present the issues which it raises would not tempt the great majority of us to walk to the polling station. If it is to awaken any enthusiasm it must be served up with party rivalry to season it. Is it, however, of profit to the State that political issues should be dressed up in meretricious colours in order that men who feel no real interest in public affairs should be induced to take a hand in them? Our true concern is only with the electors who wish for improvement, and will take trouble to secure it, and these need no party allurements to record their votes. We need not fear that their efforts will be fruitless. The comforts and conveniences which we owe to Town and County Councils have been elaborated by energies, that, outside London, have not been

spurred by party rivalry. We refer, somewhat slightly, to the efforts of these bodies as merely concerned with local government. But there are few Acts of Parliament which affect our lives more nearly than do their multitudinous activities. Their proceedings, it will be said, need no party furbishing to attract attention because they lie so near to the people's interests. This is true. Our interest in public affairs depends upon the closeness of our concern with them. This is assuredly a good argument for the multiplication of parliaments. Issues which affect forty-five millions of people are stretched too widely to be pointed.

§

In the drama of political development the action has been sustained by a changing company of impulses, each of which, strengthened by indulgence, has become, in its turn, a habit of mind or leading idea. Reverence, paid to a king, a priesthood, or an aristocracy, is the primordial feeling which consolidates a State. It is a conservative, not a vivifying, force and tends to stereotype not only the politics but the usages and ideas of those who are affected by it. The individualistic impulse of self-interest may compete with it ; and, when reverential feelings are not naturally very strong, may gradually undermine the allegiance of the more intelligent and well-to-do classes, prompting them to struggle for the establishment of representative institutions which may secure them from the caprices of despotic authority. By appeals to self-respect, or to vanity, the masses are led to assert their individuality : so democracy is ushered on to the stage, and may hope to remain there in cases where the impulse of deference¹ to the majority is naturally so strong as

¹ This impulse may be cultivated by the young—at all events by those of Anglo-Saxon parentage. Upon this fact are based some novel departures in Reformatory organization.

to be educated into an ideal of political life. But the impulses which urged the masses to demand the privilege of voting do not effectively incite them to exercise it. Interest may be stimulated by selfishness ; but, so far, the emulative spirit, evoked by the antagonism of political parties, has been the most effective agency for bringing voters to the polls. Of recent years a new impulse has come into the drama—that of a provident desire for human benefit. As yet it has secured but a subordinate part ; but the future of civic development depends upon its success in winning a place in the foreground.

In these scenes of transformation what have been the forces which have driven a dominant impulse into retirement and brought another to the front in its place ? Are we to attribute these changes to the pressure of circumstances ? Has monarchy been subverted, for instance, by experience of the injustice of kings, or of the failure of heredity to transmit kingly qualities ? This we may hardly affirm, seeing that in many parts of the world monarchy still commands the whole-hearted allegiance of intelligent men. Circumstances, beyond a doubt, contribute to change : such are the increasing density of population, the accumulation of wealth and of knowledge, the extension of commerce, of manufacture and of travel. But their bearings must be appreciated to become effective, and, for this, certain peculiarities of disposition are needed, which are not inherent in all men. Reform is impossible unless there is a disposition towards change : freedom is withered if the glow of reverence remains undimmed : democracy cannot survive unless fostered by ingrained notions of deference to the majority : popular aspirations are nerveless unless a growing self-consciousness supports them. When these qualities are possessed by a people, and

circumstances call for their exercise, their development still awaits the words and examples of forceful leaders. If reformers can be suppressed, the impulses to which they appeal will remain undeveloped. If they are permitted liberty of action, they may conjure dormant impulses into habits of mind, or ideals, which will profoundly affect the outlook and behaviour of their followers. Thus Rousseau's doctrine of the equality of mankind found responsive echoes in the individualistic impulses, and, reinforced by convictions of injustice and suffering, it produced a new ideal which overpowered traditional notions of reverence and loyalty. In the East, where these notions are radically stronger, his creed would have been scouted as abhorrent to common sense. In France its effect was shortlived, and the people soon realized that they were unable to obey a government which they could not admire. Amongst Anglo-Saxons convictions of equality have taken deeper root, although cultivated with less logical fervour. We may conclude that the evolution of political life is conditioned, with much strictness, by racial character.

We must not, however, ignore the power of the imitative impulse. This may lead nations to copy the institutions of other nations whom they admire; but, if we look below the surface of their politics, we shall find that, unless their imitation is supported by other impulses, their government abounds with inconsistencies, and is of such imperfect stability as to be shaken by trifles.

It is to be added that the exchanging of one impulse for another as the basis of government—the substitution of one ideal for another—must be a gradual process, attended with much mental uncertainty, unrest,¹ and it may be, with such a

¹ Such as is now disturbing India, where the impulse of veneration has begun to fail as a motive for submission to British authority.

moral decline as was suffered by England during the eighteenth century, and by Europe when it was shifting its allegiance from the Church of Rome to national sovereigns. In this fact we may find some explanation of the rising and falling tides which history discloses in the fortunes of nations.

§

The history of politics is an epitome of the history of man. He is launched upon the sea of life along with all other living creatures. *Their* barks are fitted with sails and equipped with rudders, so set as to carry them undeviatingly across to the opposite coast. But man is cast adrift in a rudderless boat, without mast or sails. He painfully collects pieces of drift wood, awkwardly fashions oars for himself, and slowly progresses with uncertain course, aware that he can obtain guidance from the stars, but ignorant of the stars which can properly direct him. He learns through the perils of storms and shipwrecks some points of the heavens which should draw his attention, and boldly directs his prow towards the open sea. The hope of the Promised Land is before him. He may never arrive; but in his wanderings he passes amongst such isles of enchantment as other living creatures may not behold. He may be tempted by the Sirens, and linger with Calypso: he may fall a prisoner in the hands of the Cyclops: he may be blown past Scylla in the terror of death: he may even draw near that mysterious shore to which the spirits of his dead have been transported. But each new adventure teaches him fresh lessons in what to avoid, and strengthens his heart against future perils.

INDEX

- Action—Ideo-motor, 55, 56, 95, 114, 130.
 Instinctive, 11-13, 54, 56, 58, 63, 66, 68, 70, 94-8, 164, 230.
 Reflex, 17, 55, 65, 66.
- Acquired peculiarities, Heritableness of, 36, 37, 213-9.
- Acquisitiveness, 81, 256, 269, 294.
- Admiration, 78.
- Adornment, 84, 264, 265.
- Advertisements, 125, 299, 300.
- Æsthetic impulses, 84-6, 88, 185, 237.
- Affection, 84, 277.
- Age, Respect for, 78, 274.
- Agriculture, 210, 259-61.
- Ambition, 77.
- Anger, 77.
- Anomalies—of instinct, 89.
 in Life's functioning, 20-2, 167.
- Approbation, Desire for, 78.
- Aptitudes, 97, 98, 164, 251.
- Aristocracy—Fortunes of, 313-4, 318, 319.
 Origin of, 312.
- Art, Origin of, 84-6, 237, 243, 244.
- Baltic civilization, 269-71.
 traits, 185, 189.
- Beauty, Sense of, 84.
- Behaviour, Inconsistencies of, 3, 90-3.
- Birth-rate and culture, 248, 249.
 and environment, 212, 213, 225, 226.
- Blushes, 74.
- Brotherhood, 280.
- Causation—Conception of, 99, 100, 140, 143-6, 148, 149, 168-70, 232-6.
 Erroneous ideas of, 143-6, 168, 230, 233, 234.
- Celibacy, 7, 87, 237.
- Cell-sympathy, 130, 131.
- Change, 24-45.
 of mood, 24, 25, 41-5.
 of physical constitution, 25, 26.
 of social constitution, 26-9.
 of species, 29-41.
- Changefulness—A human impulse, 24, 25, 41-5, 186, 238-41, 325, 326.
 A vital impulse, 18, 34, 35.
 affecting culture, 211, 212.
 deadened by habit, 116-8, 201, 202, 238, 239.
 Origin of evolution, 26-9, 35, 163, 190.
- Character, Innate, 115, 179-89, 198, 202, 221-4, 246-8, 292.
 in politics, 312, 313, 314, 316, 322, 333.
 modified by environment, 198-202, 221-4.
 unmodified by culture, 115, 246-8, 251, 292.
- Charity, 83, 84, 286.
- Chastity, 86.
- Cheapness, Effect of, 297-9, 301.
- Chivalry, 188.
- Choice—by free-will, 55, 152, 155.
- Christian conversion, 183, 248.
 ideals, 7, 175, 176, 245, 288.
- Climate, Effect of, 221-3.
- Colour, Protective and attractive, 34, 35, 126, 169.
- Commerce, 267, 268, 296.
 Foreign, 300-3.
- Complexion, 219, 220.
- Comradeship, 279.
- Conception, 137, 138.
- Conscience—Origin, 146.
- Consciousness, 128-49.
 Errors resulting from, 141-6.
 Effect upon action, 130, 133, 136, 139.
 Effect upon impulses, 134, 139, 140.
 Effect upon reason, 137, 140, 164, 165.
 focussed by language, 138, 139.
 Origin, 13, 14, 58-60, 128, 131.
 Unhappiness caused by, 146-9.
- Constructiveness, 81, 255, 256, 263.
- Courage, 86, 91.
- Credit—Effect upon industry, 293, 297.
- Cruelty, 82, 83, 187, 237, 273, 286.
- Culture, 229-52.
 and character, 246-8.
 and language, 230-1.
 and imitation, 238-43, 273.
 and impulse, 236, 237, 243.
 and fertility, 248-52.
 and reason, 232-6.
 and writing, 231, 232.
 Effect of circumstances upon, 244.
- Curiosity, 77.
- Dancing, 85, 88, 237.
- Darwinism, 31-4, 38.
- Death, 19, 162.
- Deference, 78.
 to a majority, 318, 332.

- Democracy—Actualities of, 319-27.
 Its possibilities, 327-31.
 Origin, 315, 318.
- Design, Evidence of, 38, 39, 62, 75, 76, 163, 168-70.
- Despair, 81, 111.
- Determinism, 15, 16, 151-5.
- Directive instinct, 11, 12, 56-8, 66, 67, 94-7, 164, 230.
 in internal organs, 12, 56, 95, 97, 164.
 Survival in aptitudes, 97, 98.
- Domestication of animals, 83, 258, 259.
- Dramatic art—Origin, 237.
- Dreams, 105.
- Dress—Fashion in, 240.
 Origin, 84, 264, 265.
- Drunkenness, Pleasure of, 45.
- Duality of Life's impulses, 170, 173-6.
- Economics, Modern, 293-310.
- Ecstasy, 86.
- Education—Effects of, 172, 173, 287, 288.
 Form of imitation, 123, 242.
- Emotions—Arousing of, 60, 69, 70.
 Evidence of impulses, 69-71, 164.
 Expression of, 73, 74.
 pleasurable and painful, 60-2.
- Emulation, 77, 311, 320-5, 330.
- Empire for trade, 283.
- Employment, 296, 297.
- Environment, 205-28.
 and character, 206, 221-4.
 and fertility, 212, 213, 224-6.
 and habits, 206, 207-12, 223, 224, 244.
 and individuals, 206-13.
 and physical development, 190, 206, 207, 212-21, 223.
 and the race, 189, 190, 213-28.
 Change of in evolution, 22, 30.
 Effect in spreading new species, 39-40.
 Man's antagonism to, 6, 7.
 stimulates variation, 35, 37, 163, 214, 217, 218.
- Ethical impulses, 86-8, 185, 237.
- Eugenics, 252.
- Evolution—and environment, 37, 163, 190, 214, 217, 218.
 and habits, 120-3, 163, 246-8.
 and imitation, 39-41, 126, 127, 163.
 Course of, 29-41.
 Design in, 38, 39, 62, 75, 76, 168-70.
 of impulses, 58, 163, 221-4.
 proves Life's originality, 22, 23, 34
- Evolution—Result of changefulness, 26-9, 35, 163, 190.
- Experience—essential for inference, 101.
- Family, Cult of, 235.
- Family life, Origin, 276-8.
- Fashions—due to sympathy, 242, 243.
- Fear, 77.
- Feeling—An attribute of Life, 58-60.
- Fertility and culture, 248-52.
 and environment, 212, 213, 225, 226.
- Filial regression, Law of, 191.
- Fire, Domestication of, 257.
- Fetishism, 144, 172, 236.
- Fluctuations, Darwinic, 31.
- Food—Effect upon race, 214, 215, 221.
- Foresight, 80.
- Free-will—its existence, 15, 16, 150-5.
- Future, Conception of, 80.
- Gambling, Pleasure in, 44.
- Games, Pleasure in, 45.
- Generosity, 84.
- Genius, Men of, 79, 154, 172, 238, 252.
- Gratitude, 84.
- Greeks, Northern blood in, 198-200.
- Habit, 16, 104, 113-23.
 A pleasurable impulse, 116, 117.
 A repetitive influence, 16, 104, 113.
 contrasted with instinct, 119, 120, 128, 164, 165, 258.
 how acquired, 124, 125, 156.
 influenced by pleasure and pain, 62, 71, 115.
 Its effects upon behaviour, 43, 114-6, 118, 122, 123, 229, 246, 247.
 Its effects upon impulses, 70, 114, 115, 118, 119, 165-7, 171, 173, 246, 247, 292, 333.
 Its tyranny, 117-8, 239.
 Origin of instincts, 120-3, 163.
 Root of culture, 229, 246, 292.
- Habits of mind (ideals), 114, 117, 175, 288, 291, 292, 333.
- Happiness and unhappiness, 71, 72, 167.
 expressions of, 73, 74.
- Happiness and poverty, 290, 291.
- Hate, 77, 84.
- Helotage, 282.
- Heredity (acquired characters), 36, 37, 213-9.
- Honesty, 86.
- Hope, 81, 111.
- Hunger and thirst, 76.

- Hunting impulse, 76.
Hypnotism, 59-60, 131-3.
- Ideals, 117, 175, 245, 279.
Material, 271, 272.
- Ideas, New, 238, 239.
- Ideo-motor action, 55, 56, 95, 114, 130.
- Imagination, 108-11.
- Imitation, 104, 123-7.
Effect in spreading new species, 39-41, 126, 127, 163.
Effect upon impulses, 245.
in politics, 333.
Its stimuli, 125.
Stimulus to action, 68.
spreads culture, 239-46, 273, 292.
Origin, 16, 104.
Origin of habits, 124.
- Impulses—Antagonism of, 7, 90, 93, 94, 173, 174.
Anomalies of, 88, 89.
Æsthetic, 84-6, 88, 185, 237.
and Philosophy, 93, 94.
aroused by imitation, 68.
by recollections, 18, 63, 64.
by sensations, 17, 54-6, 63, 68, 69.
periodically, 68, 69.
Cruel, 82, 83, 187, 273, 286.
Effect upon culture, 236, 237, 241-4.
Ethical, 86-8, 185, 237.
in politics, 311, 320, 331-4.
Individualistic, 76, 77, 279, 282-3.
influencing reason, 140, 236, 237, 244.
Kindly, 83, 84, 285-7, 308, 309.
Origin of action, 63-6.
Origin of organs and features, 161-2, 188.
Provident, 80, 81, 88, 255, 294.
Reproductive, 79, 80, 255, 274-8.
Social, 77-9, 278-82, 318.
- Impulsive instincts, 13, 55, 65-7, 76-92.
- Individualistic impulses, 76, 77, 279, 282-3.
Effect upon society, 282-3.
- Industrial evolution—Impulses assisting, 294, 295.
History, 298-300.
- Industrial impulse—needs reinforcement, 294, 295, 310.
- Inference, 99-103, 164, 165.
in adjusting sensations, 51.
- Infertility—Racial effect, 196.
- Ingenuity, 81.
- Injustice, 148, 149.
- Insanity, 108, 147.
- Instincts, 11-13, 64-103.
- Instincts—Antagonism of, 7, 90, 93, 94, 173, 174.
Directive, 8-12, 56-8, 66, 164.
over internal organs, 56, 95.
Impulsive, 12, 13, 55, 65-7, 76-92, 164, 165.
- Intoxication, Pleasure of, 45.
- Introspection, 129, 130, 132-6, 164.
- Inventions, 139, 154, 237, 238.
- Investments, Foreign, 302.
- Jealousy, 77, 84, 273.
- Justice, 86, 148, 149.
- Kindness, 83, 84, 135, 147, 273, 285-7, 308, 309.
- Kingship, Fortunes of, 312-5.
Origin, 274, 281, 312.
- Knowledge, 111, 172.
- Language, 78, 103, 138, 139, 230, 231.
- Laughter, 44, 73.
- Liberty, Extension of, 170, 171, 272, 284, 285.
Meaning of, 284, 285.
- Life—its anomalies, 20-2.
its attributes, 9-19.
its distinction from Matter, 16, 20-3, 154, 167, 174, 175.
its energy, 9.
its imperceptibility, 8.
its purposes, 22.
- Litigation, Pleasure in, 44, 45.
- Love—Maternal, 79, 277.
Romantic, 79, 80.
Sexual, 79, 80.
- Loyalty, 239, 241, 242, 272, 281.
- Ludicrous, Pleasure of, 24, 43, 44.
- Lust, 79, 80, 187, 220.
- Machines, Effect of, 263, 264, 299.
- Magic, 144, 172, 236.
- Marriage—Age, 229, 249, 250.
checks eccentricity, 191, 192, 252.
consolidates racial traits, 193.
Origin, 262, 274-6.
- Material progress, 255-273.
- Maternal love, 79, 277.
- Matriarchate, 275, 276.
- Matter—antagonistic to Life, 16, 20-3, 154, 167, 174, 175.
- Mediterranean traits, 185-9.
- Memories—Stimuli to action, 63, 64, 67, 68.
- Memory, 104-113.
and personality, 105, 106.
by contiguity and association, 107, 108.
in sensory adjustment, 52, 53.

- Memory, Subconscious, 105-7, 110.
 Origin, 16, 52, 53.
 Mendelism, 28, 33, 34, 38, 192.
 Mercy, 84.
 Migration—Aryans into India, 197,
 202.
 Effect upon race, 194-6.
 Northern into Mediterranean, 43,
 198-202.
 Southern to North, 202, 203.
 spreads culture, 268.
 Migratory impulse, 42, 43.
 Mimicry, 41.
 Protective, 34, 35, 126, 169.
 Monarchy—Fortunes of, 312-5.
 Origin, 274, 281, 312.
 Money, 294-296.
 Monogamy, 277, 278.
 Morality, Origin, 86-8, 236, 238.
 Music, 85, 237.
 Mutations—of impulse, 58, 163, 223,
 224, 258.
 Physical, 31, 37, 58, 163, 189, 217,
 218, 221.

 Nationality, Ideas of, 171, 282.
 Natural selection, 32, 35, 169, 214.
 Nitrogen—Assimilation from air, 10,
 261.
 Connection with Life, 10, 20.

 Obedience, 78.
 Oratory, 85.

 Parliaments—Origin, 318, 319.
 Patience, 86.
 Patriarchate—Origin, 275, 276.
 Patriotism, 281, 323.
 Party spirit, 320-5.
 Perception, 51, 52.
 Periodicity—Stimulus to Action, 68,
 69, 166.
 Personality, 135, 136.
 Philanthropy, 134, 285-7, 324, 327-31.
 Playfulness, 77.
 Pleasure and pain, 60-2, 71, 72, 115,
 166, 167.
 Expressions of, 73, 74.
 form habits, 62, 72, 115.
 not original stimuli, 62, 72.
 Political evolution, 331-4.
 Politicians—Influence of, 316-8, 327,
 333.
 Status of, 330.
 Politics—Impulses affecting, 311, 320,
 326, 327, 331-4.
 Influence of deference to majority,
 318, 332.
 Influence of imitation, 333.

 Politics—Influence of leaders, 311, 316,
 317, 320, 333.
 Influence of race, 312, 313, 314,
 316, 332, 333.
 Influence of reverence, 312, 324,
 325.
 Modern, 311-24.
 Provident impulse in, 324, 327-31.
 Self-interest in, 321, 322.
 The party pendulum, 325, 326.
 Polyandry, 274.
 Polygamy, 236, 243.
 Poverty—its compensations, 291.
 its causes, 288-90, 306-8.
 its extent, 289-91.
 Private property—Origin, 261, 262,
 274.
 Properties—Discernment of, 99, 100,
 103, 137, 138.
 Practical effect of discerning, 139.
 Protective mimicry and colouring, 34,
 35, 126, 169.
 Protoplasm, 20, 161.
 Puberty, Age of, 187, 220.
 Pugnacity, 77.
 Purity, 86.

 Race, 179-204.
 Racial traits—affected by environ-
 ment, 189, 190, 206, 219-24.
 Baltic and Mediterranean, 185-9,
 226-8.
 Eastern, 188, 189.
 Illustrations of, 181, 183-9.
 Persistence of, 180-2, 190, 226-8.
 Reason, 99-103, 164.
 Assisted by consciousness, 137,
 138.
 Erroneous, 100, 141-6, 171, 172,
 230-6, 244.
 influenced by impulses, 236, 237.
 Recollections, Direct, 111.
 Symbolic, 111, 112.
 Reflex action, 17, 55, 65, 66.
 Reformers—their influence, 79, 154,
 172, 252, 284, 285, 292, 333.
 Religion—early developments, 79,
 141-6, 171, 172, 208, 233-7.
 in politics, 313, 314.
 its ideals, 174-6.
 Social effect, 281.
 Reproduction, Sexual, 21, 26-9.
 Reproductive impulses, 79, 80.
 Social effect, 274-8.
 Revengefulness, 77, 84.
 Reverence, 78, 241, 242.
 in politics, 312, 313, 324, 325, 331.
 promotes culture, 241.

- Riches—how acquired, 306-9.
 Roman Empire—Cause of fall, 201, 202.
 Romans—Northern blood, 198, 200, 201.
 Romantic love, 80, 188.
 Secretiveness, 77.
 Self-abandoning impulses, 84-6.
 Self-abandonment—A relief, 86, 148.
 Self-conceit, 77.
 Self-consciousness, 129, 132-6, 186.
 its growing influence, 171, 173, 240, 292, 333.
 Selfish impulses, 76, 77.
 Social effect, 282-3.
 Selfishness, 77, 279.
 Self-preservation, 76.
 Self-restraining impulses, 86-9.
 Senates—Origin, 312.
 Sensation, 46-62.
 and perception, 51, 52, 112.
 Instinctive reaction to, 17, 18, 54, 55.
 without organs, 49, 161, 162.
 Sensations, Fallibility of, 8, 17, 50, 168.
 of ourselves, 53.
 Senses, 47.
 Sensory impressions—Stimuli to action, 67, 68.
 Sensory organs, 48, 49.
 Service—Status of, 283.
 Sexual generation, 26-29, 192, 193.
 instincts, 79, 80, 187, 188, 197, 200, 271.
 reproduction, 26-29.
 anomalies in, 21, 28.
 selection, 32, 35, 169.
 Singing, 85.
 Slavery, 236, 243, 282.
 Social impulses, 77-79, 278-82, 318.
 focussed by loyalty, 281.
 by propinquity, 278-81.
 by religion, 281.
 Social institutions—Origin, 274-83.
 Social progress, 274-92.
 Socialism, 309, 310.
 Soul, Idea of, 142, 143.
 Species—newly arisen, 41.
 Origin of, 31-7, 163, 217.
 Spread of new, 37-41, 126, 127.
 Spontaneity, 150-5.
 in the lower animals, 158-60.
 limited to choice, 155, 156.
 Rudiments of, 14, 15, 158-60.
 Origin of, 157, 158.
 Sports, 31, 37, 58, 217, 189, 258.
 Subconsciousness, 60, 105, 129.
 Suffrage—Exercise of, 319, 320.
 Grant of, 318.
 Women's, 319.
 Suggestion, 150-5.
 Symbols, 53, 112, 138, 168.
 Sympathy, 78, 242, 243.
 Stimuli of, 279-82.
 Talent, Men of, 98, 251.
 Tears, 75.
 Telepathy, 131.
 Temptation, 92, 155, 156, 165.
 Tools, Invention of, 139, 263, 264.
 Trade, Foreign, 300-3.
 spreads culture, 267, 268.
 Origin, 243.
 Retail, 305.
 Truth, 86.
 Unemployment, 289, 296, 297.
 Unhappiness, 71, 72, 146-9.
 Unselfishness, 79.
 Utilitarianism, 94.
 Utility, in evolution, 34, 35, 75, 76, 126.
 Vanity, 77.
 Variations, in character, 58, 163, 223, 224, 258.
 Physical, 31, 37, 58, 163, 189, 217, 218-21.
 Visualization, 111, 233, 234.
 Volition, 150-60, 165.
 Choice of impulses, 155-7.
 Choice of methods, 155.
 in lower animals, 158-60.
 its rudiments, 13-15, 157-60.
 limited to choice, 155, 156.
 War—Effect upon race, 194-6.
 for trade, 283.
 Origin of kingship, 281.
 Origin of marriage and property, 262, 275.
 spreads culture, 243, 268.
 Wealth—defined, 293.
 distribution of, 303-9.
 Impulses producing, 297.
 Respect for, 272.
 spreads culture, 272.
 Wealth-stream, 296, 297, 306-9.
 Swelling of, 296-303.
 Will, 150-60.
 its reinforcement, 156, 157.
 the origin of Conscience, 146.
 Woman, Status of, 187, 188, 197, 199, 200, 220, 271, 273, 276.
 Worship—Its beginnings, 235, 236.
 Writing, 231, 232, 265-7.

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