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JOSIAH ROYCE

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AN ESTIMATE AND REVIEW

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BY

JOSIAH ROYCE

TOGETHER WITH A CHAPTER OF PERSONAL
REMINISCENCES BY JAMES COLLIER



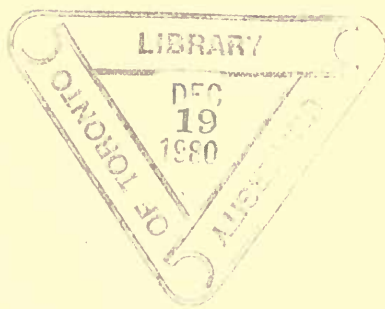
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HERBERT SPENCER AND HIS
CONTRIBUTION TO THE CON-
CEPT OF EVOLUTION

HERBERT SPENCER

AND HIS CONTRIBUTION TO THE CONCEPT OF EVOLUTION

SINCE Spencer's death, there already have appeared many reviews and estimates of his life-work. Their number is likely soon to be increased by the reading of his "Autobiography" which we now have in our hands. The new perspective in which this work enables us to see our philosopher is a sufficient justification for many attempts afresh to sum up and to characterize what he did for philosophical inquiry, and what his influence meant. Features of Spencer's activity which we have heretofore been obliged to view

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as it were from a distance, and to know only through the necessarily inadequate reports of his personal friends and disciples, are now brought near to us, and are exhibited in the decidedly clear light of his own deliberate and wholesomely straightforward confession. What, then, is the consequence of reconsidering the ideals and the methods of Spencer's philosophy in the light of his autobiography? To this question the following paper is an attempted, and admittedly partial, contribution.

Spencer's life-work is a part of a very large historical movement. For the sake, therefore, of giving the whole discussion its due setting, I shall begin with a few comments upon the general history and meaning of the concept of Evolution. I shall then review what the "Autobiography" tells us about the origin and significance of Spencer's own view of Evolution. Thirdly, I

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shall attempt a sketch of this view itself in its finished form. Fourthly, I shall close with some critical observations upon the significance of Spencer's work as a thinker.

I

SOME ASPECTS OF THE HISTORY OF THE CONCEPT OF EVOLUTION

THE names, Theory of Evolution, Philosophy of Evolution, Darwinism, and, less frequently, Spencerianism, have now entered into general literature as denoting (in the minds of various people who use them) a decidedly variable collection of doctrines, all of which have to do with the growth, or, in general, with the natural origin of things. The doctrines in question either have actually originated during the nineteenth century, or else have been restored to a former prominence in the course of that period. If, as is very frequently the case, a biologist uses any of the terms in question, he is

likely to confine their meaning, in the special discussion in which he chances to be engaged, to doctrines that have directly, and perhaps exclusively, to do with the origin of various animals or plants from earlier living forms, through a gradual and natural transformation. If a sociologist or historian employs such a term, he may give it a special reference to the doctrine of the animal descent of man, or he may merely be referring to theories regarding the origin or growth of languages, institutions, or civilizations. If a philosopher or theologian speaks of a theory of evolution, he may, on the contrary, include doctrines which refer to the entire process of the knowable universe, or at least to some aspect of that entire process. In Spencer's own usage the term "Evolution" was a name for *one* of *two* processes which together, according to him, comprise the "whole range of

natural" events, so far as these can become known to us. These processes are for Spencer Evolution and Dissolution.

Since, by a doctrine of evolution, one who uses that word may thus refer to very inclusive and, on the other hand, to decidedly special theories, there is a good deal of confusion regarding what is meant by an "evolutionist." An evolutionist, in the minds of some people, means simply a man who leaves God out of account in trying to explain the origin of things, substituting natural agencies for creative acts. In the usage of others, stress is laid upon the notion that the "law of evolution" is supposed somehow to guarantee the triumph, in the long run, of whatever makes for "progress," so that an evolutionist shall be one who believes that Nature tends towards the constantly increasing perfection of the world, or at least of man. For still others, amongst whom are not

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a few liberal theologians, an evolutionist may be a theist, who holds that gradual processes of evolution constitute God's method of creation. A more technically limited usage defines an evolutionist as one who systematically uses the history of things as a means for explaining, or estimating, their nature and value. In this sense an evolutionist is one who, for instance, if he is a philologist, attempts to throw light on the grammar or on the etymology of a language by means of a comparative study of the evolution of the group of languages to which it belongs; or who, if he is a moralist, uses a theory of the origin of conscience to explain and to define the authority of conscience. And, finally, the term evolutionist may be limited in its application, as before indicated, so as to refer to one who holds opinions regarding the evolution of some single class of natural objects,



such as stellar and solar systems, or animals, or social institutions.

Thus it becomes frequently uncertain what is implied by any particular usage of the term evolutionist; and the popular mind is frequently confused by the mistakes made. Nevertheless, it is true that the various tendencies to which the name is applied actually have a good deal in common. And one reason why it is hard to agree upon any terminology whereby the various sorts of opinion in question can be kept apart lies in the fact that the tendency to believe that things in general have been subject to some sort of evolution is one of the oldest of human tendencies. The origin of the philosophical doctrine of evolution is lost in a remote antiquity. In some sense, such as is still frequently attached to the word, the early Greek philosophers of Nature were all of them evolutionists. The

denial of evolution, or the definite subordination of the processes of growth to some other type of supposed realities, is, in philosophy, rather the later result of certain theoretical or theological considerations than the earlier prejudice of the philosophers. The first philosophical attempts to explain things take naturally the form of evolutionary speculations. In giving a very new definiteness and a great wealth of novel detail to such speculations, the philosophy of the nineteenth century simply carried to a higher stage tendencies which had resulted from the most elementary forms of the scientific interest in the universe. As this view of the historical place of the concept of evolution in the history of human thought is popularly somewhat neglected, we must dwell upon the matter for a moment.

Man's speculations as to the origin of

things take their earliest known form in those "creation-stories" which are found in so many primitive religions. The "creation-stories" are themselves often, in part, mythical accounts, not only of various creative and inventive feats of deities and demi-gods, but also of quasi-evolutionary processes,—that is, of processes conceived after the analogy of known natural processes of generation and growth. A creation-story is usually also a genealogy. Unexpected growths, and more or less magical, that is, in the primitive sense, physical processes, aid or thwart the deeds of creators; and only upon decidedly higher levels of religious thought do there appear gods powerful enough to create some whole order of things by their own directly exerted fiat. Even they may be thwarted here and there by the rebellion of their creatures, or by the devices of rival gods; so that

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it is hard to devise a theology which shall reduce everything to the result of one creative will. Something that has a nature of its own usually stands over against the mythical creator, as the material which he "fashions," as the chance which limits him, or as the enemy who uses more or less magical devices to baffle him.

Even primitive mythology thus prepares the way for an evolutionary fashion of thinking in which orderly processes take the place of fiats. Such a fashion of thought gets free as soon as philosophy fairly begins. Hindoo thought contains a good deal of evolutionary speculation. But Greek thought, in the pre-Socratic period, begins the very process of which our latest evolutionary thinking is the legitimate outcome,—an outcome determined, indeed, by a vast increase of a knowledge of nature, but impossible



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without the persistent use of certain leading ideas which the Greeks already possessed, and which we still employ in a way by no means wholly unlike their own. We have no place here for any account of Greek opinion in the first period of ancient philosophy; but we may lay stress upon two or three leading ideas which belonged to the pre-Socratic age, and which have been potent even in the latest evolutionary speculation.

The first is the idea that Nature is a region where mutually opposed processes, in the long run, balance each other, producing as their combined result a vast circuit or cycle of changes, whereof all special processes of growth and decay are incidents. This leading idea (since often represented in popular thought, side by side with ideas that have resulted from later and higher grades of human knowledge) is

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obviously suggested by a comparatively crude induction; which the early Greek thinkers soon rather hastily universalized, so as to apply it to all things. Night follows day, and day night; the seasons alternate; the changes of the weather, the periodic sequences of periods of drought and of rain, the ebb and flow of prosperity, suggest what our modern moralizing or weather-wise countryman still summarizes by various proverbs about the compensations of Nature, such as: "It is a long lane that has no turn," or, "What goes up must come down." In brief, Nature alternates between opposite tendencies. The early Greek cosmogonist generalizes from such processes. They indicate how the whole of Nature has been formed and will pass away, — doubtless to be renewed again in distant ages. From the "Boundless" of Anaximander, certain "opposites" dif-

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ferentiate; these, combining and recombining, lead to the complex world that now we see. But all these things will pass back again into the Boundless, "paying the penalty of the injustice" of their separate existence. "The way up" and "the way down" are the two opposed roads that the fire-stuff of Heraklitos follows, as it takes on the transient form now of this, now of that thing. It is governed — this living fire-stuff — by "measures." Nothing, therefore, is really gained or lost when new things arise, or when former things vanish. Something, vaguely conceived as "justly" invariant, persists, not as a fixed thing, but as a "measure," all through the process of natural change. It is as when one ware is "exchanged" for another; for so is the fire-stuff "exchanged" for all things, and they in turn for it. Fixed law governs the whole process of this evolutionary ex-

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change, whereby everything is generated, and in its turn is dissolved. There is no special creation about the process. It is an evolution. Later cosmogonists give us other accounts of the moving principle that determines the evolution or the dissolution of things; but the general notion that a vast rhythm of growth and decay, or of "mingling" and "sundering," of "thickening" and "thinning," or of some such opposed processes, determines the evolution of things, as well as their passing away, and the equally prominent notion that this rhythm is subject to regular law of some sort, these soon become prominent ideas of early Greek physical speculation.

The second leading idea here in question is, that the evolution of mind, that is, of the souls of men and of animals, is an incident of this general process, and is governed by whatever laws

determine the evolutionary process viewed as a whole. The early Greek physicist is unquestionably under the influence of primitive animism to such an extent that he conceives Nature as in some sense alive through and through. But, unlike the savage, he does not look to gods, or to spirits, or to other capriciously interfering wills to explain the origin of anything in the natural world. Nature is a realm where a power, or where perhaps (as in case of the doctrine of Empedokles) two opposed powers, shall determine in a regular way, and in accordance with pervasive law, the whole process of evolution. This determining power (or possibly pair of powers) is at once a material power, and also more or less alive. It is "divine," "wise," "intelligent," or something of the sort. But it is also uniform, impersonal, and inseparable from its own expression in

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the course of the physical world. It is distinctly "Nature," and not any god or demon ruling over Nature from without, or interfering with Nature. It takes form equally in our bodies and in our soul-life. All Nature is thus an evolution, or a dissolution, of the embodiments of this power. And our souls arise in a natural way in the course of this universal process.

A third leading idea, due to the fact that Greek philosophy grew up, so to speak, upon the seashore, is that the origin of life from the sea, or from "slime," or from some close connection between the processes which connect land, sea, and air, must be viewed as a central fact of importance for the comprehension of this whole evolutionary story. This idea of the origin of the organic from the inorganic appears in different degrees of prominence in different philosophies, and is of a some-

what secondary importance. But it survives in subsequent speculation. Nor was it a mere guess. It was due to a genuine, even if very crude, observation of Nature.

In later Greek philosophy, the conceptions of evolution and dissolution, while retaining a significant place in the greater systems of ancient thought, became somewhat subordinate, and sometimes obscured, by the predominance of other speculative interests. One notion which tended, by comparison, to render both evolution and dissolution less important for a philosopher's survey of the universe, was a leading philosophical idea very different from the "special creation" which the nineteenth-century evolutionist generally regards as his principal enemy. This was not the idea of any lawlessness or capriciousness of things, or of the prevalence of any miraculous inter-

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ference with the course of Nature, but rather the idea of the Eternity, and so, very frequently, of the temporal permanence, not only of the universe, but of all the greater distinctions *within* the universe, — an idea which, in the form of the doctrine of the “permanence of species,” did indeed directly oppose itself, in the last century, to Darwinism. This special idea of the permanence of species had then long since been united, by Christian theology, with the conception of a special creation, whereby all the permanent species had been initiated. But, in its more articulate forms, the idea of the permanence of the specific forms or “natures” of things came into later philosophy not at all as a corollary of the idea of a “special creation,” but rather through the influence of Plato and Aristotle. And so this leading idea of later Greek philosophy was a part

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only of the general conception that the world, together with all of its most rationally significant features, is eternal. Plato's world contained a realm of flux, which, so far as it was flux, was evil and untrue, and a realm of eternal ideas, which were both true and good, and which were accordingly above all change. Aristotle did indeed lay great stress upon the evolution everywhere present in the sublunary region of "genesis and corruption." But in this region it was each individual thing which grows and then passes away. The "forms" which are responsible for the evolution of individuals are as eternal as the Platonic ideas. They therefore do not evolve. Plotinus conceived an universe which might indeed be called, in one sense, an "emanation" from its eternal first principle. But this emanation is not a temporal process. It has always taken place, in a

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series of descending grades of perfection, which temporally appear side by side. Only individual things, and souls, go through processes of growth or of progress, of decay or of falling away from perfection. In the universe, viewed as a whole, all the main distinctions are everlasting.

This conception of the *eternity of the forms of things* is, historically considered, by far the most significant opponent that the philosophical doctrine of evolution ever has had or ever can have. It is primarily the expression, not of primitive superstition, nor yet of a theistic bias, but of a very highly developed conception of things which tends in itself rather towards pantheism than towards creationism. This doctrine of the eternity of the forms was suggested to the philosophical mind by *three* different leading interests:— (1) An interest in astronomy;

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(2) an interest in logic and in mathematics; (3) an interest in the permanent significance of ethical truth. As to the first of these interests (ancient in origin, obvious in Plato, and still more pronounced in Aristotle) it had led early astronomers to a long continued observation of the heavens, and to an impression that *there*, at least, all (except the fact of the motion of the various heavenly bodies) was eternally changeless, while the movements in question were themselves regularly repeated, and of invariable type. The second of these interests was rendered impressive by the whole development of early Greek arithmetic and geometry, and by the Socratic and, still more, by the Platonic and Aristotelian studies of the nature of logical truth. The third interest, prominent, but undeveloped, in Socrates, reached a classic perfection of expression in Plato, and has ever

since deeply influenced the course of human thought. It was one form of the concern in what Emerson has called "the sovereignty of ethics."

The result of these three interests was that the evolutionary aspect of the universe went into the background, *although never disappearing*, in later Greek speculation. Plato, Aristotle, Plotinus, all gave attention to the growth and to the decay of individual things, and to the laws of individual or of social progress and degeneration; but for them the universe, taken in its wholeness, could not, in view of the just-mentioned reasons, be conceived in terms of all-embracing evolutionary formulas. Both the Stoics and the Epicureans, returning in part to earlier forms of physical speculation, made the evolutionary aspect of the universe more prominent than did the systems just mentioned; but they, too, subordinated

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evolution to other aspects of the universe; for they were, above all, ethical philosophers.

Christian theology, uniting, as it did, Platonic and Aristotelian conceptions with the Theism of the prophets of Israel, and of their Jewish successors, was led to a sort of theological compromise which long remained classic. A conception of an initial special creation — a conception due to old Testament traditions — was brought into a sort of synthesis with the Hellenic doctrine of the eternity of the “natures” or “forms” of things. An “order of Nature,” occasionally interfered with by miracle, and supplemented by the unceasing creation of new human souls, consequently took the place of the older Greek philosophical conception, but still made the latter predominant in the explanation of all natural truth. The evolutionary

aspect of things was thus, indeed, by reason of the creationism of the creed, placed still farther in the background; although more or less heretical revivals of the evolutionary ideas of the foretime were present amongst the opinions that the Christian theologian from time to time had to encounter in controversy.

Modern philosophy, breaking away indeed, in the seventeenth century, from the regular course of theological tradition, was still, at the outset, under influences which gave it comparatively little opportunity to pay renewed attention to the evolutionary aspect of things. Amongst these influences to which modern philosophy was at first subject, was that of the physical sciences, as they developed from Galileo to Newton. Modern science, in this its first great movement, did not contribute to an interest in the growth of

things, nor promise to throw much new light upon origins. For just as the ancient astronomy had seemed to prove the eternity of the heavenly spheres, so the new astronomy, despite the enormous alteration in the conceptions of the physical world which it so quickly produced, gave in a new form the impression to the philosophers that the permanence of the celestial system, and in fact of the whole mechanical order of Nature, is much more important than is any process of an evolutionary sort that seems to take place in the realm of Nature, whether celestial or terrestrial. The typical seventeenth-century philosophers, despite their occasional evolutionary speculations, conceived the world as a whole, and the living organisms in particular, as complex machines. Such views, indeed, logically involved the conception that these machines, in so far as they

had a beginning at all, must have had a purely natural origin, and this logical necessity is variously recognized; but is left as a subordinate fact. The highly synthetic doctrine of Leibnitz, in its great effort to unify the organic and the mechanical aspects of Nature, found a place for a sort of evolution, whereby special organic unities could have been developed. But the Leibnitzian metaphysical conceptions remained too remote from phenomenally verifiable processes to make possible any articulate conception of organic evolution. And so, once more, during not only the seventeenth, but the early part of the eighteenth century, there was illustrated the notable truth, so much overlooked by modern evolutionists of the Spencerian type, — the truth that the great historical enemy of the evolutionary interest in philosophy has been, not “supernaturalism,” nor yet

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the doctrine of "special creation," but *the tendency to conceive the universe as an eternal, and so, temporally viewed, as an essentially permanent order*, whose laws may be studied, and whose events often include what we call growth, but whose main outlines, classifications, processes, forms, are the same yesterday, to-day, and forever; so that the story of the origins of things, even when true, is of secondary import. Astronomy, mechanical science, mathematics, logic, ethics, all furnish motives which, justly or unjustly, have led men to emphasize this view of things. Accordingly, *whenever these motives are predominant in special science and in philosophy, evolution is likely to be subordinated, overlooked, or denied*. Otherwise, however, evolutionary views are ancient and natural results of a study of Nature.

Not until towards the end of the

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eighteenth century, after a new Humanism had taken possession of the historical movement of life and of thought, did the time recur for making evolutionary concepts, of one sort or another, philosophically important. In order to narrate the tale of the rise of the evolutionary, or as one may (for the age in question) call it, the historical movement, one would have to recount the annals of the growth of Romanticism, to describe the movement of post-Kantian Idealism, and also to give an account of the revival and of the rapid progress of the organic sciences, and of historical scholarship, in the whole period between 1770 and 1830. Suffice it here to say that, in the years in question, in German, and, to some extent, in French thought, the centre of scientific and philosophical interest was shifted, at first slowly, then rapidly, from a

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primary concern for the relatively mechanical explanation of Nature, to an intense devotion to a following of the growth of things. It is true that this shifting of interest did not obscure, in the minds of those who were interested in the more exact physical sciences, the belief that whatever historically happens in the natural world is also subject to definable, necessary, and, in some sense, mechanical laws. The trains of thought which led to the modern doctrine of energy, and which express themselves in Spencer's own conception of the Persistence of Force, are of the general logical type which was predominant in the thought of the seventeenth century. But nineteenth-century thought is not, as a whole, one-sided. It declines to ignore the mechanical aspect of things for the sake of emphasizing its interest in history. Yet, as a fact, it is still more

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intensely interested in the historical aspect of things than it is in their permanent nature. It is the century of the organic and humane sciences; and to these, despite the vast advances of physics, chemistry, and mathematics, the interest of the nineteenth century subordinates the unchanging, the eternal, the unhistorical aspect of Nature. The nineteenth century fully recognizes the latter; but this aspect of reality cannot hide from its view the significance of evolution. Geology, embryology, comparative philology, the history of religion, of social institutions, of art, of politics, anthropological research, sociological generalization, — these are the great new achievements of nineteenth-century science. The general doctrine of evolution, in its recent forms, is merely the culmination and natural outgrowth of these combined and affiliated types of re-



search. The great battle for the recognition of the evolutionary aspect of things was already fought and won, in principle, before 1830. The traditional theological creationism of Christian doctrine was certain sooner or later to give way before the interests of a scientific and philosophical movement which had already added to the fabled word of Galileo: "And yet it *does* move," the further watchword, — a counter-assertion to the doctrine of a rigid and eternal mechanical order: "And yet it *does* grow." The problem of modern philosophy was thus the reconciliation of real evolution with real mechanism (since the nineteenth century believed in both), rather than the task of overcoming the theological doctrine of "special creation." The theologians, to be sure, were long unaware of the meaning of the new tendencies. The general public also had

to be instructed. A Darwin was needed to show the naturalists how to bring their own long-since pronounced evolutionary tendencies to a focus. There was and still is room for many men such as Spencer to throw light upon the synthesis which the new age needed. But the hindrance which had prevented the philosophy of the seventeenth century from reviving, in full force, early Greek evolutionism, was *not* Christian theology (which that philosophy already treated with becoming independence), but was the predominance of the mathematical and mechanical conceptions in the natural sciences of that earlier time, and the consequent absence of an interest in the growth of things. This hindrance lost its main force when the philosophy of the Romantic Period, and the revival of the historical and organic sciences after 1815, insured henceforth due at-

tention to the evidences of evolution. From that time on, the process was an inevitable one, which the various natural sciences had only to apply in their special realms, and which theologians were bound to follow, like the rest of mankind, whenever their own time was ripe. "Special creation," viewed as a positive dogma, was quite as much discredited by the spirit of the philosophy of the seventeenth century as it could be by our own. Yet evolution could not take its place in philosophy until the time had come for recognizing the historical aspect of things.

So much for a few words by way of correcting a false perspective in which the history of the idea of evolution is still popularly viewed. As a fact, crude inductions, in the infancy of science, began already to point towards the later doctrine. And the tendency to exclude the miraculous from science is

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precisely as old as is Greek philosophy itself. Nor were even the early Greek forms of the doctrine of evolution mere guesses, as some writers still like to represent. They were hasty, but, for their time, very sane, and by no means wholly unjustified, results of the early observation of Nature. They already included: (1) The notion that the evolutionary processes are differentiations, whereby variety grows out of seeming simplicity; (2) The further notion that our souls have the same sort of natural genesis that our bodies have; (3) The idea that the whole evolutionary process is due to a single law, or pair of laws, and not to special creations; (4) The conception that life originates from the inorganic (from "earth," from the sea, from "slime," etc.); and (5) The thesis that there is, in the universe at large, a rhythm of evolution and dissolution, which is also

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connected with a rhythm of "thickening" and "thinning," of "cooling" and "heating," or of other processes; that is, with a rhythm of the general type of the "integration" and "disintegration" of which we have later heard so much. And it was a keen if crude watching of natural things which made all these ideas plausible to the early Greek philosophers.

For the rest, the historical motives which so long delayed the transformation of these first crude inductions into higher scientific shapes, were by no means solely either theological or anti-scientific. They had to do with extremely important and rational motives, both of science and of philosophy, — motives which emphasized the need of a recognition of the more permanent aspects, both of Nature and of universal law. Thinkers were thus long held back from learning more

about evolution, not merely by the survival in culture of a belief in miraculous creations, but still more by the growth, in their own leading minds, of an interest in mathematics, in ethics, and in the very permanence of natural law itself. Truth of the unchanging types thus often obscured, in men's thoughts, truth of an historical nature. Thus the delay of the recognition of evolution by Science and by Philosophy, was merely an incident of an inevitable one-sidedness of human thinking; but this one-sidedness was in no wise unwholesome, and was due to an over-emphasis of motives that were, in part, both philosophic and scientific.

II

IN the England in which Herbert Spencer grew up, it was, nevertheless, the case that, in the period of his boyhood and youth, all these evolutionary tendencies were indeed remote enough from the minds of the popularly well-known thinkers. For the movement of the Romantic philosophy was hardly known in Great Britain; the Continental revival of historical scholarship had as yet but little affected the leading tendencies of English learning; the conservatism and caution of British scientific men, as well as the decidedly settled theological traditions of the country, alike served for years to keep the "development theory," so far as it was discussed at all, far in the back-

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ground. In contributing so largely to the growth of the new science of geology, British research was indeed laying a most important part of the foundations for the coming evolutionary conceptions of the latter half of the century; but the meaning of this movement in geological research was still unrecognized. It was true of Great Britain, therefore, that a public acknowledgment of the significance of evolutionary ideas was still a long way from the focus of attention; and it was also true that the influence of a conservative theology was here far more potent in discouraging independent philosophical inquiry than was the case in Germany. It is not surprising, therefore, that, when Spencer ultimately came to consciousness regarding his own doctrines (ignorant as he always remained of their historical relationships), he should henceforth

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regard the revival of evolutionary conceptions as more of a break with philosophical traditions than it actually was. He, at least, was extraordinarily innocent regarding every sort of nexus between his own philosophy and that of any remote period or foreign country. His processes were, for his consciousness, his own. Honest as the day in acknowledging every indebtedness that he ever observed, he never learned how to regard human philosophical thought itself as an evolutionary process in which his own thinking had an organic place. Hence, as soon as we come to consider his own development, we have, like himself, to break for the time with tradition, and to consider him in all the very striking independence of his character, in all the unconventionality of his training. This is what he has now enabled us to do by means of his "Autobiography."

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The incidents of this narrative will attract, no doubt, their full share of attention, and will soon become familiar to many readers. Our concern is here more with the general type of the man, and with the way in which he so gradually and reasonably grew into his subsequent doctrine. The "Autobiography" shows us a life free from most of the great crises through which men of ability and sensitiveness are usually found to have passed. No romance made his youth stormy; no religious period had to be lived out; no great worldly ambition had to be disappointed. Always of slender means, he was never abjectly poor. Forced to earn his living, he was never long bound to any uncongenial work. Eccentric, he was never despised. Independent, and prone, as he says, to indiscreet criticism of his official superiors, so long as he had such, he still

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cherished no personal grudges, and had little or no consciousness of ever actually quarrelling with anybody. Moreover, he deliberately abandoned good worldly chances which men who recognized his ability were glad to offer him. Wholly unwilling, and unable, to win favor by flattery or by social conformity, he made apparently few or no enemies, and cemented a few very lasting and loyal friendships, which, for him, were enough. Critical of all men, he was never bitter, except occasionally in controversy; and there his obvious love of truth usually made his sharpness of speech tolerable. Asking for no sympathy, he in the long run obtained a great deal of sympathy from those who valued him. With none of the arts of the party leader, he won, in time, a little band of disciples whose devotion was, as we all know, wonderful, and whose fidelity

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took, upon occasion, very definite material forms. A confirmed bachelor, he was not only fond of children, but respected their independence, and treated them so as to show his respect. Devoid of romantic sentiments, he was capable of a very noble type of friendships with congenial women. A very elaborate, and in his own way a very technical thinker, and a friend of a few of the greatest minds of his time, he also remained fond, in private life, of the company of some decidedly thoughtless people. Reserving his best for a Huxley or a George Eliot, he still was a good companion of plain folk. A propagandist, he still despised every ordinary device for winning public favor. Patient in his toil so long as the public neglected him, he declined all sorts of worldly honor when they came to recognize him. In brief, his personal and worldly relationships were of

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a very high order of moral straight forwardness.

The great misfortune of his life was his nervous invalidism. This, of which he had in early manhood some warnings, became decidedly important in 1854, at the age of thirty-four, and thenceforth, with various intermissions, and with periods of greatly increased severity, remained his companion to the end. Its origin was, as his carefully narrated family history shows, partly due to his inherited nervous constitution—a sensitive and irritable one. On the other hand, even without any disposition to lay undue stress upon the recently over-emphasized theory which regards the nervous troubles of a vast number of literary men as mainly due to the indirect effect of eye-strain, no reader of Spencer's account who is accustomed to the ordinary complaints of nervous students

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can fail to suspect that some sort of eye-defect played probably, almost unrecognized by Spencer, a very considerable part in his history of invalidism.¹ In his earlier descriptions of his symptoms, the association of his "head-sensations," and of his subsequent insomnia, with reading "even for a few minutes," and the fact that, very early

¹ The theory here in question is the one due to Dr. George M. Gould, and set forth in his "Biographic Clinics" (2 vols., Philadelphia, 1903, 1904). Dr. Gould actually analyzes the cases of fourteen men and women of literary note; but in his comments he clearly shows that he regards the type of cases in question as represented by an actually "vast" number of other sufferers of a highly intellectual sort. The objection suggested in my text is due, not to any disposition on my part to judge for myself the clinical facts of the oculist's observation, but to a confidence that, at least in their higher psychological complications, the varied troubles of highly nervous subjects of intellectual type, although no doubt very often greatly complicated by eye-strain, can seldom or never be explained as *mainly* due to *any one* irritating cause. Their deeper cause generally seems to lie in the *whole* inherited constitution of the sufferer. Spencer's case, in this respect, is less complicated than are those of several of Dr. Gould's other subjects.

in his experience of defect, he found that he could often dictate without great confusion of head when he was unable to read or to write,—these are phenomena of a sort which we nowadays regard as *prima-facie* evidence that a man had better consult his oculist before becoming any more expert in mysterious head-symptoms. Spencer himself, however, seems to have invented explanations of his troubles mainly in terms of the peculiar states which he attributed to his cerebral circulation; and in the long run he plainly decided upon his devices for self-treatment and regimen with characteristic indifference to the advice of anybody else. His accounts of the later phases of his disorder, in his middle life and old age, show the usual marks of the man expert in a round of symptoms, and in a hypochondriacal mode of attributing to them more sig-

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nificance than they probably have. If Spencer could only have viewed them in another light, they might have proved much more manageable. In any case, this nervous history is interestingly free, despite the long-continued periods of incapacity which it often included, from the so frequent tale of deeper emotional and intellectual disturbance which most nervous students have to tell. Whatever the malady was, it left Spencer's essential moral personality remarkably unscathed and his associative processes relatively intact. It gave a certain dreary formality to his literary style, but did not injure his clearness and self-control of expression. It gave him no periods of deeper despair of which he thinks it at all worth while to tell. In the beautifully frank summary and estimate of the worth of his life, in his closing "Reflections," he plainly tries to say

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both the best and the worst that, as he thinks, can fairly be said, from a personal point of view, regarding the value to himself of the life which he had passed. And his worst is indeed not very bad. The principal moral consequence of his malady which he confesses was a frequently uncontrollable but very simply expressed irritability; so that, perhaps, he occasionally swore at a mishap in fishing, or otherwise gave way to some outburst which his early training and his intellectual habits alike made, in his own eyes, foolish. Such reflexes of the moment were associated with a certain chronic captiousness in his judgments of people, art, etc., and with a good many invalid eccentricities of conduct. Amongst these were the already famous ear-coverings whereby he used to escape from wearing conversations. In all his reflections on life in the "Autobiography,"

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Spencer is also fond of emphasizing the uncontrollable character of the emotions, in a way that partly depends upon his experience as an invalid. Nevertheless, even at his worst he strikes the reader as a man of uncommon freedom from uncontrollable emotions of a deeper sort; and one who reads, even between the lines, must be convinced that Spencer was spared a very great deal of what the nervous invalid of a highly intellectual type generally suffers. In his worst seasons Spencer had a good deal of aversion to meeting company, and found the delivery of anything like a public address usually intolerable during all his later years. He has also a little to say about certain very well-known experiences of "double consciousness"; but fears, pessimism, an altered view of life, any genuine losing of touch with himself, any deeper loss of con-

trol over his associated processes, and many other of the usual complaints of the nervous student — these are all notably absent. The whole story suggests a very stubborn, and doubtless in part constitutional, and so incurable, defect, but one that, after all, was much more superficial in its significance than he himself supposed. Upon his work it further reacted by increasing his impenetrable isolation from all trains and modes of thought that did not directly interest him. Since he could read so little, why try to understand books that could not instruct him? Since his nerve-centres were so ill supplied, as he assumed, with the needed blood, why exhaust them by opening his mind to ideas that were foreign to his own? His “ear-stoppers” thus remain typical of his persistent closing of his mind to all considerations which did not either support his predetermined theories, or

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else help him occasionally to reassert himself in vigorous polemic.

Apart from his invalidism, Spencer (as appears from his letters to his father and to his friends, and in his own story) early showed traits which remain throughout, at every stage of his career, very unchanging. Free from all the ordinary emotional excesses of weaker men, free, also, from vehement personal affections, yet kindly disposed, passively benevolent, and in this sense humane, he was most of all characterized not by his sentiments, but by his ways of thinking and modes of action. An unaggressive but unconquerable stubbornness of opinion forbade him to acquire ideas by any method but his own. He inquired keenly, and into a very great variety of subjects. Yet what is usually meant by great breadth of mind is not to be asserted of him. For he could adapt

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his thoughts to no mental undertaking which he himself had not first pre-terminated; and his understanding of other people's intellectual interests was always of the slightest degree that was possible in so well-informed a man. In action he was cool and deliberate; but any plan which he had once determined upon dominated him as a sort of calm and passionless obsession. Thus when, in middle life, he had once resolved to see the eruption of Vesuvius without the aid of the guides (whose fees offended him), the dangers of hot lava had no importance for him, until he had passed through and seen what he came to see. In youth, therefore, so long as he looked to other men for employment, he changed his employers frequently, and seemed a "rolling-stone." But so soon as he made up his mind to produce his system, nothing could thenceforth distract him from

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the single great task. In his engineering years he was mechanically ingenious, and he records a considerable list of inventions. He solved mathematical problems, and discovered a geometrical theorem of some importance, but never went far in mathematics. He made natural history collections, but never became a naturalist. He performed physical experiments, but was no thorough-going physicist. He paused at the edge of political activities, but avoided public life. He records that he never puzzled over his problems. His intellectual processes, so far as his invalidism left them free, were automatic, pleasing, untroubled. At last they formed themselves into a systematic plan. The synthetic philosophy was the outcome of this plan.

Spencer records how each of the leading ideas of his system grew up in his mind. First came a love for trac-

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ing the causes of things, a love which early led him to the notion that Nature permits no miracles; that all processes of Nature are unbroken and continuous, and that all which is beyond the realm of discoverable law is altogether unknowable. Second came an assurance that, even as he himself was of an independent spirit, so *no* man's liberty ought to be hindered, so long as such a man did not interfere with his neighbor's liberty. Third came, slowly growing in his mind, the assurance that the "development theory" must account for living things, by means of a natural process, just as causation in general was needed to account for every other natural event and product. Next came the notion that, in particular, the life of the mind must be understood as a development, determined by natural causes, and connected with the development of all the

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phenomena of life. Finally came the conviction that a full and coherent theory of Nature, in which the organic and inorganic worlds were united by the working of universal laws, not only would explain, so far as that was possible, the growth of things, but also would furnish a systematic and complete foundation for his own never changing individualistic ethics, and for his sturdy, old-fashioned British liberalism. In this way, the main work of Spencer's life came to be an effort to bring into synthesis an organic theory of the unity of the evolutionary process, with a doctrine regarding the freedom and the rights of the individual which had come down to him from an age when evolution and the organic unity of things had indeed interested Englishmen but little. This particular synthesis of organic evolution with individual independence remains one of

the most paradoxical, and consequently most instructive, features of Spencer's teaching.

To go more into detail, this evolution of Spencer's own main ideas, as he carefully narrates the process, occurred somewhat as follows: In childhood, the idea of the supernatural was rapidly sent into the background of his mind by that search for causes which his father so constantly cultivated in him. Before he knew why, he had learned, quite without his father's intending this result, to disbelieve in miracles; and so in early manhood, "the current creed and its associated story of creation" came, by insensible steps, to be abandoned. In consequence, a "belief in evolution at large" was soon "latent." For, as Spencer says: "The doctrine of the universality of natural causation has for its inevitable corollary the doctrine that the Universe and all things in it

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have reached their present forms through successive stages physically necessitated." This "latent" assurance first began to become explicit when, at twenty years of age, Spencer read Lyell's "Principles of Geology." One of the chapters of Lyell was devoted to refuting Lamarck's theory of the origin of species; and this chapter, as Spencer tells us, "had the effect of giving me a decided leaning to" just such views. That is, as he tells us, Lyell's chapter brought to his consciousness, by contrast, what his own belief in the uniformity of Nature really implied as to the origin of organic forms.

Two years later, in 1842, when Spencer's political and ethical interests had led him to attempt a defence of the "tendency to carry individual freedom as far as possible," and when he consequently wrote a series of letters to the "Nonconformist" newspaper on

“The Proper Sphere of Government,” there was shown, in these letters, as he tells us, “an unhesitating belief that the phenomena of both individual life and social life conform to law.” There was also expressed the view that the functions, the instincts, and the organs of any creature, whether animal, plant, or man, are “dependent upon the position in which the creature is placed.” “Surround it,” continues Spencer in one of these letters, speaking of any such creature, “with circumstances which preclude the necessity for any one of its faculties, and that faculty will become gradually impaired. . . . Place a tribe of animals in a situation where one of their attributes is unnecessary — take away its natural exercise, — diminish its activity, and you will gradually destroy its power. Successive generations will see the faculty, or instinct, or whatever it

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may be, become gradually weaker, and an ultimate degeneracy of the race will inevitably ensue. All this is true of Man." This, then, was his early way of expressing himself. Spencer, at this time, accordingly read the lesson of such tendencies in the form of the assertion, explicitly made in these letters, that man's proper adaptation to his social functions will best occur if his relations to society are not artificially interfered with, and if he is not protected by the state from the necessity of exercising his individual powers, and of finding his own relatively "stable equilibrium" with his social world. Here, as Spencer points out, are already the germs of the whole later theory. A natural process of adaptation gradually determines the functions, and, in some greater or less measure, the structures, of living beings. This process is an instance of some all-

pervasive system of physical law. It leads, if undisturbed, to certain conditions of stable equilibrium which in themselves tend to be good for the creature directly concerned. The social lesson is that the state ought not to interfere with this natural process of the evolution of the social individual.

In rewriting the discussions thus begun for his "Social Statics," in 1850, Spencer recognized that alike in living organisms and in societies "progress" is from conditions wherein "like parts" perform "like functions," to conditions wherein "unlike parts" perform "unlike functions," — in brief, that "in these cases progress is from the uniform to the multiform." In the immediately subsequent years, the Milne-Edwards conception of "the physiological division of labor," and Von Baer's formula that the development of an organism is a change from "homogeneity of struc-

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ture to heterogeneity of structure," were both added to Spencer's range of evolutionary conceptions. The ideas thus acquired were quickly generalized so as to receive application to the philosophy of literary style, to psychological phenomena generally, and to the evolution of social institutions. As Spencer proceeded, in 1854-1855, to the completion of the first edition of his "Psychology," he was "suddenly led to the perception" that the advance "from the homogeneous to the heterogenous is a universal trait of progress, inorganic, organic, and super-organic." The "multiplication of effects," and "the instability of the homogeneous" were, by 1857, both of them in his mind as the "causes" of this "universal transformation." In 1858 he definitely opposed to the "process of evolution" that of "dissolution," and regarded the rhythm of these

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processes as a mechanical necessity to which all teleological interpretations of evolution must be subordinated. The conceptions of the transition from "the definite to the indefinite," and of the part which "integration" plays in evolution, gradually became clear to Spencer, partly during the course of the development of the "Psychology," partly after the issue of the first edition of the "First Principles." The "System of Synthetic Philosophy" was begun in 1860. The new conceptions which Darwin's "Origin of Species" furnished, in the course of the same year, were very generously welcomed and considered, but were rather too easily assimilated by Spencer to his own generalizations. And in 1864, at length, the final great step in the organization of Spencer's evolutionary theory was taken when he found "suddenly disclosed" "the truth that

integration is a primary process and differentiation a secondary process; and that thus, while the formation of a coherent aggregate is the universal trait of Evolution, the increase of heterogeneity, necessarily subsequent, is but an almost universal trait; the one being unconditional and the other conditional." What was still further added, in 1867, related rather to a matter of detail.

One who reviews this process in its relation to the general history of the conception of evolution in recent times is afresh impressed with the often observed fact that the centre of Spencer's philosophical interests always remained somewhat remote from the matters which mainly engaged either the popular or the scientific attention during the years when the evolutionary controversy was warmest. The popular readers of Darwin and of other evolu-

tionists were usually most concerned with the questions: "Has there been any transformation of species at all?" "Is man descended from the lower animals?" "Is the human mind, or, again, conscience, or is religion, a purely natural product of evolution?" The scientific men who took part in the Darwinian controversy were also often interested in more broadly speculative questions. But their own technical tasks led them to lay more emphasis, during the years since 1860, upon such questions as: "Has Darwin's (or any other) theory brought the origin or the transformation of species definitely within the range of legitimate scientific inquiry?" "Is Darwin's account, or (in later stages of the discussion) is some rival account of the factors to which the origin of species is due, probably a correct or an adequate one?" "Do the new

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theories aid us in formulating definite hypotheses that help us in other branches of special inquiry than those to which they have so far been applied?" "What do we know about the ancestry of man?"

Now, Spencer's philosophical interests had, as their main object, decidedly different topics from any of these. The just mentioned questions of the more popular type never gave him serious concern after once his early years were passed. For that some natural process was responsible for the gradual development of living beings, and so of man, and of all mental and social phenomena, had appeared sure to him, as an inevitable result of the general belief in causation, already during the 40's. It appeared sure to him for the same reasons that made some sort of evolution acceptable to the first philosophers of Greece. It was so far, for him, no

result of scientific induction. It was simply a consequence of his now settled habit of believing in the existence of a natural cause for everything. On the other hand, the more special Darwinian and anti-Darwinian arguments regarding the factors of organic evolution, much as they later interested him, never reached the first grade of importance in his mind. He contributed to such discussions, late in his career, some of the best of his shorter essays. But as a philosopher he was only by the way concerned with such things. He was rather busy, in the main, with the finding of a formula general enough to cover the whole range of evolutionary phenomena, and with proving that this formula correctly described the "cause" of evolution, so far as that cause is knowable at all. This "cause" is something much more general than is any one of the hypothetical special

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“factors of evolution.” As a philosopher, Spencer is therefore most of all responsible for this general formula and for undertaking to show that it applied to all sorts of evolutionary processes.

III

AND so we come, at length, in our account of Spencer, to an attempt at a restatement of the sense of Spencer's formula. Spencer's own peculiar vocabulary is as chronic an incident of his books as his head-symptoms were chronic incidents of his life. Let us try, for the moment, to use as far as we can our own words, while still stating, as faithfully as we may, his case. Our words may be not as good as his; but change is often restful.

In the world at large, matter and energy (so Spencer points out) are constantly passing from one configuration or arrangement to another. As this ceaselessly takes place, particular things

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—suns, systems, planets, continents, forests, plants, animals, men, societies, mental states — appear and pass away. If now we try to look over the whole range of the vast process thus presented to us, we observe that what happens can be reduced, in its larger outlines, to *two* opposed special processes, which more or less rhythmically take each other's place in any given part of the world, according to the prevalent conditions that the relations of this part of the world to the rest determine. One of these processes occurs when bodies collect more closely together, cool, condense, contract, solidify, stiffen, harden, while the energy that they formerly contained is, in part (often in very great part), lost, being spread out as radiant energy over vast spaces, or conducted away to other bodies. Wherever such processes of "integration" predominate, there occurs what

we shall call evolution. The other process occurs when bodies get expanded, liquefied, vaporized, evaporated, scattered, sundered, widely distributed. This process, wherever it predominates, constitutes the primary feature of what we call dissolution. It can occur only when into a system of bodies energy is introduced (by radiation or otherwise) from other systems, or when collisions, or similar events, lead to distributions of energy which involve local heating, expansion, and the like. Our main attention is to be devoted to the one of these processes, which is called evolution.

The gathering together, the condensation, the contraction, and the hardening of masses of matter may go on uncomplicated by other processes. So it is, for instance, when vapor condenses and falls in drops on a rainy day, or when an asteroid is formed (if

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one is so formed) by the condensation of a mass of cooling material of nebular origin. But sometimes, while this uncomplicated or "primary" process of evolution is going on, there also occur "secondary" processes, due to the fact that one part of the mass, which as a whole grows denser, is not placed or influenced in the same way in which another part is placed or influenced. Thus, the outside of a cooling mass may have a crust form upon it, while the inside is still liquid; the crystals which form as an oversaturated solution cools may gather at the bottom of a vessel, while the top remains clear liquid; and so on indefinitely. It is these "secondary" changes which are responsible for what we usually regard as the most important phenomena of evolution. That the secondary changes can become so important as they do become is due to the fact



that, as masses of matter condense, they often form clumps which are in an intermediate state between the stage of absolute hardness or solidity on the one hand, and the state of an absolutely free internal mobility of the parts of the mass on the other hand. A somewhat viscous body is more or less plastic to changes which are impressed upon it. But, on the other hand, it is able to retain for some time the traces of such changes. Examples of "plastic bodies" of this general type are numerous. Our planet itself, as a whole, is such a "plastic body." Its crust is neither unchangeably hard and solidified, nor yet so soft that the traces of what has happened to or in this crust easily pass away. The human brain, "wax to receive, and marble to retain," is a peculiarly complex instance of a plastic body. Whatever happens to its sense-organs may impress it, and

normally does so — so delicately yielding are its minutest structures. Yet it is as retentive as it is impressible. A body can possess some degree of this plasticity only when it is not too dense and stiff in structure, and when it consequently contains a good deal of molecular energy; while, at the same time, it must be stiff enough to resist strain to such an extent as is needed to enable it to keep the traces of what happens to it.

Now, especially in the case of the plastic bodies, the “secondary” changes aforesaid (changes which go on, indeed, chiefly when condensation predominates in the region of the world which is in question, although these changes are not mere cases of condensation) follow a law of the following type.

(1) If the parts of any large body are at any moment as nearly *alike*, in some

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specific respect, as they then can be (e.g., if they are, through the action of some cause, made for a moment as nearly as possible of the same temperature), then, unless the causes which especially determined the occurrence of just this state persist, it is certain that this relative "homogeneity" will prove "unstable." That is, a large body, if it be for a time of the same temperature through and through, will cool unequally in its different parts; for the different parts will be differently exposed to the surrounding world. In consequence it will be a general rule of an evolutionary process that the energy which is passing out of the various parts of a system will pass at various rates, while the condensation will proceed also at various rates in the different parts concerned, so that there will be a constant tendency of the evolving mass to develop within

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itself more and more differences. If the mass in question were a gas or a liquid, the results of this inner differentiation would be lost as fast as they appeared, since nothing would there be abiding. But if the body in question, or the mass of bodies, is in a plastic condition, the results of many or all of these successive differentiations will be retained in such forms as permanent shells, rinds, and crusts; or as wrinkles, furrows, variations of internal consistency of structure; or as specially differentiated types of movement; or as habits of a brain, as customs of a society; and so on endlessly.

(2) Meanwhile, in its relations to the surrounding world, the differentiating and plastic mass, as it thus ages, will react by its various structure and consistency upon the play of the external forces which impinge upon it. As the sand bank, once formed, deflects

the very stream that deposited it, so the differentiating plastic body, as its parts grow more various, will in its turn render more various the new influences to which it is subject. The resulting "multiplication of effects" will be cumulative, and will tend more and more to the differentiation of the plastic body. And so one explains how a planet, first liquid, and of nearly equal heat throughout, gradually complicates its structure as it cools. Each new differentiation of its crust is retained by this plastic body as it slowly grows more solid; and these traces of past differentiation react upon the influences of air, sunlight, ocean, until the climates of deserts and mountain ranges, of seashores and of the interiors of continents, become more and more various. Equally one explains, in Spencer's opinion, why an organism, a human brain, or a social order shows,

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up to its limits, a constant increase of variety in its structure and in its functions.

(3) But progressive differentiation is not all that results in the course of this secondary evolution. The energies within and about a plastic body, as it slowly integrates, tend not merely to the formation of a confused variety, but to the evolution of order amidst the confusion. For, as Spencer insists, there are forms of energy which act like a stream of water, or like a current of air, or like a common and pervasive social tendency. These forms of energy are to be considered as groups of "like forces." They will always be present when a plastic body is subject to secondary evolution; since all the forms of fluid action, some of the forms of radiant energy, the gravitation due to the neighborhood of large masses, etc., are found wher-

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ever bodies are undergoing differentiation. Now these more massive forms of energy will move or will transform "like" objects "in like ways" and "unlike" objects "in unlike ways." The results will be the sort of "segregation" (i.e., of sorting) which one sees when light dust is separated from heavy dust by the wind, or when light sediment is separated from heavy sediment by the action of streams and of gravity, or when the approach of a magnet segregates iron particles from a confused aggregate, or when men of a roving disposition are segregated from home-staying folk by the exciting attraction of some newly discovered country or gold mine; or when the soldiers go together to the war, leaving wives and children at home. To this general factor, endlessly complicated in its working by the conditions of organic or of social structure, Spen-

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cer attributes the fact that the plastic bodies (subject as they are not only to forces which diversify their parts and activities, but also to forces which tend to group like objects and parts together, and to sunder unlike objects and parts) tend in the long run to attain what he calls a "definite" structure and arrangement. A "definite" structure is one wherein the outlines are clear, the parts divided by sharp boundaries from one another, and the whole not only differentiated, but arranged in orderly fashion. This "segregation" process may be viewed as a special union of the general process of condensation or of "integration" upon which the "primary evolution" depends, with the process of differentiation itself.

(4) As a consequence of the processes thus described, evolution, in the cases where it is both primary and second-

ary, has a character which may be summed up as follows: Evolution is the consolidation of a mass of matter, attended by a loss of some of the energy that this mass contained; while, as this consolidation takes place, both the matter concerned and the energy which it still retains pass from a state in which there is little firmness of structure, little orderliness of arrangement, little sharpness of contour, and much inner resemblance of part and part, to a state in which there is great firmness of structure, much orderliness of arrangement, much sharpness of contour, and much inner variety and difference of part and part. This whole process, as Spencer insists, is due to the fact that, as the mass concerned loses some of its energy, the different regions of the consolidating aggregate, being differently affected by the surroundings, tend to grow more

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and more unlike, while the more permanent forces that play upon the whole tend to sort out the parts of the whole, and to dispose them in more or less sharply sundered layers or sections; and while, too, in case the mass in question is a sufficiently plastic body, it not only undergoes these changes, but as it ages preserves the traces of former changes, so that the latter become the foundation of a cumulative increase of former tendencies.

The evolutionary process thus defined must have its limits in case of each limited mass of matter. When these limits are once reached, the no longer plastic body will be in such equilibrium with its surroundings as to resist, by its inner consistency of structure and of movement, such changes as these surroundings are able to bring to pass in it. This state of equilibrium, however, will not be everlasting. The once

plastic body, now incapable of further organization, will finally meet conditions to which its structure is not adapted. Forces, such as attrition, collision, and the like, will play upon it and destroy it. Dissolution will succeed evolution.

IV

SUCH is, in outline, Spencer's general view concerning the character and causes of evolution, and concerning the place of evolution in Nature. A doctrine of such generality and inclusiveness could not be stated without requiring from its author an exposition of many other fundamentally important theses. The theory appeared upon its face to supplant any theological account of the origin of natural phenomena. Hence it was necessary to make explicit the author's attitude towards religious problems. This undertaking, in its turn, demanded the statement of a theory of knowledge. The result of these requirements was

the section of Spencer's "First Principles" which dealt with "The Unknowable." On the other hand, if the general doctrine was to be applied to psychological phenomena, a theory of the relations between mental and material processes was required, so far as these relations, in Spencer's opinion, belonged to the realm of the "knowable." Furthermore, a summary account of the type of mental evolution was needed in order to enable one to compare this type with that which the general formula described. This need was met by Spencer's interpretation of mental life as an "adjustment of internal to external relations," — an interpretation which, abstract as its formulation was, has proved of no small service in directing the course of subsequent psychological inquiry. When, in addition, the general formula of evolution was to be applied in the socio-

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logical field, more special theories of the various types of social phenomena were needed. And here Spencer's doctrines as to the origin and evolution of religion, and his analyses of the militant and industrial types of social evolution, were the results of efforts to meet this requirement. Finally, the formula had to be applied in the region to which it appeared the least adapted, namely, in the region of ethics. While Spencer, conceiving ethical activities in terms of the tendency towards individual and social "equilibrium," was able to bring to pass various connections between the type of change which he attributed to a plastic body undergoing secondary evolution and the type of change which is to be observed in character and in conduct as men's lives harmonize and consolidate, his ethical theory is much more the comment of an old-fashioned English Liberal upon

modern social conditions than it is a new result which evolutionary science contributes to human knowledge. Yet, in all these regions of inquiry, Spencer was led to special theses which stand side by side with his statement of the formula of evolution, and so constitute parts of his contribution to philosophy. Most of all, however, he himself felt that the formula of evolution was his most important contribution to the "unification of science."

When we attempt to estimate the value of the system of ideas which we have thus sketched, it is well at once to lay aside certain controversial tests by which Spencer's opponents have altogether too often sought to try him. In the end, a system of this sort must be judged in the light of what it tries to accomplish, and not in the light of considerations which are foreign to it. Thus, for instance, as myself an

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idealist, I find myself profoundly at variance with Spencer's theory of knowledge, and with his doctrine of the Unknowable. Yet, viewing the man historically, I have to see that his concern with the problem of knowledge was, comparatively speaking, of incidental importance to him; that he never attacked the problem with any very serious and reflective interest in finding where the problem lay; and that his elaborately stated analyses of "The Universal Postulate," of the "Theories of the Metaphysicians," and of the "Relativity of Knowledge" had their place in his exposition merely as conscientious but uninstructed preliminary efforts to clear the way for quite other considerations, in which he *was* positively interested. Otherwise, these discussions of knowledge and being expressed his classic limitation to certain very simple intuitions,—the whole-

some, straightforward intuitions of an English Radical, who, having early seen that we *can* know about natural causation, but cannot know anything about theology, and that we *can* know our rights and our duties, but cannot make out what it is that interests some people in Plato, in Kant, and in all such speculators, — henceforth reflects upon ultimate problems only for the sake of bringing to sharp expression the beliefs that he never learned to question or to analyze.

On this side, then, Spencer's limitations are as obvious as it is unfair to make one's judgment of him dependent upon them. What he undertook to do was to reduce to unity certain aspects of the world of empirical facts. That his effort to do this turned upon fundamental ideas which he was never able critically to scrutinize is of less importance in estimating the value of

his principal formula. The real question in case of Spencer is, How far did he help people to understand evolution?

In trying to answer this question we must again beware of making our judgment turn mainly upon his tendency to apply formulas derived from material phenomena to the description of mental and moral processes. Whatever our view of the nature of things, we all must admit that, since human mental processes are associated with the functions of material organisms, it is useful, for certain purposes, to approach the natural history of mind from the physical side, and to describe psychological processes, so far as that is possible, in terms of their neutral and motor expressions and accompaniments. Hence, if anything general can be said about the evolution of my body, that will give me some propositions

that I must use in describing the evolution of my mind. A true idealist fears least of all such use of physical formulations as an aid in psychology. For he knows that when you are studying phenomena, the best way to vindicate the sovereignty of reason in the world is to try to describe, in the most exact and orderly way that you can, the lawful connections between mental and material phenomena. The closer and the more exact you show such connections to be, the nearer you come to illustrating the reasonableness of things in the order of Nature. Moreover, since physical phenomena are more describable than are mental phenomena, natural science approaches the latter through the former. Hence whoever regards the evolution of mind as an incident of some physical process of consolidation or of mechanical differentiation offers us, of course, no ulti-

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mate truth about the inmost nature of being; but he also asserts something which no idealist, who recognizes what the business of human science is, should regard as in the least inconsistent with a spiritual interpretation of reality. For, if such a formula is true of the phenomena of matter and mind, it will remain true precisely of — phenomena. Now, Spencer's formula was intended to hold true of phenomena only. Furthermore, that Spencer's business, as a student of phenomena, was with "mechanism," in the general sense, rather than with "teleology," I also fully believe. He ought not, therefore, to be condemned merely because he undertook to conceive evolution in mechanical terms. He would have been false to his just philosophical purpose if he had conceived of it otherwise.

The fair question in regard to Spencer is, then, this: "Is his 'unification'

of the purely phenomenal processes of evolution a generalization at once sound and enlightening? ” This is the question upon whose true answer his main value for philosophy depends.

The answer to the question is not simple. In favor of Spencer’s formula, as he states it, stands the unquestionable fact that the transformations of energy, in the physical world, are all of them, so far as we can now see, apparently instances of a single describable process, which, as a phenomenal process, is invariant in type, whether it takes place in stars or in plants or in poets. This process the modern doctrine of energy, which was very incompletely developed when Spencer began to work out his ideas, has undertaken to formulate in *two* main propositions, of which one deals with the *permanence of the quantity* of the energy of any closed physical system within which

such transformations take place, while the second proposition defines the *direction* which the transformations of energy take in a given system, under given conditions (as, for instance, when heat energy tends to pass from a hotter to a colder body). It is unquestionable that any evolutionary process which takes place must exemplify both these principles, but must especially illustrate the second of the two. For the second, having to do with the directions which types of change follow, defines what are, in general, and on the whole, *irreversible* series of transformations of energy, so far as the total systems concerned are taken into account. And no characteristic of the evolutionary processes is more obvious than the fact that, in all the important cases, they also are of an irreversible type. An organism ages, but cannot return to the type of its own early condition.

It undergoes dissolution, but never grows young again. There is, then, no doubt, an universal formula, which includes all the evolutionary processes, in so far as they have any describable physical aspects whatever; and this formula is at least in part furnished to us by the theory of energy.

But the general theory of energy, taken by itself, is too wide in its application to give us any physical definition of what distinguishes evolutionary processes from those of the type of dissolution. Spencer accordingly singles out, as his evolutionary processes, those instances in Nature where *consolidation* predominates. Such processes go on, as instances of the second principle of the theory of energy, wherever a system whose energies are upon higher levels than are the levels of the energy of its surroundings is on the whole losing what Spencer prefers to call its

“contained motion.” But, as Spencer sees, the most of the evolutionary processes, and in particular the organic processes, involve something which is quite different from mere consolidation. He prefers to speak of this other aspect of the processes in question as the “secondary evolution” of the plastic bodies. But hereupon appears one of the most obvious difficulties of the doctrine as stated. In case of organic evolution, consolidation, in the main, appears, *not* as a primary feature of this sort of evolution, — a feature to which the differentiation of organs is but an incident, — but as itself a comparatively incidental feature; while on the whole, the very reverse of consolidation now predominates. In general, organic evolution involves the *taking in of energy from the environment*, and the consequent presence of various anabolic processes which are, in type, the reverse of the

consolidations which take place when bodies cool, stiffen, and grow harder. Similar assertions can be made as to social evolution, when the means of communication, the high training and nutrition of individuals, the physical motives which work against the crowding of masses in single rooms, and so on, tend to introduce more movements and wider separations within the structure of a society. It is indeed true that, in all such cases, there are various "integrations" which Spencer can easily point out, which accompany these processes of increasing mobility and expansion. Tissues harden, cities grow bigger, crowds in theatres grow more numerous, at the same time when the structure of the organisms in question, or of the social groups, also shows many signs of absorbing new energies, and in so far of growing *less* consolidated in its internal structure. But it

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is only necessary to consider how the sun's heat is the supporter of all the organic evolutionary processes on the earth's surface in order to see that, in the organic world, the absorption of energy, and the consequent tendency of masses of matter to assume a *less* consolidated structure than the structure which characterizes their immediate surroundings in the inorganic world together constitute, on the whole, the predominant feature of evolution in this realm, while the consolidation which bones and horns and hardened skin and crowded cities exemplify is rather the subordinate feature of the evolution of the living organisms.

If this be so, how can evolution be described as a *single* process, of which consolidation is the primary, while what occurs in the plastic bodies is the secondary aspect? Have we not rather *one* process in the inorganic world when

the sun, losing heat, shrinks, and *another*, and relatively opposed process, in the organic world, when the radiant energy of this very sun, caught by the earth and the air in springtime, leads to the manifold processes of expansive life which then occur as the climate grows warmer? One of these processes is predominantly a shrinking, the other a swelling. Or is it well to say: Evolution is primarily a process of the loss of energy, and so of consolidation, but secondarily (in plastic bodies) a process which includes much absorption of new energy and much assumption of *less* consolidated structure on the part of matter? Do I evolve when I primarily shrink, but secondarily swell? If so, what is my evolution, — the shrinking or the swelling?

Spencer has ready his answer, partly, no doubt, in the just mentioned examples of consolidation occurring (as

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one part of the life-process) in many organisms. He may add, also, that *unless* the sun were shrinking, the living organisms would not get any new energy to absorb. Hence, he may still insist, the shrinking is the "primary," the expanding aspect of the anabolic processes of living things is the "secondary" aspect.

But one answers: "Am I aided in understanding evolution as a single process by thus merely coming to see that it is rather a complex of mutually opposed processes?" I should indeed be aided by just such an insight if Spencer told me wherein lay the *unity* of these opposed processes when they together constitute evolution. But he does not tell me this, except in so far as he shows me that both kinds of processes, the shrinking of the sun and the swelling of the living matter, are consequences of the all-

pervasive energy-process. But that energy-process includes dissolution as well as evolution. Wherein am I then yet wiser as to just what constitutes evolution?

Again, to say that the solar system as a whole is steadily losing energy by radiation, and is in so far "integrating," while the heating of the earth's surface by the sun's rays is only local, — this is not to show me that the first of these processes is a primary aspect of evolution, while the other is only the secondary aspect of evolution. For Spencer's formula seems to say that *all* evolution is first (and unconditionally) integration, while, sometimes (conditionally), evolution is also the secondary evolution of the plastic bodies. But what I seem to find is that *not* all evolution is integration, since secondary evolution often means the very reverse of integration. In vain does one add: "But

the secondary evolution is a local incident; the primary evolution is more widespread." I was not asking to learn what was local and what not. What I was promised was a single consistent formula for the general description, and then for the special types of the process of evolution. I can therefore indeed see that, if *all* evolution is *a*, while, *in addition, some of it is not only a but also b*,—then the unity of the formula is kept, in that "primary" evolution, which is *a*, is a genus, whereof the *a that is b*, viz., secondary evolution, is then a species. But what I find instead of this is that primary evolution is indeed *a*, while secondary evolution is in large part *not a*, but the very reverse of *a*. Where, now, is the unity of the formula?

One fears, then, that this is so far the main result:—Evolution is a consolidation, except in those highly im-

portant cases where it is an expansion. Often it is both.

Is this result contradictory? Not at all. Many a process keeps its unity by precisely such an union of opposing tendencies. But the formula is so far simply unenlightening, because it does not tell me wherein this unity lies.

Let us pass to the secondary evolution considered in itself. It involves two great features, — differentiation and the increase of definiteness through segregation. The differentiation is a cumulative process, due to the fact that a plastic body keeps the traces of what has happened to it, and so constantly prepares a basis for new varieties of effects to be produced upon its various parts. The segregation is due to the sorting types of forces, such as were before exemplified in our summary.

Now we have here again two types of processes which are often opposed

to each other. The differentiating forces of erosion break off great rocks, and also smaller particles, which so far confusedly differ from one another as a glacier carries them down the mountain valley. Later on the mountain torrents, and later still the rivers of the plain, sort out the various kinds of sediment. The subsequent mud-deposits, stratified and set in order, present less appearance of heterogeneity than would the mass of unaltered glacial *débris*. Nature thus smooths over rough outlines, arranges "like" things together, wears away varieties, so that clear contours appear; in brief, reduces as well as increases varieties. It is so in society. Circumstances differentiate men, and the "touch of Nature" makes them one again. My mind differentiates as I learn, and simplifies as I come to understand. My conduct is more heterogeneous when I

am learning to dance than it is when I find out how to dance smoothly.

Now one, of course, need not tell Spencer all this. He knows and repeatedly illustrates it all. Nor need one talk of contradictions. A true process of evolution no doubt unites opposed tendencies. But what one wants to know is, *What principle, in any given case, gives the opposing tendencies that unity?* This is what Spencer's account does not tell us. Segregation tends, in certain respects, towards a reduction of the degree of differentiation. What constitutes the true evolutionary union of these two processes?

In sum what one learns seems to be that, in general, the evolution of the plastic bodies involves increasing differentiation, except where differentiation is diminished, and increased segregation, except where the incident-forces mix things. Now, all this is

unquestionably true; but does it tell us how to distinguish the true evolutionary *combination* of these opposed tendencies from that combination which leads towards dissolution?

The vagueness of the Spencerian description of evolution renders it possible, of course, to conceive the formula so interpreted as to fit any special case that may arise. But what one misses is any guide, in the formula, for the precise definition of types of cases *in advance of such special adjustments*. Any permanently and positively useful generalization, in a field like this, must be such as to define for us, not merely something abstract enough to be true whatever happens, but a more or less complete and exact *series of ideal cases* to which the formula can be deductively applied, in such wise as to show how the predicates used in stating the generalization are to be specified to

suit each of these ideal cases. The law of gravitation, the theory of energy — these are not formulas such as: “All bodies tend to approach one another,” or “Everything changes.” But they are formulas that can be applied, deductively, to predict in detail the characters of any one of an infinite series of ideal cases (such as planets moving about suns, masses of gas cooling, etc.). Now, nobody expects, as yet, any mathematical formula for evolution. But just because every case of evolution is obviously a case where mutually opposing tendencies somehow balance one another, and combine into higher unities, the requirement for the situation is, not that the philosopher should tell us (truly enough) that evolution involves both shrinkings and swellings, both mixings and sortings, both variety and order, — but that he should show us *how* these various tendencies

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are, in the various types of evolutionary process, kept in that peculiar balance and unity which, each time, constitutes an evolution. This is what Spencer seems not to have done. He was quite right in thinking that a mechanical theory of the types of evolutionary processes is a needed scientific theory. For evolution, in the phenomenal world, must be reduced to physical laws. His great merit is to have attempted such a theory at all. He aimed at great things in a serious and frank and straightforward way. He stated one notable problem for the coming age. And to have done even this is a great merit.

In sum, Spencer appears as a philosopher of a beautiful logical naïvete. Generalization was an absolutely simple affair for him. If you found a bag big enough to hold all the facts, that was an unification of science. If, mean-



while, you were ready to present a beautifully ordered series of illustrations of your theory, this showed that your facts themselves were conceived with a due respect to their own orderly theoretical unification. But orderly exposition, which Spencer always had at perfect control, is not necessarily the same as the perfection of one's theory. The business of a theory of phenomena is the arrangement of systems of facts in ideal serial orders, according to concepts which themselves determine both the ordering of each series and the precise relations of its members to one another. Spencer's theory of evolution does not determine the relations of the essential processes of evolution to one another, does not define their inner unity, and does not enable us to conceive a series of types of evolutionary processes in orderly relations to one another.

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Yet, as one may reply, he was a pioneer. This is true. His value as such a pioneer has still to be seen in the future of thought. His beautiful straightforwardness of personal character, his noble independence of spirit, his loyalty to what he conceived to be his task, his humanity, his advocacy of rational social and international peace and liberty,—these things compensate for much imperfection in the result of his philosophy. His demand that the evolutionary concepts shall be unified, remains a permanently inspiring logical idea which will bear much fruit in future. His service as a teacher of his age will never be forgotten. His limitations have their own classic finish of outline. His place in the history of English thinking is significant and secure.

HERBERT SPENCER'S
EDUCATIONAL THEORIES

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AMONGST the numerous reflections to which a reading of Spencer's "Autobiography" gives rise, some memory of his educational theories finds a very natural place. I propose, accordingly, in this paper, to reconsider some of Spencer's views regarding education, and to do so in the new light in which the "Autobiography" enables us to see both the man and his work. A general sketch of Spencer's "Theory of Education," a consideration of how this theory was related to his own personal character

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and early training, and a resulting estimate of the value of the theory will constitute the task to which this paper is devoted.¹

¹ The following essay was prepared, independently of the essay upon Spencer's "Philosophy of Evolution," as a paper to be read before an educational conference. As a supplement to the more extended consideration of his general theories, it finds its place in the present book.

I

DURING the years between 1850 and 1860, Spencer, then between thirty and forty years of age, was a frequent contributor to various periodicals. In 1850 he had published his first work, the "Social Statics," a treatise on the application of certain ethical ideas to the management of society, and in particular to the theory of government. This first work had, as its consequence, a somewhat rapid development of Spencer's own ideas in the direction of his subsequent "System of Synthetic Philosophy." The development in question led through the preparation of the first form of his work on "The Principles of Psychology," — a

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book in which he gave the first expression to his view of the doctrine of evolution. This volume was published in 1855. The Spencerian conception of evolution now quickly grew more definite, and was applied to more various classes of facts. The article on "Progress, its Law and Cause," was prepared in the early months of 1857, and constituted what Spencer himself calls "the initial instalment of the 'Synthetic Philosophy.'" The plan, however, of writing and issuing his connected system did not assume the form of a written prospectus until 1858. In 1860 the definitive programme of the system, much revised, was issued, and the undertaking of writing the "First Principles" began May 7, 1860.

Otherwise, however, during the decade in question, Spencer had been busied with such essay-writing as his

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varied relations with a number of journals and reviews, and the trend of his own interests, had determined. His mode of life, during those years, was that of a bachelor literary man who lived, now in London, now in various country places, as circumstances and his mood determined. He had deliberately abandoned, long since, his first profession of engineering for such opportunities as editorial and essay-work might give him to develop his mind, to enjoy his own intellectual freedom, and to influence the thinking of his time. Social problems, the study of human nature, and the questions of general science principally concerned him. It was to this period of the 50's that the most notable of the early papers which still appear in his collected essays belong.

Amongst other topics, however, the problems of education attracted his

attention. The four papers which are now to be found in his volume on "Education" belong to the decade which is here in question. In 1854 appeared a paper on "The Art of Education," now the second of the essays of the volume on education. In 1859 the essay on "Physical Education" was published in the "British Quarterly," and the two other papers which make up the volume on education are products of the same period. In 1860 this volume was published in America, the "North British Review" not permitting the republication in England of two of the papers. The work has remained, so far as I am aware, substantially unchanged.

The book on education thus belongs to the formative period of Spencer's philosophical career. In its relation to his life it appears as a sort of summary review of the lessons which

his childhood training and his youthful studies had taught him; while, in turn, its formulation furnished to his thought one of the numerous illustrations of that general conception of evolution which he was soon to attempt to apply to all regions of the organic and inorganic realms. Spencer's theory of education is thus not a mere corollary of his general systematic doctrine of evolution, since his educational ideas occurred to him during the time when this systematic doctrine was still in process of assuming form in his mind. On the other hand, his theory of education is indeed intimately related, in his mind, to the general evolutionary doctrine; because the same motives which led him to his system led him also to define how he viewed the task of the teacher.

These four essays on education are, or at least until recently were, amongst

the best known general guides which our more progressive American school teachers and writers on the art of teaching have been disposed to consult and to discuss. Still, I suppose that I cannot assume their contents to be perfectly fresh in the mind of every one of my readers. I must therefore sketch, in the rudest outline, their contents.

The first paper, on "What Knowledge is of Most Worth?" contains Spencer's famous, and, in its way, undoubtedly classic statement of the case in favor of giving to the study of natural science the most prominent place in a rational curriculum. "Before there can be a rational curriculum," says Spencer, "we must settle which things it most concerns us to know. . . . To this end, a measure of value is the first requisite." But now: "Everyone in contending for the

worth of any particular order of information, does so by showing its bearing upon some part of life," by showing that a given sort of learning "beneficially influences action,— saves from evil or secures good,— conduces to happiness." "How to live," continues Spencer, "that is the essential question for us. Not how to live in the mere material sense only, but in the widest sense. To prepare us for complete living is the function which education has to discharge; and the only rational mode of judging of any educational course is to judge in what degree it discharges such function."

Now to live means to carry out certain kinds of activity, which may be classified under five heads. These are: first, "those activities which directly minister to self-preservation; second, those activities which, by securing the necessaries of life, indirectly minister

to self-preservation; third, those activities which have for their end the rearing and discipline of offspring; fourth, those activities which are involved in the maintenance of proper social and political relations; fifth, those miscellaneous activities which make up the leisure part of life, devoted to the gratification of the tastes and of the feelings." The classes thus stated are named, says Spencer, in the order which is also that of their "true subordination." For unless one first preserves himself from moment to moment, he can do nothing else; and of the types of activity which follow in the list, it is plain that some measure of success in each type is a *conditio sine qua non* of any success in any of the succeeding types.

Some degree of training in each of these types of activity belongs to the purpose of any rational system of edu-

cation. There should be, however, the *most* careful training in the most essential and important types; and the degree of training in each type of activity should be proportioned to the value of that type in the series of successive types. That is, whatever training you have time to give a man in the types of activity, which are to occupy his leisure time, you should, in any case, give him more careful training still in the activities which concern him as a citizen or as a member of society, and more careful training still in his duties as a parent; and you should be most of all careful that he learns what is essential to self-preservation. Moreover, knowledge relating to the activities of any type is more important in proportion as it has intrinsic and universally valid connections, rather than transient or conventional connections, with that sort of activity. And knowl-

edge has also a value not only in itself, but in so far as it constitutes a means of discipline of the mind, and is thus useful as a mental exercise.

✓ Having set forth these preliminary considerations, Spencer proceeds to show what sort of knowledge best furthers each of the five kinds of activities. Our activities which tend to self-preservation need to be supported by a knowledge of the laws and conditions of health. "A course of Physiology" such "as is needful for the comprehension of its general truths, and their bearings on daily conduct, is an all-essential part of a rational education." The indirectly self-preservative activities of the second type, namely those which involve earning our livelihood, are in general to be furthered by a knowledge of physics, of chemistry, and of biology, and, in case of the more exact arts and

activities, by a knowledge of mathematics. Industrial success also depends upon some sort of knowledge of the laws which obtain in the life of society. The activities which have to do with the care and the training of children are not to be wisely carried out unless aided by a knowledge of the laws of child life. Therefore, "Some acquaintance with the first principles of physiology and the elementary truths of psychology is indispensable," says Spencer, "for the right bringing up of children."

As for the fourth class of human activities, those of the citizen, a knowledge not of the trivial gossip of what is usually called history, but of the laws of society, is essential for the proper and successful performance of the work of citizenship. And thus, to sum up, as regards all those human activities which are directly or in-

directly devoted to self-preservation, or which are concerned with the duties of the parent or of the citizen, the knowledge that is most needed is the knowledge of some branch or branches of science. Physiology, psychology, social science, and in their respective places, mathematics, physics, chemistry, — these comprise, then, the branches of knowledge which are of the most worth.

It might be supposed that the fifth type of human activities, those concerned with the leisure portion of life, would emphasize the relative importance of other types of knowledge besides those which belong to the pursuit of the various natural and social sciences. But Spencer now proceeds to the decidedly famous assertions which here follow. To the question, "What knowledge is of most use . . . what knowledge best fits for this remaining

sphere of activity ? ” viz., for the activities that have to do with cultivation, with art, and with refinement, Spencer answers: “ Unexpected as the assertion may be, it is nevertheless true, that the highest art of every kind is based upon Science — that without Science there can be neither perfect production nor full appreciation.” Painting, sculpture, music, poetry, Spencer hereupon insists, are arts whose productive artists depend, for their success, upon a knowledge of natural facts and natural laws, be this knowledge one of optics or of the laws of equilibrium, of the psychology of human passion, or of the psychology of speech. Whoever is justly to appreciate art must possess, in some form, the same sort of knowledge. Usually, artists and observers alike depend upon hastily acquired and ill generalized knowledge of the types in question. It would be better,

he insists, if their knowledge were more accurate and better generalized. This could occur only in case both artist and admirer of art are duly possessed of the necessary scientific knowledge. Thus in case of the fifth type of activities, as well as in case of the other and more necessary types, the knowledge that is of most worth is the knowledge of the sciences.

Similar considerations result if one asks whether scientific knowledge, rather than other types of knowledge, possesses merely conventional and transient value, or whether, on the contrary, it possesses permanent and intrinsic value. Custom, Spencer insists, may indeed make the writing of Latin poetry a temporarily dignified sign of cultivation; but nature it is which renders all scientific knowledge permanently important. Accident may set everybody busy trying to know

about some popular hero, e. g., Napoleon. But permanently important truth about the laws of society possesses no accidental, but rather an intrinsic significance, which no popular whim can generate or destroy. Moreover, the disciplinary value of scientific knowledge is greater than that of other kinds of knowledge. Nothing trains the mind better than the study of nature.

In sum, then, from every point of view science, in the sense of the orderly knowledge of the laws of things, is that sort of knowledge which is of most worth. Hence, the current system of classical training is not only defective, thinks Spencer, but it is, in its principle, fundamentally and hopelessly at fault. It not only lays the sole stress upon the least important of the five types of human activities,—those which belong to the leisure por-

tion of life,—but it emphasizes methods of work which are not suited to the best development even of this type of activities. The Greek scholar is led to judge of poetry without understanding psychology, to estimate architecture without knowing anything about statics, and to pass as a judge of sculpture, although he is ignorant of anatomy. As he has not learned to observe nature, he cannot wisely enjoy art.

Moreover, the current study of history, thinks Spencer, lays stress on whatever is trivial in the affairs of the past, and does not fit the student to comprehend sociology. Hence the humanities, as they are studied, are not useful to aid the student even in that comprehension of human nature which one needs in training children, or in performing one's duties as a citizen. An entire reform of the educational system in the interests of science—a

reform from top to bottom—is consequently, in Spencer’s opinion, a requirement of the time, and a requirement which, as he also holds, the time, so far, wholly misunderstands.

Such is the famous first amongst Spencer’s four papers on education,—a paper which will long remain a classic expression of its author’s insight, power, and limitations. From the complex problems of education in our own day we may well look back with envy upon one to whose view the problem “What knowledge is of most worth?” could appear so enviably soluble, so beautifully uncomplicated. You fail to understand, perhaps even to produce, poetry. Well, then; study psychology and phonetics. They may not overcome your difficulties; but therein lies the sort of knowledge that you most need in order to cultivate your poetical appreciation. You wish to

become a sculptor. Well, you are to use marble. Your success will therefore doubtless be furthered if you make prominent not only the study of anatomy, but also the general theory of the strength of materials, and the principles of dynamics, or perhaps of chemistry. Tennyson writes in the "Two Voices":—

"'T is life of which our veins are scant,
More life and fuller that we want."

One of Tennyson's two voices ought to have been thoughtful enough to remark that, if this really is what we want, we had better study Foster's "Physiology," and also take a laboratory course in the science!

Now, seriously, in our own day, when the high worth of scientific study is indeed so cordially recognized, what one can still object to a view of this type is not, of course, that it is merely false, but that it marvellously, and with the

relative falsity of one-sidedness simplifies the problem both of life and of education. In these days, there is no longer danger, at least in our country, that the true and deep significance of scientific studies shall fail to be recognized. Meanwhile, it is indeed unquestionably a merit of this very essay of Spencer to have stated, in the middle decade of the last century, and in England, so simply, so cogently, so popularly, a plea for the study of the natural sciences. But our wonder, as we read to-day, is how Spencer can possibly have interpreted the educational problem in such simple terms. It is not that he has given so much value to the special sciences, but that he is so unable to observe the values that belong to other types of human learning. Just here it is that his "Autobiography" will help us to understand the naïvete with which he defended this position,

and why the educational world seemed to him so simply definable.

The second of the essays of the volume upon education is that upon "Intellectual Education." It deals with the central problems of the method of teaching elementary science to young minds. Its maxims have now entered so completely into the life of many teachers of elementary science, that here a very brief exposition will suffice. The pupil, as Spencer teaches us, is to be made, from the outset, so far as possible, an investigator of nature. He is not only to come into contact with natural facts at first hand, but he is to be taught to generalize his own principles through an inductive study of the problems which the facts suggest. To as small an extent as possible is he to learn by rote, to as small a degree as possible is he to be guided by authority, or led to lean upon the crutch of

his teacher's explanations. He must, above all, learn the art of observation. Moreover, he must be so guided that the acquisition of knowledge shall be pleasurable rather than painful. The lessons of the field and of the playground shall be, especially in early years, a very important part of the curriculum. The order of learning must correspond, moreover, with the order of the evolution of the mind. In our teaching we must proceed from the simple to the complex, just as the mind itself in its natural evolution grows from simplicity to complexity. We must proceed also from the concrete to the abstract, from the singular and the particular to general principles. "The education of the child must accord both in mode and arrangement with the education of mankind considered historically." We must therefore also proceed from the empirical to the

rational. "Every study should have a purely experimental introduction, and only after an ample fund of observations has been accumulated, should reasoning begin." The whole process should be, as far as possible, one of "self-development" on the part of the child. Children "should be *told* as little as possible, and induced to *discover* as much as possible." The final test whereby we judge "any plan of culture" should meanwhile be the question, "Does it create a pleasurable excitement in the pupils?" "When in doubt," says Spencer, "whether a particular mode or arrangement is or is not more in harmony with the foregoing principles than some other, we may safely abide by this criterion." For, as to the value of a study for a given child, "a child's intellectual instincts are more trustworthy than our reasonings."

Spencer proceeds to apply these principles to the doctrine of the education of the senses, to the early stages of nature-study, and then to the more complex processes whereby the child passes, as he grows, to a comprehension of the wider connections and the more general principles of the natural sciences. Our philosopher discusses the use of drawing as a means of training a child's powers of observation, and considers the suitable course whereby the child can be led to a knowledge of the laws of perspective, and to the point where he can grasp geometrical principles. The "self-instruction" thus initiated and guided is to become the basis for a voluntary and self-directed educational course which shall continue into mature years and throughout life.

The third of the essays on education, and one of the most frequently criticised, contains the famous doctrine

of the "discipline of consequences" as the true basis of any sound moral education. Instead of external and arbitrary commands, counsels, and penalties, the child should be trained and coerced into good conduct only by contact with nature and with his fellows, and by his own needs, physical, social, intellectual, and emotional. To be sure, counsel may unobtrusively aid in the process. But after due warning from his parent or teacher has preceded, and has been disregarded, then the pain of the burn which a careless playing with fire on the child's part involves will teach him not only to dread the fire, but to be willingly more considerate henceforth of the warnings which he hears from the same source. When he himself is unkind, the natural penalty is the temporary loss of that friendship which his guardians, if they are wise, will long since have established with him. Coer-

cion, like intellectual training, must thus be self-developed. That is, the child must learn to hold himself in check, by getting every proper opportunity to learn why such checks are in accordance with his own physical interests, and are inevitable accompaniments of a happy social life.

The fourth and final essay is concerned with the problems of physical nurture and training, and here interests us less, despite what I suppose to be its considerable historical importance as a means whereby general attention was attracted to the importance of this aspect of school life.

II

OUR hasty review of the essays on education has already shown us that these papers are especially characterized by a certain notable directness, by their simplicity, and by their absence of care for the harder complications of educational theory. Just as Spencer's doctrine regarding "What knowledge is of most worth?" knows no scruples regarding those aspects of life and of conduct concerning which no special natural science gives the learner sufficiently definite counsel, precisely so his admirable statement of the method of elementary nature-study shows no sign of recognizing certain other problems of method which are not to be solved merely by arous-

ing a pleasurable excitement in the child, nor by teaching him to observe phenomena, nor by encouraging him to make his own generalizations from particular natural facts. And precisely so, whoever really knows men, is aware that the "discipline of consequences," important though it unquestionably is, is by no means the whole story of the means whereby we war with the moral ills of human nature. The whole Spencerian account is that of a man innocent, so to speak, of some of the greatest of human issues, a man to whom certain beautifully clear and simple ideas suffice as the expression of the whole business of living. Yet, on the other hand, you see as you read, that this is indeed no man of the closet, but a man acquainted, and well acquainted, with just those aspects of his physical and of his social world which he chances to find of

interest. He is, withal, a genuinely humane man, who loves human liberty, respects the rights and the interests of children, and desires to have no man externally constrained by any requirements save those of nature and of the general welfare of other men. The narrowness of Spencer's outlook into the field of education is as obvious as is the wholesomeness of his attitude towards all the educational problems that he actually comprehends. And so the reader is led to ask, How came Spencer by these his insights and his limitations? He was himself no practical teacher. How came he to know so well the curiosity of the actually inquiring child who loves nature? How came he to comprehend so well the business of the teacher of elementary natural science to children? On the other hand, he was by deliberate choice a philosopher. How then came

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he to ignore so wide a range of vital human interests as he did ignore?

To all such questions the "Autobiography" now furnishes a most interesting answer. For it shows us that Spencer's account of the ideals and of the problems of the teacher is little other than a direct confession of his own experience, not indeed as a teacher of other people's children, but as a pupil of his father. His own father was his model of what the elementary teacher of science, in dealing with children, ought to be. His own youthful experience — the experience of a morally very sound and admirable boy — had given him an acquaintance with the discipline of consequences as the basis, in his own case, for a very wholesome moral education. His own later nervous invalidism, which developed during the 50's, and which was accompanied by a good deal of over-



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concern about his bodily sensations, had rendered him peculiarly interested in the problems of physical training. Hence his essay on that topic. His range of scientific studies, his own earlier practical use of these studies in connection with engineering work, and his later disposition to generalize ideas derived from these scientific studies so as to make them applicable to the whole field of philosophical inquiry,—these are the motives which express themselves in his personal estimate of the relative importance of scientific knowledge. The book on education is thus indeed no arbitrary invention of a doctrinaire, who devises programmes for other people. It is in itself a sort of generalized autobiography. It has therefore all the naïvete of the man who says, “Thus I grew; and so ought *any* man to grow.” “Thus I am; and, except for my in-

validism, so would any man be happy to be, if only the world would stop interfering with him." The calm assurance with which Spencer thus views all other men's life-problems in terms of his own personal experience is characteristic. To be sure, he meanwhile lays great stress upon personal independence, upon individual rights. He does not wish to force his ways upon anybody. He would let every man grow, so far as possible, in that man's own way. But he is convinced, upon the basis of his own experience, that there is substantially only one way to grow, — viz., by observing natural objects in childhood, by learning to make one's own generalizations, and by profiting from the moral discipline of consequences. In brief, Spencer is indeed an individualist; but he recognizes, after all, only one essentially important sort of individual, —

viz., an individual of the intellectual and moral temperament of Herbert Spencer. That he actually meets, in the England of his time, with so few other individuals who seem now to be of this type, — this fact appears to him to be due simply to the vicious national system of education. Let any boy alone in the right way, but encourage him to observe nature, and he will become, in his own measure, an essentially Spencerian sort of person. Force upon him the classics, teach him grammar, coerce him as the English boys in the antiquated public schools are coerced, and then, indeed, he may turn into a professor of Greek, or a theologian, or a Tory, or some other objectionable type of slave to tradition. As a fact, human nature is one, and healthy training can conform to but one type. It seems hardly excessive to interpret Spencer in this way.

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How easily Spencer emphasizes his own personal point of view as he defines what it is objectively important for a man to know is suggested, in the course of his first essay, by a very characteristic remark. In this essay, in one passage, he has occasion to illustrate, by peculiarly obvious and impressive instances, how the truths of science, unlike the vain traditions of classical or of historical education, have a worth which is not conventional or transient, but intrinsic and permanent. He therefore needs, in order to show this, to name a few very vital and certain scientific principles. He actually names the following: "Such facts," he says, "as that sensations of numbness and tingling commonly precede paralysis, that the resistance of water to a body moving through it varies as the square of the velocity, that chlorine is a disinfectant,

—these, and the truths of science in general, are of intrinsic value; they will bear on human conduct ten thousand years hence as they do now.” This selection of vitally important scientific truths is, I say, characteristic. For the first momentous truth of science which Spencer here mentions—the assertion about numbness and tingling as warning symptoms of coming paralysis—hardly seems to-day, I think, to have the significance which he attributed to it. It is apparently more momentous to observe that a very large class of neurasthenic sufferers pretty persistently complain of numbness here or there in their bodies, and of various other false sensations, and that just these people are consequently often disposed to worry, very obstinately, over the idea that they are about to be paralyzed. This symptom, not of any actually impending apoplec-

tic attack, but of nervous hypochondria, is one of the commonest of the complaints of patients of the type to which Spencer himself, from 1855 on, belonged. The bearing of the principle on human conduct is, therefore, probably this: Since some such patients live, like Spencer, to be eighty years old, and since very many of them indeed never get any nearer to paralytic seizures than thus to complain, most of them need not worry over their numbness. For their apoplexy, if ever, and whenever, it chances to come upon them, is very likely, in its mean-spirited way, to give them no premonitory sensations whatever to mention in their essays as illustrations of momentous scientific truths.

The insistence here in question is indeed but a trifling matter. Yet of itself it suggests what the "Autobiography" shows us in detail, namely,

that Spencer's essays on education are themselves, in a very marked sense, the outcome of autobiographical reflections. To say this is of course not for a moment to set the whole educational theory in question upon a level with the very pretty fragment of unconscious nervous confession just mentioned. A man like Spencer is to be judged, of course, not by his chance words, but by his larger views. And as a fact, if his head-symptoms made him, from early middle life on, somewhat over-anxious about himself, his own early training had been, in its own way, both physically and mentally a model of a normal and a wholesome process of development. One can only envy him the chance to be himself which this training had involved. One can also only admire this entire process as indeed, when rightly estimated, a model for the training of other men.

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But the true lesson of the model is that other men, of types far removed from Spencer's, can only be trained as well as he was trained, in case methods are individualized for their needs, as Spencer's father so happily individualized the method of training for the young Spencer's needs. It does *not* follow that what knowledge was of most worth for Herbert Spencer must needs be of most worth for every other child. It does *not* follow that just that form of the discipline of consequences which proved so effective in the moral training of a calm, obstinate, considerate, watchful, outward-looking, cheerfully inquiring, dispassionate, kindly, but essentially cool nature, such as was that of the young Spencer, will serve for every other variety of human creature. Spencer, as a boy, was a very normal human being of his own type. And if all children were of his

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type, the problem of education would indeed be simplified; yet the result would hardly be such as would add to the gayety of nations, to the poetry of life, or even to the practical effectiveness of the race. For my own part, as I read the "Autobiography," I come to admire and to enjoy Spencer as never before. I would not have him a different personality for the sake of any man's theories or methods. He was of his own kind a most wonderful example. But I should be sorry if all men were Spencers.

Herbert Spencer was born in 1820, — the first child, and the only child of the family to reach maturity. His parents were a highly intellectual father and a very gentle, kindly, and unaggressive mother. The father was a teacher, carrying on a school and also taking private pupils, until ill health led to his abandoning this occupation. He was,

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except for some defects of temper, a very noble and high-minded man of sensitive constitution, and of great and conscientious industry. In youth he was vigorous and active, but later he was for years a sufferer from nervous irritability, with vexations of various sorts, which interfered with his effectiveness, but not nearly so much with his intellectual interests. He was independent in spirit and practice, pious, and of positive religious convictions, but a nonconformist in the fullest sense, — nominally for years a Wesleyan, but then seceding from that body, and thereafter making little of outward religious forms. In religions, as in other matters, as Spencer tells us, “my father advocated self-help and independent exploration, rather than passive recipience.” Spencer the father always remained, however, a believer in what he took to be genuine Chris-

tianity, and regretted his son's later abandonment of supernaturalism. The father had some ability as an inventor, and what his son describes as "artistic perception joined with skill of hand."

The father took seriously, from the first, his office as his son's teacher; yet equally, from the first, he chose a policy involving a minimum of interference and a maximum of freedom for the boy. Of Herbert Spencer himself the first recorded incident of any intellectual importance is this, which his father long afterwards wrote down as a reminiscence: "One day, when a very little child, I noticed," says the father, "as he was sitting quietly by the fire-side, a sudden titter. On saying, 'Herbert, what are you laughing at?' he said, 'I was thinking how it would have been if there had been nothing besides myself.'" This, I may say, seems to have been Spencer's only

excursion into Idealism. When Herbert Spencer was seven years old, his parents moved to a house in the outskirts of Derby, where the boy's childhood was passed. His training began with very little school drill, with comparatively little active control on the part of the father, and with much wandering on the boy's part in garden, fields, and woods, together with a good deal of fishing. Before long the boy's interest in natural objects took intellectual form in a collecting interest in entomology — an interest which the father encouraged. Moths, butterflies, dragonflies, beetles, were extensively studied; their larvæ were collected; drawings were made of them. "Initiated thus naturally," says Spencer, "I practised drawing all through boyhood to a greater or less extent. . . . My father disapproved wholly of drawing from copies." Sketches of outdoor

objects of various sorts followed. And the boy was led over to making models of various kinds. Meanwhile, like other children, Herbert was, as he says, "extremely prone to castle-building, — a habit which continued throughout youth and into mature life. . . . In early days the habit was such, that on going to bed, it was a source of satisfaction to me to think I should be able to lie for a length of time and dwell on the fancies which at the time occupied me." The resulting mental habits ran to the delightful extremes common enough in children who are brought up much alone. Novel-reading ere long followed, and was secretly pursued after the boy had been sent to bed, although such reading was of course against the rule. This generally outdoor life, and this absence of forced labor, tended, as Spencer feels sure, to establish his health. He became strong, and was a

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good runner. With his playmates, as far as he had them, he was peaceable. But from an early age he had a marked "disregard of authority," and the consequence, as he says, was "chronic disobedience." Not that his conduct tended to active viciousness, but that he quietly went on in his own set way. His father blamed this sort of behavior, but did not vigorously interfere to prevent it, being himself too sincere a nonconformist to be fond of coercion. Along with this trait went, however, an unwillingness on Herbert's part to domineer over other boys, a love of letting other people have their liberty, and an aversion to any form of cruelty to animals, except, to be sure, in so far as the beloved fishing involved giving pain to the fish. Even this form of causing pain later seemed to Spencer, in his youth, intolerable, and he then gave up fishing for years, resuming it

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only as a refuge in his later invalidism. During boyhood Herbert was sent by his father to more than one school; but the father remained his chief teacher. Early the father showed the boy physical experiments, and got him to help in performing them, taught him, by actual experiments, the rudiments of chemistry and, above all, encouraged him in independent thinking. Especially prominent was the father's habit of asking the boy, "What is the cause?" of one or another natural phenomenon. The boy was encouraged to puzzle out such matters for himself. "On one occasion," says Spencer, "my father put to me some question concerning the cause of an occurrence named; and when, after a pause, I gave him my explanation, his reply was, "Yes, people who knew nothing about it would think that clever; but it is not true." Hereupon, however, so far as Spencer re-

ports the incident, there seems to be no memory of any further explanation offered. The question was left open.

The immediate result of this boyhood training is summed up by Spencer himself in a remarkable passage of the "Autobiography" (I, 100):—

"Here let me sum up the results of my education thus far — that is, to the age of thirteen.

"I knew nothing worth mentioning of Latin or Greek: my acquaintance with Latin being limited to ability to repeat very imperfectly the declensions and a part only of the conjugations (for I never got all through them); and my acquaintance with Greek being such only as was acquired in the course of word for word translation, under my uncle William's guidance, of the first chapters of the Greek Testament. Moreover I was wholly uninstructed in English — using the name in a technical sense: not a word of English grammar had ever been learned by me, not a lesson in composition. I had merely the ordinary knowledge of arithmetic; and beyond that no knowledge of mathematics. Of English history nothing; of ancient history a little; of ancient literature in translation nothing; of biography nothing. Concerning things around, however, and their properties, I knew a good deal

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more than is known by most boys. My conceptions of physical principles and processes had considerable clearness; and I had a fair acquaintance with sundry special phenomena in physics and chemistry. I had also acquired, both by personal observation and by reading, some knowledge of animal life, and especially of insect life; but no knowledge of botany, either popular or systematic. By miscellaneous reading a little mechanical, medical, anatomical, and physiological information had been gained; as also a good deal of information about various parts of the world and their inhabitants. Such were the acquisitions which formed a set-off against the ignorance of those things commonly learned by boys.

“Something remains to be named, however. I refer to the benefit derived from an unusual mental discipline. *My father's method, as already intimated, was that of self-help carried out in all directions.* Beyond such self-help as I have already exemplified, there was always a prompting to intellectual self-help. A constant question with him was, — ‘I wonder what is the cause of so-and-so,’ or again, putting it directly to me, — ‘can you tell the cause of this?’ Always the tendency in himself, and the tendency strengthened in me, was to regard everything as naturally caused; and I doubt not that while the notion of causation was thus rendered much more definite in me than in most of my

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age, there was established a habit of seeking for causes, as well as a tacit belief in the universality of causation. Along with this there went absence of all suggestion of the miraculous. I do not remember my father ever referring to anything as explicable by supernatural agency. I presume from other evidence that he must at that time have still accepted the current belief in miracles; but I never perceived any trace of it in his conversation. Certainly, his remarks about the surrounding world gave no sign of any other thought than that of uniform natural law.

“Let me add that there was on his part no appeal to authority as a reason for accepting a belief. That same independence of judgment, which he had himself, he tended, alike intentionally and unintentionally, to foster in others; and in me he did it very effectually, whether with purpose or not. Doubtless it existed innately; but his discipline strengthened it.”

The next stage of Spencer's training was begun when he was sent to take lessons with his uncle at Hinton, near Bath. Of the resulting rebellion of the boy at his uncle's somewhat stricter discipline, and of his flight from his uncle's house, and return home, under

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conditions which involved great temporary hardship, the "Autobiography" tells in its Chapter III. He walked decidedly over one hundred miles in three days, alone, with no sleep and almost nothing to eat, and appeared at home in a state of great exhaustion, to the alarm of his parents. One sees how, as a result of this incident, Spencer did indeed experience the discipline of consequences in a case where his own quiet obstinacy brought him for the first time into a larger conflict with authority. Plainly, being the boy he was, the incident of his flight, of his long walk home, and his exhaustion by the way and subsequent temporary prostration, taught him an important lesson, without notably altering his attitude towards authority. Later he returned to Hinton, and remained there with much more docility, but still with the same characteristic

independence of mind and interest, until he was sixteen years old. In 1837, at the age of seventeen, Spencer entered the office of the resident engineer of the London and Birmingham Railway to learn, by actual work on the road, the calling of a civil engineer. Herewith his boyhood training ends, and his transition to the work of life begins.

The principal motives which determined Spencer's early education are now before us. We see the truth of what he himself remarks in the "Autobiography," viz., that his father's plan for his early mental guidance was the basis upon which rested Spencer's later views as to educational method, while the concrete and extremely practical training in science to which he was subjected in his later boyhood, and during his apprenticeship as engineer, gave him his view as to what knowledge is of most worth.

III

ALREADY, in the foregoing sketch, I have indicated the direction in which lie the criticisms that I should venture to suggest regarding Spencer's educational theories.

First and most notable is the criticism of the facts themselves. Spencer's educational theory is a generalization from the experience of a single individual. This generalization is supported by arguments whose genuine value, as true indications of how the education of men in general should be guided, I do not question, so long as you recognize that these arguments refer to certain aspects only of human life, and to certain problems only of human training. These aspects and

problems are indeed important. That the sciences must occupy an important part, henceforth, in the curriculum, we all now recognize. Spencer's plea for individualism in education, his respect for the rights and the interests of the individual child, is also deeply and permanently significant. But the true lesson of Spencer's experience is, as I have said, wider than he himself recognizes. The principle which he illustrates is the principle that each individual deserves to have his own chance for sound training. But for that very reason people who are not of Spencer's type may need a training widely different from that of Spencer.

Secondly, however, as to the educational principles which I should be disposed to oppose to Spencer's principles, they are these. The purpose of training a man is, on the whole this: We want to fit him to take a definite

place, as an individual, in human society. Now an individual man needs, not only a generalized knowledge of the laws of the physical world and of human nature, but an interest in and a power to co-operate with individual human beings. The limitation of any form of scientific training is that, however carefully it may be founded upon the observation of facts, it terminates in a knowledge of general principles. Now general principles, as such, refer to the laws of things, and not to individual truths. But in real life we have to deal with the individual man, with this friend or neighbor, with the personal duty, with the appreciation of this task, this human affection, this work of art, this relation to humanity or to God. Hence the place in human training which is occupied by whatever helps us, not merely to understand psychology, but to love our neighbor;

not merely to comprehend sociological principles, but to be loyal to this community; not merely to be abstract critics of art but to enjoy this poem, or this song, to admire this hero, to estimate this personal character, to bear this personal burden, to endure this affliction, to be patient under this trial. Now one great purpose of the humanities in education is to open our eyes to truths which cannot be expressed in abstract form, but which can only be appreciated through a direct enjoyment of human life, as it gets portrayed in history, in literature, and in art.

Where, as in Spencer's own case, just such training was, in large part, from the very nature of the man himself, unassimilable, the result is one which our philosopher's "Autobiography" now emphasizes with classic perfection. A lover of humanity in

the abstract, Spencer was peculiarly destitute of any large power to appreciate individuals. He was, of course, not wholly destitute of this power. How could a man of his calibre have failed altogether of this common privilege of mankind? But he certainly was not what he would have been had his nature been fitted for a higher education in the appreciation of individuality, and had he then received such education. In his "Autobiography" a few of his friends appear to have been to him very genuine individuals; and to them he was nobly loyal. So it was with his father, and, to a less degree, with John Stuart Mill, with Huxley, with George Eliot. But Spencer's hopeless inability to understand his critics, to enter into profitable controversy, to read an author with whose principles he felt any decided disagreement, to learn from his fellows in any

adequate measure, — all this was the result of the temperament which limited him to studies such as dealt mainly in generalities. This was why history, which deals so largely with the individual, was in such a vast range of its human interest a sealed book to him. It would be sad indeed if all other men could be reduced through any system of training to the same degree of poverty in their appreciation of individuality.

Thirdly, to repeat an objection which has often been made, Spencer, in his essay upon “What knowledge is most worth,” obviously speaks as if he failed to distinguish between the technical worth which an applied science has for any of the tasks of humanity, and the personal worth which the same science may have for the student who can never get the expertness needed in order to apply his knowledge. Chem-

istry is needed in a thousand arts; but how far will the boy who performs elementary chemical experiments thereby get on the way towards becoming a chemical technologist? The value which the elementary study of chemistry has for a particular boy may be very great indeed; but you cannot measure that value by laying stress upon the importance of the applications of chemistry in the arts. For the successfully studious boy himself the value of this science, so far as his early work goes, will lie rather in the orderly habits of observation, of thinking, of conduct, and of self-criticism which he acquires, and also, very largely, in the intrinsic interest and beauty of the knowledge of natural law which he gets as he works. But just such power and life he might also gain from quite different studies, were they equally well pursued. You there-

fore cannot judge the value of his mental processes by insisting that, without chemistry, the arts of modern life would cease. Yet when Spencer tells us that our life depends upon natural conditions, and that *therefore* we must study nature, in order to win control of the arts of self-preservation, he surely seems to confound the possible technological value of an applied science with the value of the rudiments of that science to the learner. The tyro acquires elementary learning for the sake of what it can rightly mean to him. Only the expert wisely applies his knowledge; and the expert, in the modern world, comes to be farther and farther removed from the tyro. The result is well seen in the case of physiological knowledge. Practical instruction in hygiene, with enough elementary physiology to make that instruction living, is indeed highly

valuable in its place. But how limited that place at best is, in view of the problems which the care of health, not only in one's own case, but in the case of one's family and dependents, soon brings to the mature man! When these harder problems arise, our rudimentary physiology may prove merely mischievous, unless we know when to consult experts. Spencer himself, in view of his obstinate self-confidence, would probably have done better as an invalid if he had had less of the physiological knowledge which he misused in diagnosing, and probably too in treating, his malady. The lesson is that the young learner, whatever he is to gain from science, must certainly not be encouraged to regard his first crude generalizations as in themselves constituting the acquisition of a mastery over the arts of living. If he does so regard them, he may acquire Spen-

cer's own incapacity for taking advice when he might wisely do so. One good result of elementary study, if it is rightly guided, ought to be a high regard for expert opinion, — a regard which Spencer always lacked. As his work in his generation depended upon lacking such regard, we ourselves may rejoice, in his case, in the result; but may we escape the fate of having *all* children brought up in like fashion!

The worth of elementary science for the learner cannot be measured, then, in terms of the worth of applied science for the arts; and in so far as Spencer reasons as if this were possible, his argument is idle. To say this is in no wise to belittle the true value of elementary training in natural science, — a value which is nowadays, for the most part, quite otherwise estimated.

Finally, as to the moral training through the “discipline of conse-

quences," Spencer himself, in his frequent reflections in later years, upon the unteachableness of most men regarding very notable personal and social ills and evil tendencies, has furnished sufficient ground for making us see the limitations of that method. There are certain things which we learn best through reflecting upon the consequences of our own deeds. The privilege of making our own blunders, and of learning thereby, is, in respect of such matters, very precious. But there are other respects in which we learn best through imitation, obedience, and whatever else does not leave us to ourselves, but wisely informs us with tendencies to action which we could never have invented if left to ourselves. In general, loyalty—the essence of orderly social morality—is in most of us, in case we attain to loyalty at all, the result rather of an early "heteronomy"

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of the will, which can only later reach "autonomy." The young Spencer's cool obstinacy and quiet good nature are not the heritage of every child. And yet there are some leaders of men who, with other moral training than his, have attained, after all, to much loftier ideals than he ever knew. He avoided anarchism of all sorts. But the "discipline of consequences" never made him exactly a hero, or a saint.

Let us honor him for what he was. But let us be glad that he is not the trainer of our children.

REMINISCENCES
OF
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CARLYLE, the most graphic of literary portrait painters, has somewhere observed that he never could thoroughly understand the character of a man till he had seen some kind of a portrait of him. Herbert Spencer was no recluse. For many years he might daily have been noticed walking in the parks and on the streets of the west end of London. He was a familiar figure in certain sections of London society. And he might not unfrequently have been observed at theatres, in concert halls, or (much more rarely) at public gatherings.

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He was above the average height, — about five feet nine or ten, — and had not the upright, unbending, and yet elastic carriage of a Gladstone, but rather an easy, good-natured swing, which answered well to his character, though that too was unyielding in matters of principle. The head was large, reminding one of Gladstone, Carlyle, and Owen, and the forehead was broad, but not as high as one would expect in a great philosopher. His hair was black, but his light-blue eyes entitled him to be called a blonde. The nose was aquiline and strong; the upper lip (inherited from his mother) was long and gave his face an expression at once of honesty and also of a certain commonplaceness that overlay his originality. The passionless thin lips told of a total absence of sensuality, and the light eyes betrayed a lack of emotional depth. Neither the chin nor the lower

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jaw revealed exceptional strength; and, in fact, though he showed no want of firmness in life, and never yielded in any struggle, he possessed none of the dubious qualities so often associated with an abnormal development of the jaw and the muscles of the neck. The tinge of color on the cheek bones spoke of an incorruptness of nature; and be it noted in passing that he paled when he was angry, as formidable men are said to do.

In all probability he inherited (so far as he did inherit) his originality from his father, who was the author of an esteemed work on "Inventional Geometry," and also of a new system of shorthand. W. G. Spencer was remarkable for his inventiveness in small contrivances; indeed, according to his son, he wholly devoted himself to such things in his later years and let larger matters go by the board. The son inherited his

father's inventiveness (though he would not admit it), and he abounded in mechanical devices; but he never sacrificed principles to details. From the same source the author of "Social Statics" derived the stuff that goes to make a rebel in a good sense, which was the basis of his character. The father is described in the Rev. T. Mozley's "Reminiscences" in a passage that was shown to a colonial Premier. "A nonconformist!" he exclaimed when he had read it. Spencer was a nonconformist in the widest sense to the end of his days. He was against government of all sorts, because he was himself fully self-governed and habitually self-sufficing. He long acted on the principles expounded in his "Manners and Fashions." He at first went out to dinner in a frock coat, which he at length discarded in favor of a swallow-tail, but he always refused to wear a

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white necktie; those who had invited him, he said, must take him as he chose to come. When the Czar Alexander II. visited London, he expressed to Lord Derby, then Foreign Minister, a wish to meet the most distinguished savants. Lady Derby accordingly invited, among others, Spencer, Huxley, and Tyndall. Each dealt with the invitation in a characteristic manner. Huxley considered that, as a representative of scientific societies, he might properly appear in the regulation costume; Tyndall went in ordinary evening dress, and was said to have looked extremely uncomfortable; while Spencer at first declined to go on the pretext that he had no court dress, and when Lady Derby hoped that he would come dressed as he liked, he decided not to go at all.

From his father the young Herbert Spencer received virtually the whole

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of his education. An American correspondent elicited from W. G. Spencer some particulars of his method. It was the method afterwards recommended by the author of "Education: Intellectual, Moral, and Physical." His son was taught from objects, not from books. His first lessons were on the laws and properties of external things. He was not allowed to open a book on any subject that was to be studied until he had been taught its principles by oral and ocular demonstration. He had then no errors to unlearn, and he was made to see things as they were, not through a mist of words. It is further stated that young Spencer passed several years under the roof of his uncle, who was an Anglican incumbent near Bath. What he learned from the Rev. Thomas Spencer it is difficult to discover. He had the "little Latin and less Greek" of the dramatist, and

he always derided classical learning. His introductory chapter on education makes light of it, and his essay on style has an unflattering comparison (purposely barbed, as he afterwards admitted) between the ghost stories that fill a servant girl's head and the ancient myths that fill a modern classic's. Where he picked up his own highly Latinized style it is not easy to make out. The uncle was no pedant, but a man of liberal sympathies and philanthropic activities. Spencer's education, in so far as it was received from others, must have stopped short at the time when he left his father's instruction.

His objective and mathematical education largely determined his adoption of the profession of a civil engineer. He had a pronounced contempt for one-sided capacities, and he thought that an able man should be capable of

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doing anything. He would himself have been distinguished in almost any pursuit. He had an inexhaustible faculty of developing, *a priori* and *a posteriori*, inductive and deductive arguments in support of any imaginable proposition, and as a *nisi prius* advocate he would have been unapproachable. He might have been a professional inventor and anticipated Edison. His water colors showed a promising artistic gift, and having a bass voice of good timbre, he sang in part-music. From the last-named accomplishment it may be inferred that his striking essay on "The Origin and Function of Music" was no accident, nor was it (as Emerson ungenerously and untruly said of all his writings) the work of a "stock-writer who could write equally well on all subjects."

A local circumstance strengthened his determination for engineering and

gave it a specific direction. Derby was then, as now, the headquarters of the Midland Railway, and it was rather to the mechanical branch of his profession that he applied himself. A pamphlet on the great gauge controversy brought him into notice. But he was one of Nature's engineers. His constructive faculties were of the first order. He surveyed a science as a geologist surveys the lie of a country. He laid out a subject like a surveyor. His arguments have the effect of a mathematical demonstration, and yet they build up a structure imposing by its symmetry. He once had occasion to draw up a model of the analytical treatment of a department of Sociology. He chose the Ecclesiastical, and in a few minutes he tabulated all the ramifications of the subject in a manner that even he could hardly have improved upon. Mill says that Bentham's disciples learned from

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the master the art of breaking up a subject into its constituent parts. Spencer's assistants learned from him the more difficult art of building up the disintegrated elements into an organic whole.

HIS CALL

But he had a still more imperious vocation. His father's and his uncle's examples (had examples been needed) pointed him to authorship, and while he was still an engineer he published several papers in the "Civil Engineer's Journal." A series on "The Proper Sphere of Government" more plainly revealed his true calling and attracted the notice of James Wilson. Men lately living remembered the hatter of Hawick, who resembled Socrates in being found more frequently in the market-place than in his shop. Passing through Hawick in 1867, Disraeli

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described him to the delighted Hawickites as "a very remarkable man." He was sufficiently remarkable to get himself elected a member of Parliament, where his financial capacity was so conspicuous that he was appointed a member of the Council of the Governor-General of India. In 1848 he was proprietor and editor of the "Economist," and on that now eminent weekly Spencer served as sub-editor for fully three years, from 1848 to 1852. He had already decided to abandon his over-crowded profession and (as he mentioned to myself) was on the point of emigrating to the land of promise in New Zealand, where, like Alfred Domett, Browning's "Waring," who emigrated in those years, he might have risen to reputation as a Philo-Maori Premier. The small new appointment kept him in England and not only settled his future, but (may

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we not say?) determined the future of English philosophy. While he was sub-editor of the "Economist" he composed "Social Statics." "Social Statics" led to his being invited to contribute to the new "Westminster Review," for eight or ten years one of the most brilliant periodicals ever published. James Wilson, then the editor of this review, did not make Spencer a philosopher, but he made his career as a philosopher practicable.

HIS HEALTH

Spencer had one qualification that has sometimes been thought indispensable for a literary career or, at least, an inevitable accompaniment of it. Like Carlyle, Comte, Mill, and Darwin, he was a life-long valetudinarian. He was the only surviving child of his parents, and he was long so delicate that they had little hope of rearing him. Con-

stitutional feebleness may have predisposed him to "break down," as he always phrased it, in his thirty-sixth year. Yet every day hundreds who have no constitutional infirmity break down as he did. The collapse may be due to a variety of causes—overwork or overstrain, excitement, disappointment or grief, a poor diet, or disease (such as pleurisy) in combination with any of these. Spencer always asserted that his own breakdown was not due to overwork. His account of the matter was that, living alone in lodgings in 1855, being a member of no club, and having few acquaintances, he grew to be so preoccupied with the task he had then in hand as to be unable to shake it off. It rose with him in the morning; it walked about with him; worst of all, it went to bed with him. If we remember that that task was the building up of a new science of psy-

chology, not on the old foundations, but drawn almost wholly from his own entrails, so to speak, we shall realize somewhat of its engrossing nature and be less surprised at the collapse.

It was an ordinary case, without complications. Some obscure portion of the brain — probably the higher centres, concerned in ratiocination and reflection — had been overstrained and had given way, with a resulting incurable lesion. At no time, he said, had he any pains, and I think he escaped most of the more disagreeable symptoms of cerebral congestion; and though he suffered all along from chronic insomnia, there were none of the “horrors of the night” that often accompany nervous derangement. His pulse was either slow and strong, or else quick and feeble. “Doctors,” he said, “knew nothing about it”; but he still consulted them at times and took their

prescriptions, though from both theory and personal experience he must have known more of his own case than all of them together. At one time he regularly took tonics, and he was always experimenting with new ones; but I imagine that, with most others in like cases, he found it was best to use medicines only in emergencies.

After his first breakdown, he was disabled for a whole year and a half. None but those who have gone through a similar experience can imagine the misery of the situation. All day he wandered about aimlessly in town or country, unable to write, unable even to read. He did not then know—he can hardly have dreamed, and none of his friends imagined—what a career lay before him, but he must have been conscious of possessing powers that would carry him to eminence. And now it might be that his future was

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completely wrecked in the wreck of his health. Neither then nor afterwards did he receive much sympathy. He "looked well," was physically vigorous, and bore no visible traces of the inward ruin. His acquaintances spoke of his disablement with a smile. But he never complained and patiently awaited the self-restoration brought so often by Nature, which is by no means always "careless of the single life." His faith was rewarded. Growing tired of his idleness, he resumed work, and to his joy and wonder discovered, as George Sand found with her eyes, and others have found with their heads, that his strength had insensibly come back. But it was not unimpaired. The liability to break down remained, and the least over-exertion was followed by a relapse. He then threw up all his engagements, would not even look at a book or read a letter, and hurried

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away to his native Derby, to Brighton, or Tunbridge Wells. There he wandered about, feeling thoroughly bored, doing nothing, talking gladly with any one who offered, and even seeking chance conversation as both physically beneficial and as a means of escaping the obsession of his own thoughts.

In a few weeks he came back to London, if not thoroughly recruited, at least fit to resume work. There was then no delay and no hitch. Without visible effort, but rather with the eagerness of a courser that had been reined in, he took up the thread of his thought at the point where he had dropped it, and the keenest eye would not have discerned any breach of continuity. It was like the weaving of a web of which the warp was his own mental tissue, while the weft was the conscious reflection that tossed the shuttle from side to side. When did he prepare? It

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might perhaps have been said of him, as Sir Walter Scott said of himself, that in one sense he was never occupied with the subject in hand except when he was actually engaged on it, and in another that it was never out of his mind. His practice (as may be judged from an advice he gave to another) was to break into a little run whenever he fell into a train of thought; but this must have been a precaution for his ailing times. When met with on the street, of an afternoon, he was obviously reflecting. Still more visibly self-absorbed was he when seen in Kensington Gardens (which were adjacent both to his place of residence and to his work-room) between nine and ten in the forenoon. Evidently the stream of thought was flowing smoothly, for he had always a cheerful greeting for a passing acquaintance. He complied with Emerson's test of the geniality

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of genius. Very different was Carlyle when casually encountered in Piccadilly, the face lighted up and the eyes blazed, the now rickety body staggering under the impetus of the inward vision, like a crazy ship driven on by a too powerful engine. When one thinks of these men and of others as great, or only less great — of Gladstone and Lowe and Salisbury, of George Eliot and Lewes, of Fitzjames Stephen, James Spedding, and Henry Irving — one is tempted to believe that no small part of the world's best thought and feeling is conceived or generated on the noisy streets of the world's metropolis.

Whence did Spencer derive the materials for the vast structure which he reared? To no question is the answer more unsatisfactory. Even those who were in daily intercourse with him for many years would answer with hesitation. It may be confidently asserted

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that he at no time received systematic instruction in any branch of science. At one time, indeed, he engaged so ardently in the study of microscopy that he impaired his eyesight, and before he was fifty he wore spectacles while he read; but he must have pursued this study under his own direction. It may be doubted if he ever attended a course of scientific lectures. What is more surprising, it may be doubted if he ever read a book on science from end to end. An Edinburgh philosophical writer of rare acumen and rarer humor was ridiculed because he wrote books on philosophy without reading Hamilton's Lectures. Spencer composed his "Social Statics," which is a book on ethics as well as on politics, having read no other ethical treatise than an old and now forgotten work by one Jonathan Dymond, which he was never tired of citing, not quoting, for

even this book he probably had not read through. He produced an original treatise on Psychology, and though he had "glanced" (it was his favorite word) at Reid and Hume, he had prepared himself by reading only what he called "that subtle book," Mansel's "Prolegomena Logicæ." Excepting Carpenter's "Principles of Comparative Physiology," he had possibly not carefully perused a single book on Biology when he wrote his "Principles of Biology"; perhaps it will be considered an error and a misfortune that he hardly read even the "Origin of Species." He composed his "Principles of Sociology" without reading Comte or Tylor, and no one was more astonished than he when Tylor claimed priority in originating the ghost theory on which the Spencerian science of religion is founded; "Primitive Culture" had stood on his shelves for years, but had

stood unopened. He wrote his final treatise on ethics without reading Mill, Kant, Whewell, or any of the recognized authorities on morals, excepting portions of Sidgwick. Where, then, did he find his ideas, and above all, whence did he procure his facts? He *picked up* most of his facts. Spending a good part of every afternoon at the Athenæum Club, he ran through most of the periodicals, reading little in the way of disquisition, but lynx-eyed for every fact that was grist to his mill. Half an hour thus passed was lucrative, so rapid was his assimilation, so orderly his mental arrangement of his acquisitions, and so tenacious his memory for facts that he could connect with an idea; for isolated details or for mere words his memory was weak. At the same institution he habitually met with all the leading savants, many of whom were his intimates. From these, by a

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happy mixture of suggestion and questioning, he extracted all that they knew. At home he pillaged the two or three critical and scientific periodicals he took in. His assistants, especially Dr. Duncan and Dr. Scheppig, supplied him with a mass of sociological materials. From time to time he distributed his cuttings and excerpts in the various drawers of his bureau, which were labelled, respectively, *ASTROGENY*, *GE-OGENY* (at a time when he must still have hoped to overtake the treatment of these sciences), *BIOLOGY*, *PSYCHOLOGY*, *SOCIOLOGY*, and *ETHICS*. Ethics, as a lady remarked who saw the bureau, was at the bottom, but the ready retort was that ethics was the foundation of them all. Lastly, he went everywhere with his eyes open. A walk, an excursion, a ride in a bus or a train, a residence in the country, supplied him with fresh facts. One of his most substan-

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tial essays — that on “Specialized Administration” — sets out with a wallet of paradoxes gathered out of doors. He was no dreamer; his curiosity was ever awake, and he was continually directing the attention of his companion to some notable phenomenon, obvious when pointed out, but until then seen by his eyes alone.

HIS IDEAS

A prepared mind assimilates ideas more easily than facts, and most of Spencer's ideas, like his facts, were picked up. He was at no time a great reader, and he could never have won Plato's encomium on Aristotle. Assuredly he did not belong to the class of over-read men, such as Cudworth and Huet, Bishop of Avranches, Sir William Hamilton and Principal Lee, Gervinus and Theodore Parker — “Daniel Lamberts of learning,” as he

would himself have said, in whom an incubus of erudition had at length smothered the thinking faculty. Rather, he belonged to the more select class of under-read philosophers, like Descartes and Hobbes, Spinoza and Kant, William George Ward and Thomas Hill Green, in whom an imperious power of origination makes the absorption of foreign ideas as impracticable as it is superfluous. A long list of obligations to his contemporaries — far longer than he has avowed or would have acknowledged — can be sheeted home to Spencer, but they were acquired by the smallest possible expenditure of personal labor. He owes something to Emerson, and he had perhaps read a dozen pages of the Sage of Concord. He owes much more to Carlyle, but he had never read fifty pages of the Prophet of Chelsea. The sight of Dickens's library astonished and almost

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pained Lewes; it consisted mainly of presentation copies. Spencer's library was not quite as poverty-stricken, but it was wofully deficient in the class of books that might have been expected to be found in it. There was not a single work on philosophy other than those sent to him; if I rightly remember, no book of Hobbes, Locke, Reid, Hume, Kant, or Hamilton. There were even few books in science; there were no histories or biographies, and in the way of pure (or impure) literature there was only a much prized copy of "Tristram Shandy." It might be supposed that he borrowed books from circulating libraries, but it is doubtful if he was ever connected with a circulating library till, late in the 60's, he joined the London Library for the sake of his assistants. And even then, he never, or hardly ever, took out a book. In fact, he was not a reader at all, in the

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ordinary sense of the word, but only a gleaner. He did not "tear the entrails out of books," like Sir William Hamilton; he left them, for the most part, severely alone.

His method of composition has been elsewhere described (by the present writer), but it is too characteristic to be wholly admitted. His earlier books and essays were all written with his own hand. When he entered on the composition of his system in 1860, he employed an amanuensis. He had but one object in so doing—to economize his strength. The beneficent typograph (boon of all invalids and perhaps first used in England by a chronic invalid—Professor George Darwin) had not been invented, and he found the drudgery of quill-driving disabling. The earlier part of "First Principles" was written one autumn by the shores of a Highland loch. He rowed in a



boat for a quarter of an hour to make the blood flow freely through the brain, and for an equal space he dictated highly finished matter that came as freely. In London, when he was cerebrally shaken but physically robust, he preferred to go to a racquet court. One of his most abstruse efforts of ratiocination — the admirable exposition of Transfigured Realism in his “Principles of Psychology” — was dictated in the intervals of a game at racquet in a court at Pentonville in the north of London. He remarked at the time that readers would be surprised to see an illustrative woodcut in the heart of a metaphysical discussion; they would have been still more surprised had they known of the non-philosophical surroundings amid which that high argument was elaborated.

Mr. Spencer worked through the morning in his rooms at 2 Leinster

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Place, Bayswater. Arriving punctually at ten, he proceeded to despatch his correspondence. Tyndall once expressed his astonishment at constantly receiving letters from perfect strangers, requesting to be informed on all manner of scientific topics; such letters must at least have been more agreeable to read than the missives that periodically consigned the infidel (as others consigned Carlyle and Renan) to perdition. Spencer was too remote from the average intelligence to excite the wrath of the damnation-monger, and he was too high above the struggling crowd to be made a father-confessor by souls in pain, as were Kingsley, Carlyle, and Newman. But he was continually applied to by men occupying public positions who were perplexed by social problems. Australians sought his counsel on the employment of black labor in the canefields, and, uncompro-

mising Radical as he long was, he was so far influenced by evolutionist principles as to believe that Australia, like Europe, might have to pass through a period of mitigated slavery. New Zealanders desired his advice on the conflict between individualism and socialism, of which these islands are now the chief theatre. Letters of a personal character were rare. One such stands out in memory. The undergraduates of the oldest Scottish University had nominated him as their Lord Rector—a post once adorned by Mill, Stanley, and Froude. It is understood that he would have been elected; but he dreaded the excitement of delivering the customary address. The Senate of the University then took advantage of the occasion to offer him, in company with Professor Jowett, the honorary degree of Doctor of Laws. The remarkable letter in which he refused

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to accept the distinction is worthy of being placed beside the more indignant letter that Samuel Johnson addressed to Lord Chesterfield. Had such a degree, he wrote, been offered to him when he was young and struggling for recognition, it would have been welcomed. Now that he had won a secure position absolutely without aid from others (for even his friends had been shy of reviewing his books), he no longer needed it, and he was indifferent to an honor that he would not use. The *Senatus Academicus* might have replied that even its own older members—philosophically trained men like the head of the University, Principal Tulloch, and its most brilliant professor, James Frederick Ferrier—had been repelled by the novelty of his ideas and his forbidding terminology. A new generation had to grow up that would appreciate him

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at his true value, and crown him with very different laurels. Degrees, diplomas, candidatures, and presidencies came afterwards knocking at his door, and he put them all aside without ostentation and without a pang.

His correspondence cleared out of the way, fully two and a half hours remained for the morning's work. He used to say that he found reading and reflecting about equally hard. To an observer, reading seemed to be much the harder. As he read, a look of tense and almost painful concentration came over his face, while the act of dictation betrayed scarcely an effort. Smoking half of a cigar to promote the mental flow (the cigar carefully cut in two to prevent excess), his voice never rising or falling, the eye faintly lit up with the thinker's far-away look, but never burning with the prophet's flame, without changes of physiognomy or a single

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gesture, and (unlike Goethe, Cousin, or Helos) always seated, he passionlessly unrolled the panorama of his thought. There was no battle. Nothing recalled Paul Janet's description of Victor Cousin, "seeking with pain and labor, stumbling and groping, vexing himself, and finding nothing." Never was he baffled. Never had he to cast his work aside, as even Mill had to do, till a process of "unconscious cerebration" removed the obstacles. He never reconstructed his sentences, or began again, or patched, or threw out, or greatly added. The tragi-comedy of the thinker's life, when he digs in his brain for thoughts and finds it empty, was unknown to him. His mind was always full to overflowing. At one time he had himself read to, and the writer selected the vivid history of "The Anglo-Saxons in England," written by Tennyson's "latter

day Luther," John Mitchell Kemble. But he could not endure more than a paragraph or at the most two. The amount of thought the reading excited in him demanded utterance, and he proceeded to dictate matter which he considered valuable enough to be preserved. In one of the few passages in his writings that reveal an intuitive insight into human nature he speaks of individuals whose thoughts come in single file, and who have in consequence to retire to the quiet bypaths of life. His own thoughts came in platoons, and the difficulty was to marshal them. His style of thinking, like his way of life, has been described as mechanical. If so, it was a very deep sort of mechanism. To one who through many a forenoon saw limb after limb and organ after organ of some scientific structure appear and take shape, till all at length grew to-

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gether into a natural whole, it rather seemed to be an organic process that had Nature's own sanction.

At the end of a month he subjected the manuscript to a careful revision, generally condensing, putting a word for a phrase and an apter word or phrase for one less apt, but otherwise altering little. He then carried the MS. to the printing office, having too little confidence in a government institution to intrust it to the post-office. He revised it in the first proof, in the revise, and in the final revise; and in all three it was read by an assistant, whose suggestions, not often important, were respectfully heeded. So much care did he lavish on all his work.

Needless to say, his conversation was interesting as few men's is. A distinguished American writer was traveling with him in the English Midlands early in the 70's, but left him abruptly,

for a melancholy reason that was afterwards discovered. Spencer imagined, in his modesty, that it was because his American acquaintance was disappointed with the intercourse he had with the philosopher. Disappointment in some cases was quite possible. His thought had certain limitations and his manner certain hardnesses that repelled minds of a particular order, as I think they at one time repelled Mr. Gladstone; but when these peculiarities were allowed for (as Gladstone came to do), or, it may be, sympathized with, disappointment was out of the question. His wealth of scientific knowledge and his inexhaustible abundance of new ideas made his conversation a source of rare instruction and unfailing delight. In point of mere style it was often enough *décousue*. He would plunge into a long sentence without knowing how it was to end, pile up qualifications

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and parentheses, diverge on this side and that, leap over all obstacles, and finally arrive at his goal, not that he had finished what he had to say, but politeness bade him stop. He was at his best with single interlocutors, especially with one of his peers, like Lewes or Bain. His superiority was then unmistakable. He had none of Huxley's wit or ready sword play, though his capacity for devising all manner of arguments in support of any position he might take up made him a formidable debater. But what struck one most on such occasions was his sagacity. His thought was usually deeper and always wider than that of his interlocutor. Considerations the other had overlooked or facts unknown to him were brought to light and seemed to change the whole complexion of the matter in hand. With younger men he was often eager and impetuous;

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with his *æquales* he was calm, grave, and measured. Had he been fortunate enough to find a judicious Boswell, he might figure in the eyes of posterity as advantageously as the Sage of Weimar in Eckermann's hypnotic restorations,¹ or the Prophet of Chelsea in Sir Charles Gavan Duffy's more literal transcripts, or the old Scottish rabbi who held with Professor Knight those high metaphysical and theological "Colloquia Peripatetica" on the sands at Elie.

Like Henry VIII, Spencer knew how to say and do the right thing with men, but he was not equally felicitous with women. An accomplished lady, once well known in literature, used to say that always, when she was talking with him, she "felt as if she were being rubbed the wrong way." Perhaps it

¹ See in the "Conversations with Goethe" Eckermann's curious account of the trance-like mood into which he wrought himself before he could recall Goethe's talk. Did it affect the accuracy of the report?

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is true that in his earlier and middle years, when he had taken up with unpopular opinions and was tabooed in literature in company with other scientific heretics of the day, he expected to meet with opposition, especially from women, and armed himself in advance. A man does not nurse such a humor without being the worse for it. But it doubtless passed away as opposition grew rarer or more respectful, and as his views were received with greater sympathy. Still, it remains a fact that, like Fitzjames Stephen, who had "never known a woman that was worth talking to for five minutes together," he was too purely masculine to do full justice to the other sex. That he knew George Eliot and admired her was due probably to the fact that he never regarded the great novelist as a normal woman.

Sainte-Beuve gives it as the key to La

Rochefoucauld that the cynical moralist was never able to put his whole personality into anything that he did in practical life. No such remark could be made of Spencer. Whether it was work or play, he was *totus in illo*. He cultivated all sorts of indoor and out-of-door games as safety-valves. Into every one of them he threw himself as if he had no other pursuit. He played billiards through many a long dull evening when he could not read and dared not reflect. When lawn tennis came in, he took to it eagerly. He was always ready to join in or get up a picnic, believing that the loss of time was amply compensated by the gain in energy. In a riverside excursion, boating on the Thames or wandering through the grounds at Rosherville or Hampton Court, he was delightful, never apparently thinking of his work or himself, yet full of ideas and abounding in ob-

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servations, and with many a hearty laugh at each light joke. In the same lovely scenes I have noticed a distinguished savant (personally among the best of men, but with this single failing) forge slightly ahead of his companion, his cloak thrown over his shoulder, his head bent, and a look of mock-profound reflection on his face, as if he were disentangling some knotty problem, while his companion hardly knew whether to laugh or be angry. Not such was Spencer.

He was, of course, a personage in London society, and a hostess was sometimes more enthusiastic than discriminating. One lady addressed him as "Dear Mr. SPENCER HERBERT"; another exchanged her personality with his, and absent-mindedly subscribed her letter of invitation: "Yours truly, HERBERT SPENCER." He on his side was often playful in reply. He did not

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go to "at homes" or receptions, the hours of such gatherings being usually later than he cared to stay out of bed; but about three evenings a week he dined out, generally refusing invitations for two successive evenings.

Much of his leisure time was passed at the Athenæum Club. Every afternoon he walked across Kensington Gardens, Hyde Park, and the Green Park to the palatial building in Pall Mall. There he met with most of his friends and sought the distraction of conversation. There he played billiards almost daily, and there, when he had no engagement, he dined. There the principal of a Scottish university, whose biography has been attractively written by Mrs. Oliphant, saw "the great philosopher S. gloating over his dinner with unphilosophic eyes, and afterwards moving about among his friends with the air of a man of the

world acquired too late in life." That is deadly, and it is not even half true. The jolly principal, who "moved about" so very like a god in the little university town where he dwelt, looked vastly more as if he thoroughly enjoyed a good dinner than ever the dyspeptic philosopher can have done. "An Epicurean in theory, and a Stoic in practice" was the account given, by no means of Principal Tulloch, but of Herbert Spencer, by one of Tulloch's colleagues and friends,—the late amiable Professor Spencer Baynes.

Though he liked active sports, he took kindly to the recreation *par excellence* of the meditative man, and almost every autumn he went to Perthshire or Argyleshire for a month's trout or salmon fishing. He disapproved of field sports on the score of their cruelty, but defended angling because fishes are cold-blooded animals.

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It is difficult to perceive where the difference lies. No one who has seen a fish dying in the bottom of a boat, watched its convulsive struggles, and observed the bright hues fade, can doubt that its death-agony is only less sore (if it is less sore) than that of the mammal. That a difference of degree at length makes a difference of kind is, it is true, the very soul of evolution.

Such was one of the greatest thinkers of the nineteenth century as he lived and moved among his fellows—his bodily appearance and ways of life, his work and his play, his individual effort and his social intercourse. “How rare” and (in spite of half a century’s impaired health) “how fortunate!” may we not say with John Burroughs of Emerson? And surely we may add: “How serene, how inspiring!” Once and again the Transcendentalist

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descended into the arena to do battle for a cause—for the expatriated Indians and the unemancipated negroes; but no cloud shadowed his unalterable calm. Not once or twice, but many times, the Evolutionist had to contend for convictions that were dear to him as life; but a single occasion excepted, his composure was ever unruffled, and never once did he forget the amenities that high thought imposes on its votaries. He was never trivial. He once rebuked a gossiping questioner by a quotation from Shakspeare about “the meanness of common knowledge.” He seldom expressed a disparaging opinion about either individuals or books. Hostile judgments had to be wrung out of him. “What did he think of a celebrated scholar whom he met with in Egypt?” He at last confessed that he was repelled by the other’s “sceptical habit of mind.” It was the Agnostic

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that was the believer and the Christian minister who was the unbeliever. He practised, as he constantly preached, the social duty of forgiveness. He had broken with James Martineau because the Unitarian had been guilty of misrepresenting his views in an article published in the old "National Review" ("misrepresentation" was one of his key words), but in after years he made up this quarrel with his really gentle critic; and, excepting that he used to condemn Martineau's heteroclitite style, there was never a word of disparagement. He was at all times (with rare exceptions) heartily appreciative of the work and thought of others. The Congregationalists were pleased with his impartial eulogy of a philosophical work written by a professor in one of their colleges, and the author of a treatise on ethics wrote (not to him) that his few laudatory

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lines had "strengthened the bond betwixt disciple and master." In his later years especially he took pleasure in practising that gospel of encouragement preached by an English Nonconformist and in distributing words of praise to younger writers. His verdict was eagerly sought and much prized. He was animated by nothing less than a passion of justice, and in all business transactions he was punctual and exact. But he was also generous and charitable and gave almost beyond his means where giving was needed. Where aid of a practical kind was required, he was unweariable; and a hundred anecdotes of his helpfulness could be related. "They tell me thou art great, Walter," said the uncle of Scott to the Wizard of the North; "but thou wast always good." Herbert Spencer had little of Scott's native sweetness of disposition, but

HERBERT SPENCER

he went far towards realizing the "pious wish" expressed in Schiller's distich by uniting, in no common measure, essential goodness with true greatness.



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