DARWINISM AND SOCIOLOGY.[1]

Summary.—This paper seeks to supply evidence in the direction of showing (*a*) that it is illegitimate to deduce the nature and degree of the innate mental capacities of a people or person from the stage of culture which either occupies; (*b*) that all peoples and (soundly-born) individuals appear to be equally adapted by nature to the highest level of culture existing to-day; (*c*) that (*a*) and (*b*) are explicable by man's essential and unique dependence on socio-historically developed and preserved material and other inventions and discoveries, and by the fact that all species are virtually stable and uniform so far as innate capacities and short periods are concerned; (*d*) that if (*a*) to (*c*) be granted, sociology is provided with a virtually constant unit and with a basic explanation of social statics and dynamics; and (*e*) that it is highly desirable that systematic investigations be instituted into the influence of the cultural environment in producing the various individual and collective cultural characteristics and achievements.

DARWIN and his followers, believing that the two factors which accounted for the process of evolution in the animal and vegetable kingdoms were the selection by the environment of spontaneous and acquired structural modifications, tacitly assumed that the laws of human progress were those of animal progression. His *Descent of Man* is crowded with illustrations to this effect. Here are, for instance, some passages culled almost at random :—

> We can see, that in the rudest state of society, the individuals who were the most sagacious, who invented and used the best weapons or traps, and who were best able to defend themselves, would rear the greatest number of offspring. . . . . At the present day, civilised nations are everywhere supplanting barbarous nations, excepting where climate opposes a deadly barrier; and they succeed mainly, though not exclusively, through their arts, which are the product of intellect. It is, therefore, highly probable that with mankind the intellectual faculties have been mainly and gradually perfected through natural selection; and this conclusion is sufficient for our purpose. (p. 128.)
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> If some one man in a tribe, more sagacious than the others, invented a new snare or weapon, or other means of attack or defence, the plainest self-interest, without the assistance of much reasoning power, would prompt the other members to imitate him; and all would thus profit. The habitual practice of each new art must likewise in some slight degree strengthen the intellect. If the new invention were an important one, the tribe would increase in number, spread, and supplant other tribes. In a tribe thus rendered more numerous there would always be a rather greater chance of the birth of other superior and inventive members. If such men left children to inherit their mental superiority, the chance of the birth of still more ingenious members would be somewhat better, and in a very small tribe decidedly better. Even if they left no children, the tribe would still include their blood relations; and

1. A paper read before the Sociological Society, May 19, 1914.

it has been ascertained by agriculturists that by preserving and breeding from the family of an animal, which when slaughtered was found to be valuable, the desired character has been obtained. (p. 129.)

As the reasoning powers and foresight of the members became improved, each man would soon learn that if he aided his fellow men, he would commonly receive aid in return. From this low motive he might acquire the habit of aiding his fellows; and the habit of performing benevolent actions certainly strengthens the feeling of sympathy which gives the first impulse to benevolent actions. Habits, moreover, followed during many generations probably tend to be inherited. (pp. 130-31.)

Human progress is in this manner explained to be due to structural modifications passed on from generation to generation. Accordingly, Darwin encouraged the notion of improving the human race as we improve our cattle: —

With savages, the weak in body or mind are soon eliminated; and those that survive commonly exhibit a vigorous state of health. We civilised men, on the other hand, do our utmost to check the process of elimination; we build asylums for the imbecile, the maimed and the sick; we institute poor-laws; and our medical men exert their utmost skill to save the life of everyone to the last moment. There is reason to believe that vaccination has preserved thousands, who from a weak constitution would formerly have succumbed to small-pox. Thus the weak members of civilised societies propagate their kind. No one who has attended to the breeding of domestic animals will doubt that this must be highly injurious to the race of man. It is surprising how soon a want of care, or care wrongly directed, leads to the degeneration of a domestic race; but, excepting in the case of man himself, hardly anyone is so ignorant as to allow his worst animals to breed. (pp. 133-4.)

On this theme Darwinians have been incessantly enlarging. Professor Ridgeway, for instance, contends that "what is true of master races in relation to inferior races, is equally true of individuals in each community. The middle and upper classes are in the main sprung from ancestors with better physique, courage and morale" (*Proceedings of the British Association*, 1908, p. 845). And from this he characteristically concludes: "The legislator must not merely look to improved housing of the poor and the development of the physique of city populations. He must, as far as possible, conform to the principles of the stockbreeder, whose object is to rear the finest horses, cattle or sheep. . . . The legislator, on his part, ought similarly to favour the increase of the best elements in the State, and on the other hand discourage the multiplication of the worst" (*ibid.*, p. 846). So one of Darwin's sons: "If we tell the breeders of cattle that their knowledge of the laws of heredity is so imperfect that it is useless for them either to attempt or to avoid breeding from their worst stocks or to try only to breed from their best stocks, why they would simply laugh at us; and the number of those who now see matters as regards

mankind in the same light is steadily increasing" (Major Leonard Darwin, in *Problems in Eugenics*, 1912, p. 5). Or take a typical passage from another writer: "Man is an organism—an animal, and the laws of improvement of corn and of race horses hold true for him also. Unless people accept this simple truth and let it influence marriage selection," continues this prophetic author, "human progress will cease" (C. B. Davenport, *Heredity in Relation to Eugenics*, 1912, p. i). The Darwinian point of view, we see, was regarded as embodying a natural law to doubt which was mid-summer madness.

Taking this theory of progress at its face value, we should expect the innumerable cultural differences between peoples to be due to differences in native capacity, and the stages from the Australian aborigines to the English scholar to indicate the real path of the progressive development of the human species. This conclusion was therefore unhesitatingly adopted by Darwin and his followers, and every difference in intelligence, sympathy, and strength of will was referred to disparity in native outfit. Let us hear Darwin:—

> As man is a social animal, it is almost certain that he would inherit a tendency to be faithful to his comrades, and obedient to the leader of his tribe; for these qualities are common to most social animals. He would consequently possess some capacity for self-command. He would from an inherited tendency be willing to defend, in concert with others, his fellow men; and would be ready to aid them in any way, which did not too greatly interfere with his own welfare or his own strong desires (p. 109).

Here obvious cultural factors are ascribed to hereditary influences. Again:

> It is evident, in the first place, that with mankind the instinctive impulses have different degrees of strength; a savage will risk his own life to save that of a member of the same community, but will be wholly indifferent about a stranger: a young and timid mother urged by the maternal instinct will, without a moment's hesitation, run the greatest danger for her own infant, but not for a mere fellow-creature. Nevertheless many a civilised man, or even boy, who never before risked his life for another, but full of courage and sympathy, has disregarded the instinct of self-preservation, and plunged at once into a torrent to save a drowning man, though a stranger. . . . Such actions as the above appear to be the simple result of the greater strength of the social or maternal instincts than that of any other instinct or motive (p. 110).

Such was Darwin's theory of human progress. How far is it borne out by the facts? In a recent article in the *Sociological Review* (Oct., 1913), on "The Mentality of the Australian Aborigines," I endeavoured to show that the Australian native cannot be said to be, so far as the evidence carries us, especially that relating to education, in any assignable way lower than or

different from the European branch of humanity. If this be the case, then—since the uneducated Australian admittedly stands on about the lowest rung of the cultural ladder—the Darwinian interpretation of the relation of culture to culturability is proved to lack any kind of material support in fact. Startling as the conclusion may be that cultural influence alone accounts for culture, it is difficult to imagine how it can be avoided. Should further investigation uphold or strengthen it, Sociology will have calculable and verifiable factors of a universal nature—a scientific unit—for its basis. It is the object of this paper to supply a certain amount of evidence of this character.

(A) *The Senses.* Since the senses occupy an intermediate position between the body and mind it would be, on the Darwinian assumption, reasonable to believe that they are more or less highly developed according to the needs of a people. That considerable innate differences exist was taken for granted, travellers telling marvellous stories of the sensory feats performed by the least civilised peoples. Darwin unambiguously says on this point: "The inferiority of Europeans, in comparison with savages, in eye-sight and other senses, is no doubt the accumulated and transmitted effect of lessened use during many generations" (p. 33). Compare with this statement what three experienced psychologists write:—

> The results of the Cambridge Expedition to the Torres Straits have shown that in acuteness of vision, hearing, smell, etc., these people are not noticeably different from our own. We conclude that the remarkable tales adduced to the contrary by various travellers are to be explained, not by the acuteness of sensation, but by the acuteness of interpretation of primitive peoples. Take the savage into the streets of a busy city, and see what a number of sights and sounds he will neglect because of their meaninglessness to him. Take the sailor whose powers of discerning a ship on the horizon appear to the landsman so extraordinary, and set him to detect micro-organisms in the field of a microscope. Is it then surprising that primitive man should be able to draw inferences, which to the stranger appear marvellous, from the merest specks in the far distance or from the faintest sounds, odours, or tracks in the jungle? Such behaviour serves only to attest the extraordinary powers of observation in primitive man with respect to things which are of use and hence of interest to him. The same powers are shown in the vast number of words he will coin to denote the same object, say a certain tree at different stages of its growth. We conclude, then, that no fundamental difference in powers of sensory acuity, nor, indeed, in sensory discrimination, exists between primitive and civilised communities. (Charles S. Myers, "On the Permanence of Racial Mental Differences," in *Inter-Racial Problems*, ed. by G. Spiller, 1911, p. 74.)

Dr. and Mrs. Seligman, in *The Veddas*, 1911, p. 399, say: "Comparison with the figures obtained in other countries shows that there is little difference between Veddas and other races" in

respect of visual acuity, though they perform feats in this connection which astonish the European visitor.

Professor R. S. Woodworth, who examined the many representatives of primitive peoples brought to the St. Louis Exhibition, concluded: "On the whole, the keenness of the senses seems to be about on a par in the various races of mankind" ("Racial Differences in Mental Traits," in *Science*, Feb. 4, 1910).

We may therefore take it for granted that even in respect of the senses the Darwinian theory of human progress appears inapplicable to the races of man.

(B) *Temperament.* According to Darwin and his followers the observable temperamental differences in races are expressions of innate dispositions. Speaking of races, Darwin says:—

> Their mental characteristics are . . . very distinct; chiefly as it would appear in their emotional, but partly in their intellectual, faculties. Everyone who has had the opportunity of comparison, must have been struck with the contrast between the taciturn, even morose, aborigines of S. America and the light-hearted, talkative negroes. There is a nearly similar contrast between the Malays and the Papuans, who live under the same physical conditions, and are separated from each other only by a narrow space of sea. (pp. 167-68.)

Here again experimental psychologists have been at work, though not so assiduously. Mr. R. R. Marett says on this point:—

> As judged simply by his emotions, man is very much alike everywhere, from China to Peru. They are all there in germ, though different customs and grades of culture tend to bring special types of feelings to the fore. Indeed a certain paradox is to be noted here. The negro, one would naturally say, is in general more emotional than the white man. Yet some experiments conducted by Miss Keller of Chicago on negresses and white women, by means of the test of the effect of emotion on respiration, brought out the former as decidedly the more stolid of the two. And, whatever be thought of the value of such methods of proof, certain it is that the observers of rude races incline to put down most of them as apathetic, when not tuned up to concert-pitch by a dance or other social event. It may well be, then, that it is not the hereditary temperament of the negro, so much as the habit which he shares with other peoples at the same level of culture, of living and acting in a crowd, that accounts for his apparent excitability. But after all, "mafficking" is not unknown in civilised countries. Thus the quest for a race-mark of a mental kind is barren once more. (*Anthropology*, 1912, pp. 91-2.)

And Dr. Myers, Lecturer in Experimental Psychology in the University of Cambridge, whom we have already quoted, states:—

> In temperament we meet with just the same variations in primitive as in civilised communities. In every primitive society is to be found the flighty, the staid, the energetic, the indolent, the cheerful, the morose, the even, the hot-tempered, the unthinking, the philosophical individual. (*Op. cit.*, p. 74.)

So far as direct evidence has been collected, it leans therefore in the direction of pointing to the equality of the temperamental outfit in different races, the actual divergences being attributable to cultural circumstances. When one notes, for example, how French English people become who settle in France, and how English French people turn who take up their abode in England, especially the second and following generations, one is bound to ask for the most unexceptionable evidence before admitting that differences in temperament are inborn. In this connection it should be worth while studying the temperaments of those who were adopted as infants by men or women of a different class and living in a different part of the world to the parents who are never communicated with. The Jews, settled in different countries, offer the most striking exemplification of race adaptability, particularly where they do not live segregated socially, spiritually, and philologically.

Whilst corroborative evidence for the culture theory of temperament is desirable, there is little doubt in regard to the results of new investigations.

(C) *Variability.* Dr. Woodworth says on this point: "The dead level of intelligence which is sometimes supposed to obtain among lower races is not borne out by psychological tests, since individual differences are abundantly found among all races, and, indeed, the variability of different groups seems, from these tests, to be about on a par." (*Op. cit.*, p. 185.) The assumption of the existence of differences in variability receives, therefore, no support from experimental psychology.

(D) *Inhibition of Impulses, Concentration, and Originality.* Here also, so far as concentration is concerned, Prof. Woodworth's valuable investigations suggest that "if psychological tests are put in such form as to appeal to the interests of the primitive man, he can be relied upon for sustained attention." (*Op. cit.*, p. 180.)

We will further quote on these points, three short passages from Professor F. Boas' *The Mind of Primitive Man*, 1911, expressing at the same time regret that lack of space forbids reproducing his apposite and convincing illustrations:

> It is an impression obtained by many travellers, and also based upon experiences gained in our own country, that primitive man of all races, and the less educated of our own race, have in common a lack of control of the emotions, that they give way more readily to an impulse than civilized man and the highly educated. I believe that this conception is based largely upon the neglect to consider the occasions on which a strong control of impulses is demanded in various forms of society (p. 106). Related to the lack of power of inhibition is another trait which has been ascribed to primitive man of all races,—his inability of concentration when any demand is made upon the more complex faculties of the intellect. I will mention an example which seems to make clear the error

committed in this assumption (p. 110). Originality is a trait which is by no means lacking in the life of primitive people (p. 112).

The available evidence points thus unmistakably to the cultural interpretation of whatever differences in practical capacity may be noticeable among various peoples.

(E) *Mental Capacity and Mental Modifiability.* If we look upon man as being just one among many animals, we are bound to assume not only that cultural differences presuppose innate differences, but that these innate differences can only be modified with difficulty and after the lapse of centuries. Thus the cultural influences acting on a particular generation should be virtually nil in effect because of the resistance of inherited aptitudes (see F), and if the cultural development contemplated be extensive, ages upon ages should, on this theory, pass before they are realised. To take a concrete case for example. The Australian parent being thousands of years culturally removed from the English parent, we should expect that the child of the Australian if sent to school would utterly fail in approaching in performance the English child. Or to be even more precise. In view of his parents not being able to count above four, the Australian's child should stop there in his arithmetic lessons. After a severe selective process lasting for centuries its distant successor might be able to count up to fifty. Yet, as was shown in the article mentioned on p.234, without the mediation of natural selection or the inheritance of acquired modifications, the attainments and mental powers of the children of the Australian aborigines appear to be, according to one officially published report, "age for age and opportunity for opportunity, equal . . . . to the average white children."[1] And the modifiability does not extend only to the primary school; it reaches to the highest institutions—the law courts, the medical college, the engineering school, and the university. At the present moment about a hundred Africans are pursuing their studies in these abodes of learning in England, and if the social conditions in Africa be duly taken into account the number does not appear to be smaller than we should expect if the Africans were of English stock but were brought up as Africans in Africa. If we add to this that these young Africans appear to have neither more nor less difficulty than their European fellow-students in obtaining their degrees or diplomas, it follows that the Darwinian assumption of profound or even appreciable innate differences between races is in

1. This was true even of the Tasmanians: "'The master informs me that with some exceptions these aboriginal children are not inferior in capacity to European children.'" (H. Ling Roth, *The Aborigines of Tasmania*, 1899, p. 25.)

a very parlous state.[1] In fact, nothing of what should happen, according to the Darwinian theory, does happen, and nothing that does happen but is in flat contradiction with the theory.

The school and college form an excellent crucible in which to test race theories. The modifiability extends, however, to communities as a whole. Of the Torres Straits tribes Dr. A. C. Haddon (*Report of the Cambridge Anthropological Expedition to Torres Straits*, vol. 5, 1904, p. 272) says: "Thirty years ago the natives were absolutely naked and unashamed; now they have become a people suffering from an exaggerated prudishness." Whole sections of Indians who, according to the Darwinian theory, should have a mentality of a quite peculiar caste, have taken to European culture as a duck to the water, while at the same time they have lost all sympathy and understanding for their own native culture. (Consult, for instance, Dr. Coomaraswamy's *Essays in National Idealism*, where this is deplored.) The marvellous changes which Japan has undergone during the last two generations have startled the West. From an excessively peace-loving population it has transformed itself into a warrior race (J. Bertin, in *Sur le Congrès des Races*), while, as if by a magic wand, it has developed its intellectual side to the extent of making first-rate scientific contributions. More incredible still, that seemingly petrified, immovable colossus China bids fair even to outdo Japan in the cheerful readiness of venturously embarking on far-reaching political, educational, judicial, industrial, and commercial changes, to say nothing of a revolution in customs and manners. Here, if anywhere, we should have surmised immobility, and yet here in this oldest of modern countries we observe changes proceeding compared to which our European efforts at reformation appear dwarf-like and petty.

We may, therefore, regard it as abundantly attested, contrary to Darwinian and eugenic views, that the different races of mankind are for all intents and purposes indefinitely modifiable in their mentality, and that no known length of uniform environmental influence leaves the slightest traceable impress on the innate mentality of races. Evidently cultural antecedents alone count. It is these which lend a people its mental and moral outlook. As these antecedents are changed, so the cultural outlook freely passes into a new phase. But for man's culturability, geographical and economic influences are impotent to build up a civilisation.

(F) *Instincts*. Granted that man is indefinitely modifiable in

1. The contention that the frontal sutures of the so-called lower races close earlier, is emphatically called in question by J. Frédéric, "Untersuchungen über die normale Obliteration der Schädelnähte," in *Zeitschr. f. Morphologie*, etc., 1906, pp. 444-5.

his mentality, it follows that he cannot be supposed to be tyrannised over by his instincts. These are defined by Mr. McDougall (*An Introduction to Social Psychology*, 1907, p. 23) as "certain innate specific tendencies of the mind that are common to all members of any species, racial characters that have been slowly evolved in the process of adaptation of species to their environment and that can be neither eradicated from the mental constitution of which they are innate elements nor acquired by individuals in the course of their lifetime" (p. 23).

It may be accepted without demur that whilst an individual human being has the power of deciding whether he shall live or die, he must obey certain physiological and other demands if he chooses to live. He must breathe, he must have warmth, he must eat, he must exercise body and mind, and the like. But these, as well as all the human instincts mentioned by McDougall, taken as such, leave us emphatically on the animal or sub-human plane, *i.e.*, without any culture, whilst all but the most fundamental animal activities are in man easily modified or even suppressed. In this modifiability, indeed, as we have seen, lies the principal characteristic of human nature.

Such considerations, allowing that they can only be said to apply properly to man's imperfect animal instincts, make one feel that if nine-tenths in civilisation is a cultural product primarily, nine-tenths at least of the remaining tenth may be modified in any direction strongly desired by the community. It is therefore possible that various secondary instincts indirectly related to culture exist in man, but that they are so loosely rooted that the stupendous force of social culture, when concentrated, readily removes or controls them. Of the hereditary transmission of cultural acquisitions there is, however, no trace, as (E) has shown. Indeed, even so far as animals are concerned, "no instance of such inheritance is forthcoming." (J. McCabe, *Principles of Evolution*, 1913, p. 139. See also to the same effect Delage, *L'Hérédité*, 1903, pp. 236-7.) The plastic character of man's animal instincts and the absence of particular instinctive cultural needs, means, and methods can alone account for man's indefinite and unique modifiability.

(G) *Brain and Skull.* Even the difference in certain important physical respects appears to be minimal between races, for while, according to Deniker, the average brain of the ape weighs 360 grammes and that of the average European 1,360, the average Negro's weighs 1,316 (ranging from 1,013 to 1,587 grammes) and that of the average Annamese 1,341 grammes. Human brains appear to be extraordinarily variable in weight. "Virchow has found a brain weighing 1,911 grammes in a man without any specially high development, and the brains of some very able men have been found below the average weight." (*Chambers's Ency-*

clopædia, article "Brain.") The brain weight of one individual may thus be double that of another nearly without appreciable difference in mental calibre. As Prof. W. I. Thomas says:

> Viewed from the standpoint of brain weight, all races are, broadly speaking, in the same class. For while the relatively small series of the brains from the black race examined by anthropologists shows a slight inferiority in weight—about 45 grammes in negroes—when compared with white brains, the yellow race shows more than a corresponding superiority to the white; in the Chinese about 70 grammes.

The existence of appreciable differences in the mental constitution of races cannot therefore be deduced from the known comparative facts relating to the brain. The ascertained variations in brain weight offer no standard for the measurement of innate mental and moral quantities.

It is the same, apparently, as regards the skull, the brain's bony shelter, for a study of ancient skulls suggests that primitive man—or man since he has been man at all—was practically as well furnished with brains as we moderns are. On this there seems to be a consensus of opinion, as the following quotations from recently published books show: "The cranial capacity of . . . some of the most ancient human skulls is not less than that of the average man of highly civilised race" (Ray Lankester, *The Kingdom of Man,* 1912, p. 13). "Probably this creature [the distant ancestor of paleolithic man] had nearly the full size of brain and every other physical character of modern man" (*Ibid,* p. 12). "Some specimens of Neanderthal man in sheer size of the brain cavity are said to give points to any of our modern poets and politicians" (R. R. Marett, *Anthropology,* 1912, p. 87). "Early paleolithic man was furnished with a very adequate quantity of brain material, whatever its quality may have been. In regard to the amount, no symptom or sign of an inferior evolutionary status can be detected" (W. L. Duckworth, *Prehistoric Man,* 1912, p. 45). The above considered judgments are completely borne out by Dr. Arthur Keith's authoritative *Ancient Types of Man,* 1911.

(H) *The Individual.* If, as has been shown above, no conceivable circumstances seem to affect the innate intellectual capacities of a people; if every people is at any time ready to identify itself with the farthest point thus far reached by the stream of civilisation; and if the vast cultural differences between peoples are purely social products, what shall we say to the theory that every individual differs in regard to the mentality with which he started life? Manifestly, the same conclusion must be drawn, for if the Darwinian theory did apply to the special circumstances of individuals it would *ipso facto* apply to the general circumstances of peoples (who are composed of individuals), and if it is inapplicable to the latter it must be inapplicable to the former. It is difficult to see how we

are to escape from this magic circle, and it appears useless to attempt the impossible feat. And, after all, if the prodigious differences in the civilisations of various peoples leave them yet on the same level so far as native capacity is concerned, need we shrink from the obvious corollary that the enormous cultural differences observable between individuals are due purely and solely to social causes? 'But what of men of genius, men of talent, average men, and those below the average (leaving aside defectives who are, together with those diseased, plainly abnormal), and what of the differences noticeable in members of the same family, and . . .?' The answer, according to the cultural view, is simple. Our classification of individuals has been as faulty as that of peoples. We have slurred over patent social influences in the one case as in the other. We have tacitly posited occult causes where diligent research would have revealed social explanations. We have been so possessed and obsessed by the Darwinian theory—a mere revival of an ancient guess (*e.g.*, *vide* Plato's *Republic*), so far as the problem of culture is involved—that we have ridden roughshod over every principle of scientific method, defying the most elementary demands of scientific exactitude when it was a question of explaining individual differences in mental, moral, and æsthetic achievement. Let us, however, touch on the classes of individuals recognised in current classifications.

(a) *Men of Genius.* Over and over again we find men of genius appearing in clusters: Æschylus, Sophocles, and Euripides; Socrates, Plato, and Aristotle; the age of Pericles; the Elizabethan period adorned by Shakespeare and a double score of first-class playwrights and innumerable poets; the host of eminent painters grouped round Raphael and Michael Angelo; the Renaissance generally; Bacon, Descartes, Locke, Leibnitz, Spinoza; Voltaire, Diderot, Rousseau, D'Alembert; the outburst of great men of science at the beginning of the nineteenth century; the grouping of Beethoven, Bach, and other eminent musicians, in one country and at one period; the German poetic group, Lessing, Goethe, and Schiller; the German group of philosophers, Kant, Hegel, Fichte, Schopenhauer; the English poets, Wordsworth, Byron, Shelley, and Keats; the English novelists, Scott, Thackeray, Dickens, Lytton, and George Eliot; and the English inventors, Watts, Arkwright, and Stephenson. Considering, therefore, that by far the larger majority of the most eminent men and women appears in groups, we must either posit showers of men of genius (William James, *The Will to Believe*, 1897, p. 243) mysteriously produced, or less picturesquely assume that social tendencies lead to "genius" rising to the surface. There can be no doubt which is the more likely explanation. We can thus easily understand how a growing interest in astronomy gave us the Copernican

theory, how continued interest in the subject focussed itself in Kepler and Galileo, and how increased interest of the same nature spread over the whole of Europe and culminated in the writing of Newton's *Principia*. Ignore this social attitude and the group of astronomers, as of poets, philosophers, and novelists, seems nothing less than a miraculous production. We must say, therefore, that, but for certain social causes, the groups referred to would not have existed, and the individuals composing them would have led uneventful lives leading to oblivion and not to fame.

Such is our first proposition. Our second is that the man of genius as such is also explicable socially. Read Brewster's *Life of Newton,* for example, and you will find it difficult to determine what portion of the gravitation theory could be legitimately and unequivocally attributed to Newton. As hinted above, this theory was rapidly shaping itself, thanks to the labours of innumerable workers in many countries, and Newton, one of the foremost of them, conceived, just when the time was ripe, the plan of philosophically summing up the whole of the work done on the subject. Or take the case of Charles Darwin. Already Sir John Herschell, in his *Discourse,* written by 1831, showed himself alive to the fact that the geological record proved that the series of extinct plants and animals embedded in the rocks were more and more highly developed the less ancient they were, the most recent resembling closely the living flora and fauna, and the most ancient, by a series of gradations, becoming strikingly different. Chambers's *Vestiges of Creation,* published first in 1843, ran in a very few years through numerous editions, showing that the day had come for the theory of evolution. Agassiz, again, by 1851, as is shown by his *Comparative Physiology,* was quite clear in regard to the appearance, though not as to the reality, of the evolution of species as recorded by the rocks; and Herbert Spencer had not a shadow of a doubt on the subject, and began to elaborate the doctrine of evolution several years before the *Origin of Species* was put on the book market in 1859. What is more, the " Darwinian " theory was simultaneously discovered by Alfred Russel Wallace, showing that the new view of the origin of life was inevitable. When Darwin then published his *Origin of Species,* all the world was, figuratively speaking, standing on tiptoe, ready to cry " I told you so " to anything he had to say. Add to this his, as well as Wallace's, indebtedness to Malthus for the causal idea, and it will be obvious that Darwin's greatness is altogether a social product and accident.[1] Instead of these men of genius being thus the creators of world-moving ideas,

1. Further research has called into question so many of Darwin's principal explanations of the evolutionary process that his claim to be a great discoverer is practically annihilated. (See especially Bateson's remarkable volume, *Problems of Genetics,* 1913.)

they prove to be philosophical summarisers and popularisers, and if they seem to stand immeasurably higher than the average of their fellows, it is because the hasty imagination attributes to them the labours of an exceptionally active period. Proof could be piled upon proof to demonstrate that this line of reasoning is correct, and that men of genius, whether found inside or outside a group, owe their pre-eminent position to social causes.[1]

The theory of heredity is only strong so long as it is not analysed. Sir Francis Galton, for instance, in his well-known *Hereditary Genius,* quotes fourteen eminent musicians who, he alleges, had eminent relations. These fourteen might well be reduced to six—Bach, Haydn, Mendelssohn, Meyerbeer, Mozart, and Palestrina,—and of these only one, Bach, had relatives who might be said to have been eminent composers. Since, therefore, of the whole galaxy of first-rate composers, only one is shown to be a member of a musically-gifted family, it is obvious that in music hereditary genius plays a negligible part, the presumption being that Bach's fame was due to individual circumstances and social conditions. Galton's other lists cannot inspire confidence either. Raphael is cited as having one relative worth mentioning, namely, his father, who was " a painter whose powers were moderate, but certainly above the average "; Goethe's father and mother are given for scarcely as good a reason; and Isaac Newton is thus illegitimately introduced in one of the lists. Indeed, whether we analyse Galton's *Hereditary Genius,* Havelock Ellis's *British Genius,* or De Candolle's *Histoire des Sciences et des Savants depuis deux Siècles,* we are equally oppressed with a sense that the

1. Galton appropriately says: " It would seem that discoveries are usually made when the time is ripe for them, that is to say, when the ideas from which they naturally flow are fermenting in the minds of many men." (*Hereditary Genius,* p. 192.) M. George Sarton, the editor of *Isis,* an international review devoted to the history of science, expresses himself as follows: " C'est l'humanité tout entière, unifiée par l'enchevêtrement et l'interdépendance infinis des activités individuelles qui invente et qui progresse. Tout le travail intellectuel de l'humanité est comme le travail d'un être unique, infatigable et immortel." (*Congrès Mondial des Associations Internationales,* Brussels, 1913.) Dr. I. Ioteyko, Director of the International Faculty of Pedology, says: " Il est hors de doute à l'heure actuelle que l'inventivité est inhérente à l'esprit humain," and looks forward to " le développement du talent, voir même du génie." (*Le Pœdologium,* January to March, 1913, pp. 22-3.) And Benjamin Kidd says in his *Social Evolution,* 1898, pp. 270-1: " Even the ablest men amongst us, . . whose names go down to history connected with great discoveries and inventions, have each in reality advanced the sum of knowledge by a comparatively small addition. In the fulness of time and when the ground has been slowly and laboriously prepared for it by a vast army of workers, the great idea fructifies and the discovery is made. It is, in fact, not the work of one, but of a great number of persons whose previous work has led up to it."

authors were too fascinated with the Darwinian conception of human nature and human progress to consider the social factor adequately and impartially.

Whichever way, then, we regard the problem of genius, we reach the conclusion that there are no grounds for attributing extraordinary native ability to any individuals, and that there is good ground for explaining a man's position in the scale of social values to individual circumstance and to the social trend. Our suspicion has thus ripened into something like conviction that individual and racial genius equally owe their existence to cultural factors and favouring circumstances, and that the anti-evolutionary idea of vast innate differences between different races, nations, and individuals is untenable. We are thus spared the need of suggesting insanity (Galton), imbecility (Havelock Ellis), or abnormal development in the men and women who represent to us the crests of many an historico-social wave, and we are not bound any longer to think that the mass of humanity must for ever live in the swamps and lowlands of ignorance, pettiness, and superstition.

(b) *Talent and Mediocrity.* The problem of the origin of talent is not so simple as it might seem. If each section of society showed a proportion of talent equal to its numerical importance the social factor would be necessarily irrelevant to our inquiry. As it is, not only is the talent contained in each social section in inverse proportion to its size, but, significantly enough, the more favourably placed a section is, the higher and more persistent are its achievements. Kings strike the ordinary student as being almost always immensely superior to peasants. The aristocracy in the Middle Ages really displayed a vast amount of talent. The gentry has flooded the positions just below those coveted by the aristocracy. And the well-to-do and educated classes show a surprising number of successes. Yet, depress the social position of these classes, or raise the social position of other classes, and astonishing changes as to capacity appear to come to light. Exactly what we should expect on the culture theory, and what we know to be true of peoples as a whole! It is undisputed that the overwhelming majority of our Royal Academicians, our leading lawyers, our members of learned societies, our captains of industry, and the majority of other men and women of talent come from the classes which command wealth and social position, whether hereditary or not; it is undoubted that, without wealth and social position, it is most difficult to rise, for the poor man cannot afford either the fees of the Inns of Courts or the universities, journeys to Italy for the study of art, or any other of the many expensive ways of mounting the social ladder, and therefore it seems reasonable to infer that, granted a wide range of individual circumstances (including enthusiasm

created for a certain pursuit owing to particular experiences and the existence of a good opening), we should encounter, as we do, the picturesque variety of talent in the socially favoured and its absence in the socially ill-favoured classes.

Actual differences in social standing should not deceive us on this point, for, to put it cautiously, "it is not certain that the average inherent mental and physical qualities of the majority of the wage-earning classes are not equal to those of the rest of the population," while "continued family success may be due, in at least a high proportion of the total cases, to the favourable environment of the children of the able, to their possession of all the means of training for success, and to the opportunities and the advantages secured by a public school and university career, as well as by the successful position of the father," and "the fact that the poorest are lowest in the social scale cannot be used as a completely satisfactory argument that . . . they are the poorest stock," since "the results, so far as they are concerned, may have been biassed by conditions that have thwarted natural competence" (A. Newsholme, *The Declining Birth Rate*, 1911, p. 53, pp. 51-52). In this connection countries should be compared where the higher education is respectively cheap and dear and access to higher posts respectively easy and difficult.

The statistical method which Karl Pearson's school pursues does not seem to have yielded as yet any striking results. We will examine one series of figures to furnish the reader with an example of the method. The facts under consideration relate to the 2,459 students at Oxford between 1860 and 1892 whose fathers were educated at the same university, and are discussed in a paper by E. Schuster and Ethel M. Elderton on *The Inheritance of Ability*, published in 1907. Leaving subtlety aside, one would imagine, on the theory of heredity, that as an almost invariable rule the fathers of those who took first, second, third, and fourth class honours had themselves taken similar honours. Instead of this we find, to give but one illustration, that of the 149 who had been placed in the first class, 27 only, *less than one-fifth*, had fathers who had been themselves in the first class, and that of the 329 second-class men 52 had fathers in the first class. In short, "of the fathers of the first-class men, 36·2 per cent. obtained either a first or a second class themselves, and thus were on the whole slightly superior to those of the second-class men, of whom only 32·2 per cent. reached this standard" (p. 5). Now, if we remember that "family circumstances or family traditions influence a man when he decides on what kind of degree he shall become a candidate" (p. 11), and that many other social factors are involved, the difference in the figures, 36·2 per cent. to 32·2 per cent., is even smaller than we should have expected on the culture theory.

Allowing for individual experience and for social conditions, the culture theory seems, therefore, quite able to account for the existence of talent *en masse* in the socially-favoured classes and scattered here and there in the socially ill-favoured classes.

(c) *Members of the Same Family.* In the last section we have by implication dealt with the large body of untalented persons by suggesting that the lack of talent is not in themselves, but in their stars. It is, however, contended that the differences in the members of the same family, 'where the environment is demonstrably homogeneous,' prove beyond a doubt that birth, and not social advantage, counts. Yet this 'unanswerable' argument loses its virtue when we probe the assertion. In a society like ours, adults have so many opinions and examples placed before them that they necessarily differ widely. One of these adults becomes father, another mother; then there are servants, relatives, friends, acquaintances, and strangers, to say nothing of books, each with their slightly or considerably varied point of view. Manifestly, such an environment cannot by any stretch of the imagination be regarded as uniform for a child. If, then, we think of several children in a family, each of different age, the complexity increases. And to all this has to be added that since the child's thoughts are uncontrolled by the elders, and since the experiences, or even the physical constitution or health, of no two individuals can coincide, unrelieved uniformity is of necessity out of the question. The familiar family argument thus breaks down when examined. Moreover, if we notice how dirt, coarseness, brutality, superstition, and their compeers flourished unchallenged not so many generations ago among us, and that within the last generation we have witnessed sweeping changes in these directions, it becomes obvious that the fatalistic argument of the home is plainly contradicted by the data of history. In fact, comparing different generations or different parts of a country, we observe certain customs rigidly universal in one age or district and rigidly unknown in another. On all points, then, it seems that the culture theory is not invalidated by the apparently divergent mentalities in one and the same family of children.

Summing up, therefore, our examination of the origin of the varying performances of individuals, we seem to be justified in concluding that individual experience and social circumstances offer an adequate explanation of the observable divergences, and that these divergences have been vastly exaggerated owing to the prevalent hero worship. To put this in the form of a definition: Man alone possesses the power of absorbing the substantial part of a highly developed civilisation, together with the ability of advancing this civilisation to an infinitesimal degree; or, stated more abstractly and broadly, the stock of humanity's acquisitions, divided by the number of human beings who have lived, allowing for actual

physical and social conditions, yields the intellectual, moral, and practical capacity of the individual. In other words, culture is a strictly collective product and the individual a strictly social being.

Conclusions. (*a*) The Darwinian assumption that the amazing differences in cultural level between the various peoples of the globe are due, wholly or mainly, to corresponding differences in innate mentality, and that these in their turn were caused by the selection of natural and acquired structural modifications, is, as we saw above, demonstrated by recent research to be as nearly as possible without any justification in fact. On the contrary, we see now that culture is solely explicable by culture, and that every people is innately prepared to adapt itself to any civilisation however high. This being the case, we are bound to agree that the known differences in the mentality of individuals not diseased are best accounted for by the same law of cultural influence, and that human progress can only be retarded or accelerated through retarding or accelerating cultural development. Indeed, what structural modifications are to the advance of animals, cultural modifications are to the progress of man.

(*b*) It may be asked, How are these conclusions to be reconciled with the theory of evolution? Without making the remotest attempt at a complete answer, the following sketch of a possible reply may be given. In the history of man's ancestor, himself the most advanced among animals, the time came when through untoward changes in his environment, he was threatened with extinction. The only method to save himself was reliance on unlimited collective thought instead of on a particular structural outfit determining needs, means, and methods, and thus a double process of change set in and continued until man replaced his specific inherited structural outfit by an acquired or cultural one. These two classes of outfits were in direct opposition to each other, as fixed heredity does not permit of free adaptability which is the very life-breath of culture. Accordingly, man came to differ fundamentally from all other life in that he was no longer guided by a series of inherited and fixed needs, means, and modes of procedure. This explanation is no doubt more or less laboured and incorrect; but the essential fact remains that man does differ from plants and animals in the manner specified. So far as culture is concerned, just because it is a new development, man is as far removed from the ape as from the fish or even the oak tree, and all attempts to compare human with animal communities are doomed to complete failure because of this. Of course, since man is a living being nearly related to the apes, he bears certain traces which connect him with life as a whole; but these traces represent his general or sub-human nature, and are entirely unconnected with his unique capacity for, and primary dependence on, culture. Yet all

this is precisely what we should expect to be the case on the theory of evolution, and if Darwin failed in his interpretation of human progress, it was only because he overlooked what was specific in man. The scanty knowledge and experience of his day relating to the different races of the world were mainly responsible for his being misled.

Moreover, not only does the Darwinian conception violently clash with the facts; but it is inconsistent with our knowledge of animal life and development. That is, if natural selection had caused in man the enormous differences observable in individuals, in groups, and historically, we should be bound to conclude that equally gigantic differences existed in all species. And yet outside mankind, in every species, almost complete uniformity and stability is seen to reign, when all but prodigious periods of time are focussed. The Darwinian explanation of the origin of culture must therefore be rejected, precisely because it is in conflict with the general process of organic evolution, whilst our account of the virtual stability and uniformity of human nature should commend itself, just because it harmonises with what we know of the whole of animal life and development. Similarly, granting the method of culture, we can see how adaptation through habits, customs, convictions, and ideals, replaces, and renders superfluous, structural adaptation. Thus the cultural, rather than the eugenic, theory is in accord with the fundamental facts of the evolution of living forms.

(*c*) Our new view presents man as a modified form of life which depends on culture so far as it is man. Consequently, without culture man may be said to be the most miserable and incapable of beings, and for this reason presumably, not one human being is known to exist outside the influence of some civilisation. This, too, implies that, so far as man is cultured, he has profited by the cultural inventions and discoveries of the whole of mankind, from pre-paleolithic times to our own. Furthermore, depending essentially on culture for guidance and for the satisfaction of his own specific nature, and culture tending through the ages towards the perfect in every department of effort, he himself is really only fitted for the perfect, and can only feel truly satisfied so far as he is an integral part of an ideal state of society. Moreover, seeing the composition of man's nature and the enormous cultural advance he has thus far made, it seems inevitable that—failing some stellar catastrophe—he should triumph all along the line and become, what he is alone fitted for by nature, a cultural being of the highest insight, refinement, and rectitude.

(*d*) The culture theory is not without powerful supporters in the present day. Professor Leonard T. Hobhouse, for instance, lucidly expounds the root principle of the meaning of human tradition :

The rudiments of instruction which an ape, a cat, or a bird can furnish to its young, are limited to a few acts of restraint and encouragement, supplementing, or rather, anticipating the lessons which individual experience would teach. In human society, on the other hand, tradition goes to the root principles of action, both as shaping the ends recognised as desirable, and as furnishing rules of methods of which but a few could be found out in the course of individual experience, and those only by exceptionally gifted or exceptionally fortunate persons. In a word, tradition as based on the Universal brings the experience of the race to bear on individual conduct in a new sense. If we are right in holding that instinct is due to heredity, while heredity works through natural selection, then, as we have already seen, there is a sense in which instinct itself utilises the experience of the race to guide the individual. What is performed at that stage by the constant elimination of the majority of individuals born, and by the stereotyping of the structure of those which survive, is executed at this higher stage by the organisation of the experience of those who have lived, and rests upon the plasticity of those who learn by it. In short, at this stage, we have organised racial experience largely taking the place of that hereditary structure which represents the result of an infinity of conflicting and chaotic experiences in past generations. In fine, in the highest animal species, instinct lays the ground plan of conduct, within which details may be remodelled by individual experience. In the human species, the ground plan is itself reconstituted by the organised experience of the race." (*Mind in Evolution,* 1901, pp. 319-20.)

Mr. McDougall says:—

Whereas animal species have advanced from lower to higher levels of mental life by the improvement of the innate mental constitution of the species, man, since he became man, has progressed in the main by means of the increase in volume and improvement in quality of the sum of knowledge, belief, and custom, which constitutes the tradition of any society. And it is to the superiority of the moral and intellectual traditions of his society that the superiority of civilised man over existing savages and over his savage forefathers is chiefly, if not wholly, due. . . . All that constitutes culture and civilisation, all or nearly all, that distinguishes the highly cultured European intellectually and morally from the men of the stone age of Europe, is summed in the word " tradition." National characteristics, at any rate all those that distinguish the peoples of the European countries, are in the main the expression of different traditions. (*Introduction to Social Psychology,* 1909, pp. 328-9.)

Professor Lloyd Morgan expresses himself as follows:—

Mental progress is mainly due, not to inherited increments of mental faculty, but to the handing on of the results of human achievement by a vast extension of that which we have seen to be a factor in animal life, namely tradition. (*Habit and Instinct,* 1896, p. 334.) Again: Intellectual evolution, whether of primary or secondary value, is no longer by increment of human faculty, but by summation and storage in the environment it creates. (*Ibid,* p. 334.)

These extracts, which could be easily multiplied, leave no doubt on the matter that well-known thinkers of our day have recognised the uniqueness of man and accordingly cut themselves adrift from the Darwinian tradition. Unfortunately, however, apparently not one of the innovators has gone beyond making a general statement, when what is required is a detailed examination of the whole problem and a systematic re-interpretation of human affairs in the light of present-day knowledge.

The basic error of Darwinian eugenists (Galton and others, as quoted; also, among a number, J. A. Thomson, *Heredity;* R. C. Punnett, *Mendelism*; S. Herbert, *The First Principles of Heredity*; and W. Schallmeyer, *Vererbung und Auslese*) has been to assume that culture represents an artificial and unstable auxiliary, to be replaced without undue delay by permanent organic modifications, whereas, on the contrary, it apparently embodies an unique method of nature by which advance through structural change is rendered superfluous and is almost infinitely transcended. To this basic error must be attributed the uniform neglect of eugenists to examine the scope and fundamental significance of culture; their unsuspectingly regarding socially developed modes of thought and feeling as heritable; their readiness to take for granted that the cultural traits of families, classes, peoples, races, and the two sexes, primarily reflect innate differences; their almost invariable satisfaction, in good faith, with evidence of the flimsiest character, such as naïve references to 'every-day experience'; and their insistence that human progress is to be identified with the evolution of a super-man, when it is really a question of developing a super-civilisation. This unfortunate attitude of overlooking the emergence of a new turning on the evolutionary road, has been a disservice to the culture theory, for its establishment pre-supposes that it has successfully passed through the fire of ruthless criticism, an ordeal by which it has yet to be tested.

(*e*) Our whole thought relating to human problems is to-day vitiated by the unwarranted assumption of mental heredity. Leaving aside the larger social issues, such as the struggle for the emancipation of women, the placing on an equal footing of all races and classes, the substitution of international law for the appeal to the mailed fist, the subordination of the senses and the appetites to a life-ideal, the providing of the fullest opportunities for the children of all and sundry, which would be automatically solved by the culture theory, we find mental heredity adduced for the explanation of every kind of human characteristic. Is some one methodical or slovenly, pious or sceptical, honest or dishonest, tenderly parental or otherwise, able or stupid, liberal or conservative, or is a child eager or lax in his morals or studies,—whatever it be, mental heredity is supposed to explain it all. It is time, we say,

that Sociology should definitely clear itself of all complicity in the dissemination of bare statements involving a belief in mental heredity, and should settle down to trace cultural variations to definite cultural conditions before resorting to the theory of heredity.

(*f*) With the Darwinian incubus removed, Sociology may breathe freely at last. Its fundamental basis being unequivocally determined as human nature depending specifically and fundamentally on socially and historically developed culture for self-expression and self-realisation, it has done with occult, incalculable and non-social causes—with the innately and strikingly different mentalities and capricious instincts of different sexes, different races, different nations, different classes, and different individuals—and may boldly proceed on the assumption that man is strictly a social being, inconceivable and a nonentity apart from society. If it be also agreed that man is essentially fitted for, and therefore only truly satisfied with, the highest civilisation or efflorescence of culture, and that progress towards a humanity distinguished by the universal prevalance of the love of fellowship, science, and refinement, is a sober fact, sociologists may be said to possess a reliable guide in interpreting the past, in understanding and counselling the present, and in forecasting the future. Their labours will not be less arduous; but they will work with the consciousness that they are actively reducing a chaos into a cosmos, a mass of apparently intractable facts into a self-consistent and self-maintained system of reality. This will be the beginning of Sociology as a strict science, for a strict science with its primary unit—in this case the nature of man—scientifically undetermined, is inconceivable. If, against that, it be urged, with Gumplowicz, that the social group[1] is the sociological element, or, with Durkheim, that even the mental categories of space, time, cause, etc., are social products, the answer is still that only the unique cultural nature of man makes civilised groups and universal thought possible, and that it alone explains the wherefore of collective effort and the whither of social development.

(*g*) Finally, the present writer ventures to suggest that the Sociological Society should institute an inquiry having for its object the determination of the precise sphere of influence of the collective or cultural, as distinct from the individual or hereditary, factor in all matters appertaining to the intellectual, moral, æsthetic, and practical capacities and attainments of individuals and groups

1. It would be more correct to say: Mankind; for as the individual is the culture-demanding unit, so mankind is the culture-supplying unit. The family, the mart, and the social group might be regarded as the principal culture-mediating units.

of individuals, the investigators to bear in mind the crucial importance of studying different peoples and members of different classes under the *same* cultural conditions (*e.g.*, in school and college), and *vice versa* (*e.g.*, by comparing the achievements of blue-eyed 'Aryans' in the mountains of Kurdistan[1] with those of woolly-haired Africans in the universities of Europe). Such an inquiry should yield invaluable insight into the causes, the nature, and the development of social institutions and activities.

G. SPILLER.

1 Felix von Luschan, *The Early Inhabitants of Western Asia*, 1911.