

For in truth there was in the soul of the boy, who had never had any but women to look up to, a strange yearning towards reverence, which was called into action with inexpressible force by the very aspect and tone of such a sage elder and counsellor as Master Gottfried Sorel, and took advantage of the first opening permitted by his brother. And the sympathy always so strong between the two quickened the like feeling in Ebbo, so that the same movement drew him on his knee beside Friedel in oblivion or renunciation of all lordly pride towards a kinsman such as he had here encountered.

"Truly and heartily, my fair youths," said Master Gottfried with the same kind dignity, "do I pray the good God to bless you, and render you faithful and loving sons, not only to your mother, but to your fatherland."

He was unable to distinguish between the two exactly similar forms that knelt before him, yet there was something in the quiver of Friedel's head, which made him press it with a shade more of tenderness than the other. And in truth tears were welling into the eyes veiled by the fingers that Friedel clasped over his face, for such a blessing was strange and sweet to him.

Their mother was ready to weep for

joy. There was now no drawback to her bliss, since her son and her uncle had accepted one another; and she repaired to her own beloved old chamber a happier being than she had been since she had left its wainscoted walls. Nay, as she gazed out at the familiar outlines of roof and tower, and felt herself truly at home, then knelt by the little undisturbed altar of her devotions, with the cross above and her own patron saint below in carved wood, and the flowers which the good aunt had ever kept as a freshly-renewed offering, she felt that she was happier, more fully thankful and blissful than even in the girlish calm of her untroubled life. Her prayer that she might come again in peace had been more than fulfilled; nay, when she had seen her boys kneel meekly to receive her uncle's blessing it was in some sort to her as if the work was done, as if the millstone had been borne up for her, and had borne her and her dear ones with it.

But there was much to come. She knew full well that, even though her son's first step had been in the right direction, it was in a path beset with difficulties; and how would her proud Ebbo meet them?

*To be continued.*

## HEREDITARY TALENT AND CHARACTER.

BY FRANCIS GALTON.

### SECOND PAPER.<sup>1</sup>

I HAVE shown, in my previous paper, that intellectual capacity is so largely transmitted by descent that, out of every hundred sons of men distinguished in the open professions, no less than eight are found to have rivalled their fathers in eminence. It must be recollected

<sup>1</sup>NOTE.—I take this opportunity of correcting a small *erratum* in my last paper. The name of the author of the forthcoming Brief Biographical Dictionary from which I quoted should have been the Rev. Charles Hole, not Hone.

that success of this kind implies the simultaneous inheritance of many points of character, in addition to mere intellectual capacity. A man must inherit good health, a love of mental work, a strong purpose, and considerable ambition, in order to achieve successes of the high order of which we are speaking. The deficiency of any one of these qualities would certainly be injurious, and probably be fatal to his chance of obtaining great distinction. But more than this: the proportion we have arrived at takes

no account whatever of one-half of the hereditary influences that form the nature of the child. My particular method of inquiry did not admit of regard being paid to the influences transmitted by the mother, whether they had strengthened or weakened those transmitted by the father. Lastly, though the talent and character of both of the parents might, in any particular case, be of a remarkably noble order, and thoroughly congenial, yet they would necessarily have such mongrel antecedents that it would be absurd to expect their children to invariably equal them in their natural endowments. The law of atavism prevents it. When we estimate at its true importance this accumulation of impediments in the way of the son of a distinguished father rivalling his parent—the mother being selected, as it were, at haphazard—we cannot but feel amazed at the number of instances in which a successful rivalry has occurred. Eight per cent. is as large a proportion as could have been expected on the most stringent hypothesis of hereditary transmission. No one, I think, can doubt, from the facts and analogies I have brought forward, that, if talented men were mated with talented women, of the same mental and physical characters as themselves, generation after generation, we might produce a highly-bred human race, with no more tendency to revert to meaner ancestral types than is shown by our long-established breeds of race-horses and fox-hounds.

It may be said that, even granting the validity of my arguments, it would be impossible to carry their indications into practical effect. For instance, if we divided the rising generation into two castes, A and B, of which A was selected for natural gifts, and B was the refuse, then, supposing marriage was confined within the pale of the caste to which each individual belonged, it might be objected that we should simply differentiate our race—that we should create a good and a bad caste, but we should not improve the race as a whole. I reply that this is by no means the necessary result. There remains another

very important law to be brought into play. Any agency, however indirect, that would somewhat hasten the marriages in caste A, and retard those in caste B, would result in a larger proportion of children being born to A than to B, and would end by wholly eliminating B, and replacing it by A.

Let us take a definite case, in order to give precision to our ideas. We will suppose the population to be, in the first instance, stationary; A and B to be equal in numbers; and the children of each married pair who survive to maturity to be rather more than  $2\frac{1}{2}$  in the case of A, and rather less than  $1\frac{1}{2}$  in the case of B. This no extravagant hypothesis. Half the population of the British Isles are born of mothers under the age of thirty years.

The result in the first generation would be that the total population would be unchanged, but that only one-third part of it would consist of the children of B. In the second generation, the descendants of B would be reduced to two-ninths of their original numbers, but the total population would begin to increase, owing to the greater preponderance of the prolific caste A. At this point the law of natural selection would powerfully assist in the substitution of caste A for caste B, by pressing heavily on the minority of weakly and incapable men.

The customs that affect the direction and date of marriages are already numerous. In many families, marriages between cousins are discouraged and checked. Marriages, in other respects appropriate, are very commonly deferred, through prudential considerations. If it was generally felt that intermarriages between A and B were as unadvisable as they are supposed to be between cousins, and that marriages in A ought to be hastened, on the ground of prudential considerations, while those in B ought to be discouraged and retarded, then, I believe, we should have agencies amply sufficient to eliminate B in a few generations.

I hence conclude that the improvement of the breed of mankind is no

insuperable difficulty. If everybody were to agree on the improvement of the race of man being a matter of the very utmost importance, and if the theory of the hereditary transmission of qualities in men was as thoroughly understood as it is in the case of our domestic animals, I see no absurdity in supposing that, in some way or other, the improvement would be carried into effect.

It remains for me in the present article to show that hereditary influence is as clearly marked in mental aptitudes as in general intellectual power. I will then enter into some of the considerations which my views on hereditary talent and character naturally suggest.

I will first quote a few of those cases in which characteristics have been inherited that clearly depend on peculiarities of organization. Prosper Lucas was among our earliest encyclopædists on this subject. It is distinctly shown by him, and agreed to by others, such as Mr. G. Lewes, that predisposition to any form of disease, or any malformation, may become an inheritance. Thus disease of the heart is hereditary; so are tubercles in the lungs; so also are diseases of the brain, of the liver, and of the kidney; so are diseases of the eye and of the ear. General maladies are equally inheritable, as gout and madness. Longevity on the one hand, and premature deaths on the other, go by descent. If we consider a class of peculiarities, more recondite in their origin than these, we shall still find the law of inheritance to hold good. A morbid susceptibility to contagious disease, or to the poisonous effects of opium, or of calomel, and an aversion to the taste of meat, are all found to be inherited. So is a craving for drink, or for gambling, strong sexual passion, a proclivity to pauperism, to crimes of violence, and to crimes of fraud.

There are certain marked types of character, justly associated with marked types of feature and of temperament. We hold, axiomatically, that the latter are inherited (the case being too notorious, and too consistent with the ana-

logy afforded by brute animals, to render argument necessary), and we therefore infer the same of the former. For instance, the face of the combatant is square, coarse, and heavily jawed. It differs from that of the ascetic, the voluptuary, the dreamer, and the charlatan.

Still more strongly marked than these, are the typical features and characters of different races of men. The Mongolians, Jews, Negroes, Gipsies, and American Indians; severally propagate their kinds; and each kind differs in character and intellect, as well as in colour and shape, from the other four. They, and a vast number of other races, form a class of instances worthy of close investigation, in which peculiarities of character are invariably transmitted from the parents to the offspring.

In founding argument on the innate character of different races, it is necessary to bear in mind the exceeding docility of man. His mental habits in mature life are the creatures of social discipline, as well as of inborn aptitudes, and it is impossible to ascertain what is due to the latter alone, except by observing several individuals of the same race, reared under various influences, and noting the peculiarities of character that invariably assert themselves. But, even when we have imposed these restrictions to check a hasty and imaginative conclusion, we find there remain abundant data to prove an astonishing diversity in the natural characteristics of different races. It will be sufficient for our purpose if we fix our attention upon the peculiarities of one or two of them.

The race of the American Indians is spread over an enormous area, and through every climate; for it reaches from the frozen regions of the North, through the equator, down to the inclement regions of the South. It exists in thousands of disconnected communities, speaking nearly as many different languages. It has been subjected to a strange variety of political influences, such as its own despotisms in Peru, Mexico, Natchez, and Bogota, and its

numerous republics, large and small. Members of the race have been conquered and ruled by military adventures from Spain and Portugal; others have been subjugated to Jesuitical rule; numerous settlements have been made by strangers on its soil; and, finally, the north of the continent has been colonized by European races. Excellent observers have watched the American Indians under all these influences, and their almost unanimous conclusion is as follows:—

The race is divided into many varieties, but it has fundamentally the same character throughout the whole of America. The men, and in a less degree the women, are naturally cold, melancholic, patient, and taciturn. A father, mother, and their children, are said to live together in a hut, like persons assembled by accident, not tied by affection. The youths treat their parents with neglect, and often with such harshness and insolence as to horrify Europeans who have witnessed their conduct. The mothers have been seen to commit infanticide without the slightest discomposure, and numerous savage tribes have died out in consequence of this practice. The American Indians are eminently non-gregarious. They nourish a sullen reserve, and show little sympathy with each other, even when in great distress. The Spaniards had to enforce the common duties of humanity by positive laws. They are strangely taciturn. When not engaged in action they will sit whole days in one posture without opening their lips, and wrapped up in their narrow thoughts. They usually march in Indian file, that is to say, in a long line, at some distance from each other, without exchanging a word. They keep the same profound silence in rowing a canoe, unless they happen to be excited by some extraneous cause. On the other hand, their patriotism and local attachments are strong, and they have an astonishing sense of personal dignity. The nature of the American Indians appears to contain the minimum of affectionate and social qualities compatible with the continuance of their race.

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Here, then, is a well-marked type of character, that formerly prevailed over a large part of the globe, with which other equally marked types of character in other regions are strongly contrasted. Take, for instance, the typical West African Negro. He is more unlike the Red man in his mind than in his body. Their characters are almost opposite, one to the other. The Red man has great patience, great reticence, great dignity, and no passion; the Negro has strong impulsive passions, and neither patience, reticence, nor dignity. He is warm-hearted, loving towards his master's children, and idolised by the children in return. He is eminently gregarious, for he is always jabbering, quarrelling, tom-tom-ing, or dancing. He is remarkably domestic, and he is endowed with such constitutional vigour, and is so prolific, that his race is irrepressible.

The Hindu, the Arab, the Mongol, the Teuton, and very many more, have each of them their peculiar characters. We have not space to analyse them on this occasion; but, whatever they are, they are transmitted, generation after generation, as truly as their physical forms.

What is true for the entire race is equally true for its varieties. If we were to select persons who were born with a type of character that we desired to intensify,—suppose it was one that approached to some ideal standard of perfection—and if we compelled marriage within the limits of the society so selected, generation after generation; there can be no doubt that the offspring would ultimately be born with the qualities we sought, as surely as if we had been breeding for physical features, and not for intellect or disposition.

Our natural constitution seems to bear as direct and stringent a relation to that of our forefathers as any other physical effect does to its cause. Our bodies, minds, and capabilities of development have been derived from them. Everything we possess at our birth is a heritage from our ancestors.

Can we hand anything down to our children, that we have fairly won by

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our own independent exertions? Will our children be born with more virtuous dispositions, if we ourselves have acquired virtuous habits? Or are we no more than passive transmitters of a nature we have received, and which we have no power to modify? There are but a few instances in which habit even seems to be inherited. The chief among them are such as those of dogs being born excellent pointers; of the attachment to man shown by dogs; and of the fear of man, rapidly learnt and established among the birds of newly-discovered islands. But all of these admit of being accounted for on other grounds than the hereditary transmission of habits. Pointing is, in some faint degree, a natural disposition of all dogs. Breeders have gradually improved upon it, and created the race we now possess. There is nothing to show that the reason why dogs are born staunch pointers is that their parents had been broken into acquiring an artificial habit. So as regards the fondness of dogs for man. It is inherent to a great extent in the genus. The dingo, or wild dog of Australia, is attached to the man who has caught him when a puppy, and clings to him even although he is turned adrift to hunt for his own living. This quality in dogs is made more intense by the custom of selection. The savage dogs are lost or killed; the tame ones are kept and bred from. Lastly, as regards the birds. As soon as any of their flock has learned to fear, I presume that its frightened movements on the approach of man form a language that is rapidly and unerringly understood by the rest, old or young; and that, after a few repetitions of the signal, man becomes an object of well-remembered mistrust. Moreover, just as natural selection has been shown to encourage love of man in domestic dogs, so it tends to encourage fear of man in all wild animals—the tamer varieties perishing owing to their misplaced confidence, and the wilder ones continuing their breed.

If we examine the question from the opposite side, a list of life-long

habits in the parents, might be adduced which leave no perceptible trace on their descendants. I cannot ascertain that the son of an old soldier learns his drill more quickly than the son of an artizan. I am assured that the sons of fishermen, whose ancestors have pursued the same calling time out of mind, are just as sea-sick as the sons of landsmen when they first go to sea. I cannot discover that the castes of India show signs of being naturally endowed with special aptitudes. If the habits of an individual are transmitted to his descendants, it is, as Darwin says, in a very small degree, and is hardly, if at all, traceable.

We shall therefore take an approximately correct view of the origin of our life, if we consider our own embryos to have sprung immediately from those embryos whence our parents were developed, and these from the embryos of *their* parents, and so on for ever. We should in this way look on the nature of mankind, and perhaps on that of the whole animated creation, as one continuous system, ever pushing out new branches in all directions, that variously interlace, and that bud into separate lives at every point of interlacement.

This simile does not at all express the popular notion of life. Most persons seem to have a vague idea that a new element, specially fashioned in heaven, and not transmitted by simple descent, is introduced into the body of every newly-born infant. Such a notion is unfitted to stand upon any scientific basis with which we are acquainted. It is impossible it should be true, unless there exists some property or quality in man that is not transmissible by descent. But the terms *talent* and *character* are exhaustive: they include the whole of man's spiritual nature so far as we are able to understand it. No other class of qualities is known to exist, that we might suppose to have been interpolated from on high. Moreover, the idea is improbable from *à priori* considerations, because there is no other instance in which creative power operates under our own observation at the

present day, except it may be in the freedom in action of our own wills. Wherever else we turn our eyes, we see nothing but law and order, and effect following cause.

But though, when we look back to our ancestors, the embryos of our progenitors may be conceived to have been developed, in each generation, immediately from the one that preceded it, yet we cannot take so restricted a view when we look forward. The interval that separates the full-grown animal from its embryo is too important to be disregarded. It is in this interval that Darwin's law of natural selection comes into play; and those conditions are entered into, which affect, we know not how, the "individual variation" of the offspring. I mean those that cause dissimilarity among brothers and sisters who are born successively, while twins, produced simultaneously, are often almost identical. If it were possible that embryos should descend directly from embryos, there might be developments in every direction, and the world would be filled with monstrosities. But this is not the order of nature. It is her fiat that the natural tendencies of animals should never disaccord long and widely with the conditions under which they are placed. Every animal before it is of an age to bear offspring, has to undergo frequent stern examinations before the board of nature, under the law of natural selection; where to be "plucked" is not necessarily disgrace, but is certainly death. Never let it be forgotten that man, as a reasonable being, has the privilege of not being helpless under the tyranny of uncongenial requirements, but that he can, and that he does, modify the subjects in which nature examines him, and that he has considerable power in settling beforehand the relative importance in the examination that shall be assigned to each separate subject.

It becomes a question of great interest how far moral monstrosities admit of being bred. Is there any obvious law that assigns a limit to the propagation of supremely vicious or supremely virtuous

natures? In strength, agility, and other physical qualities, Darwin's law of natural selection acts with unimpassioned, merciless severity. The weakly die in the battle for life; the stronger and more capable individuals are alone permitted to survive, and to bequeath their constitutional vigour to future generations. Is there any corresponding rule in respect to moral character? I believe there is, and I have already hinted at it when speaking of the American Indians. I am prepared to maintain that its action, by insuring a certain fundamental unity in the quality of the affections, enables men and the higher order of animals to sympathise in some degree with each other, and also, that this law forms the broad basis of our religious sentiments.

Animal life, in all but the very lowest classes, depends on at least one, and, more commonly, on all of the four following principles:—There must be affection, and it must be of four kinds: sexual, parental, filial, and social. The absolute deficiency of any one of these would be a serious hindrance, if not a bar to the continuance of any race. Those who possessed all of them, in the strongest measure, would, speaking generally, have an advantage in the struggle for existence. Without sexual affection, there would be no marriages, and no children; without parental affection, the children would be abandoned; without filial affection, they would stray and perish; and, without the social, each individual would be single-handed against rivals who were capable of banding themselves into tribes. Affection for others as well as for self, is therefore a necessary part of animal character. Disinterestedness is as essential to a brute's well-being as selfishness. No animal lives for itself alone, but also, at least occasionally, for its parent, its mate, its offspring, or its fellow. Companionship is frequently more grateful to an animal than abundant food. The safety of her young is considered by many a mother as a paramount object to her own. The passion for a mate is equally strong. The gregarious bird posts itself during its turn of duty as watchman on a tree,

by the side of the feeding flock. Its zeal to serve the common cause exceeds its care to attend to its own interests. Extreme selfishness is not a common vice. Narrow thoughts of self by no means absorb the minds of ordinary men; they occupy a secondary position in the thoughts of the more noble and generous of our race. A large part of an Englishman's life is devoted to others, or to the furtherance of general ideas, and not to directly personal ends. The Jesuit toils for his order, not for himself. Many plan for that which they can never live to see. At the hour of death they are still planning. An incompleting will, which might work unfairness among those who would succeed to the property of a dying man, harasses his mind. Personal obligations of all sorts press as heavily as in the fulness of health, although the touch of death is known to be on the point of cancelling them. It is so with animals. A dog's thoughts are towards his master, even when he suffers the extremest pain. His mind is largely filled at all times with sentiments of affection. But disinterested feelings are more necessary to man than to any other animal, because of the long period of his dependent childhood, and also because of his great social needs, due to his physical helplessness. Darwin's law of natural selection would therefore be expected to develop these sentiments among men, even among the lowest barbarians, to a greater degree than among animals.

I believe that our religious sentiments spring primarily from these four sources. The institution of celibacy is an open acknowledgment that the theistic and human affections are more or less convertible; I mean that by starving the one class the other becomes more intense and absorbing. In savages, the theistic sentiment is chiefly, if not wholly, absent. I would refer my readers, who may hesitate in accepting this assertion, to the recently published work of my friend Sir John Lubbock, "*Prehistoric Times*," p. 467—472, where the reports of travellers on the religion of savages are very ably and fairly collated. The

theistic sentiment is secondary, not primary. It becomes developed within us under the influence of reflection and reason. All evidence tends to show that man is directed to the contemplation and love of God by instincts that he shares with the whole animal world, and that primarily appeal to the love of his neighbour.

Moral monsters are born among Englishmen, even at the present day; and, when they are betrayed by their acts, the law puts them out of the way, by the prison or the gallows, and so prevents them from continuing their breed. Townley, the murderer, is an instance in point. He behaved with decorum and propriety; he was perfectly well-conducted to the gaol officials, and he corresponded with his mother in a style that was certainly flippant, but was not generally considered to be insane. However, with all this reasonableness of disposition, he could not be brought to see that he had done anything particularly wrong in murdering the girl that was disinclined to marry him. He was thoroughly consistent in his disregard for life, because, when his own existence became wearisome, he ended it with perfect coolness, by jumping from an upper staircase. It is a notable fact that a man without a conscience, like Townley, should be able to mix in English society for years, just like other people.

How enormous is the compass of the scale of human character, which reaches from dispositions like those we have just described, to that of a Socrates! How various are the intermediate types of character that commonly fall under everybody's notice, and how differently are the principles of virtue measured out to different natures! We can clearly observe the extreme diversity of character in children. Some are naturally generous and open, others mean and tricky; some are warm and loving, others cold and heartless; some are meek and patient, others obstinate and self-asserting; some few have the tempers of angels, and at least as many have the tempers of devils. In the

same way, as I showed in my previous paper, that by selecting men and women of rare and similar talent, and mating them together, generation after generation, an extraordinarily gifted race might be developed, so a yet more rigid selection, having regard to their moral nature, would, I believe, result in a no less marked improvement of their natural disposition.

Let us consider an instance in which different social influences have modified the inborn dispositions of a nation. The North American people has been bred from the most restless and combative class of Europe. Whenever, during the last ten or twelve generations, a political or religious party has suffered defeat, its prominent members, whether they were the best, or only the noisiest, have been apt to emigrate to America, as a refuge from persecution. Men fled to America for conscience' sake, and for that of unappreciated patriotism. Every scheming knave, and every brutal ruffian, who feared the arm of the law, also turned his eyes in the same direction. Peasants and artisans, whose spirit rebelled against the tyranny of society and the monotony of their daily life, and men of a higher position, who chafed under conventional restraints, all yearned towards America. Thus the dispositions of the parents of the American people have been exceedingly varied, and usually extreme, either for good or for evil. But in one respect they almost universally agreed. Every head of an emigrant family brought with him a restless character, and a spirit apt to rebel. If we estimate the moral nature of Americans from their present social state, we shall find it to be just what we might have expected from such a parentage. They are enterprising, defiant, and touchy; impatient of authority; furious politicians; very tolerant of fraud and violence; possessing much high and generous spirit, and some true religious feeling, but strongly addicted to cant.

We have seen that the law of natural selection develops disinterested affection of a varied character even in animals

and barbarian man. Is the same law different in its requirements when acting on civilized man? It is no doubt more favourable on the whole to civilized progress, but we must not expect to find as yet many marked signs of its action. As a matter of history, our Anglo-Saxon civilization is only skin-deep. It is but eight hundred years, or twenty-six generations, since the Conquest, and the ancestors of the large majority of Englishmen were the merest boors at a much later date than that. It is said that among the heads of the noble houses of England there can barely be found one that has a right to claim the sixteen quarterings—that is to say, whose great-great-grandparents were, all of them (sixteen in number), entitled to carry arms. Generally the nobility of a family is represented by only a few slender rills among a multiplicity of non-noble sources.

The most notable quality that the requirements of civilization have hitherto bred in us, living as we do in a rigorous climate and on a naturally barren soil, is the instinct of continuous steady labour. This is alone possessed by civilized races, and it is possessed in a far greater degree by the feeblest individuals among them than by the most able-bodied savages. Unless a man can work hard and regularly in England, he becomes an outcast. If he only works by fits and starts he has not a chance of competition with steady workmen. An artizan who has variable impulses, and wayward moods, is almost sure to end in intemperance and ruin. In short, men who are born with wild and irregular dispositions, even though they contain much that is truly noble, are alien to the spirit of a civilized country, and they and their breed are eliminated from it by the law of selection. On the other hand, a wild, untameable restlessness is innate with savages. I have collected numerous instances where children of a low race have been separated at an early age from their parents, and reared as part of a settler's family, quite apart from their own people. Yet, after years of civilized ways, in some fit of passion, or under

some craving, like that of a bird about to emigrate, they have abandoned their home, flung away their dress, and sought their countrymen in the bush, among whom they have subsequently been found living in contented barbarism, without a vestige of their gentle nurture. This is eminently the case with the Australians, and I have heard of many others in South Africa. There are also numerous instances in England where the restless nature of gipsy half-blood asserts itself with irresistible force.

Another difference, which may either be due to natural selection or to original difference of race, is the fact that savages seem incapable of progress after the first few years of their life. The average children of all races are much on a par. Occasionally, those of the lower races are more precocious than the Anglo-Saxons; as a brute beast of a few weeks old is certainly more apt and forward than a child of the same age. But, as the years go by, the higher races continue to progress, while the lower ones gradually stop. They remain children in mind, with the passions of grown men. Eminent genius commonly asserts itself in tender years, but it continues long to develop. The highest minds in the highest race seem to have been those who had the longest boyhood. It is not those who were little men in early youth who have succeeded. Here I may remark that, in the great mortality that besets the children of our poor, those who are members of precocious families, and who are therefore able to help in earning wages at a very early age, have a marked advantage over their competitors. They, on the whole, live, and breed their like, while the others die. But, if this sort of precocity be unfavourable to a race—if it be generally followed by an early arrest of development, and by a premature old age—then modern industrial civilization, in encouraging precocious varieties of men, deteriorates the breed.

Besides these three points of difference—endurance of steady labour, tameness of disposition, and prolonged development—I know of none that very

markedly distinguishes the nature of the lower classes of civilized man from that of barbarians. In the excitement of a pillaged town the English soldier is just as brutal as the savage. Gentle manners seem, under those circumstances, to have been a mere gloss thrown by education over a barbarous nature. One of the effects of civilization is to diminish the rigour of the application of the law of natural selection. It preserves weakly lives, that would have perished in barbarous lands. The sickly children of a wealthy family have a better chance of living and rearing offspring than the stalwart children of a poor one. As with the body, so with the mind. Poverty is more adverse to early marriages than is natural bad temper, or inferiority of intellect. In civilized society, money interposes her ægis between the law of natural selection and very many of its rightful victims. Scrofula and madness are naturalised among us by wealth; short-sightedness is becoming so. There seems no limit to the morbid tendencies of body or mind that might accumulate in a land where the law of primogeniture was general, and where riches were more esteemed than personal qualities. Neither is there any known limit to the intellectual and moral grandeur of nature that might be introduced into aristocratic families, if their representatives, who have such rare privilege in winning wives that please them best, should invariably, generation after generation, marry with a view of transmitting those noble qualities to their descendants. Inferior blood in the representative of a family might be eliminated from it in a few generations. The share that a man retains in the constitution of his remote descendants is inconceivably small. The father transmits, on an average, one-half of his nature, the grandfather one-fourth, the great-grandfather one-eighth; the share decreasing step by step, in a geometrical ratio, with great rapidity. Thus the man who claims descent from a Norman baron, who accompanied William the Conqueror twenty-six generations ago, has so minute a share of that baron's influence in his

constitution, that, if he weighs fourteen stone, the part of him which may be ascribed to the baron (supposing, of course, there have been no additional lines of relationship) is only one-fiftieth of a grain in weight—an amount ludicrously disproportioned to the value popularly ascribed to ancient descent. As a stroke of policy, I question if the head of a great family, or a prince, would not give more strength to his position, by marrying a wife who would bear him talented sons, than one who would merely bring him the support of high family connexions.

With the few but not insignificant exceptions we have specified above, we are still barbarians in our nature, and we show it in a thousand ways. The children who dabble and dig in the dirt have inherited the instincts of untold generations of barbarian forefathers, who dug with their nails for a large fraction of their lives. Our ancestors were grubbing by the hour, each day, to get at the roots they chiefly lived upon. They had to grub out pitfalls for their game, holes for their palisades and hut-poles, hiding-places, and ovens. Man became a digging animal by nature; and so we see the delicately-reared children of our era very ready to revert to primeval habits. Instinct breaks out in them, just as it does in the silk-haired, boudoir-nurtured spaniel, with a ribbon round its neck, that runs away from the endearments of its mistress, to sniff and revel in some road-side mess of carrion.

It is a common theme of moralists of many creeds, that man is born with an imperfect nature. He has lofty aspirations, but there is a weakness in his disposition that incapacitates him from carrying his nobler purposes into effect. He sees that some particular course of action is his duty, and should be his

delight; but his inclinations are fickle and base, and do not conform to his better judgment. The whole moral nature of man is tainted with sin, which prevents him from doing the things he knows to be right.

I venture to offer an explanation of this apparent anomaly, which seems perfectly satisfactory from a scientific point of view. It is neither more nor less than that the development of our nature, under Darwin's law of natural selection, has not yet overtaken the development of our religious civilization. Man was barbarous but yesterday, and therefore it is not to be expected that the natural aptitudes of his race should already have become moulded into accordance with his very recent advance. We men of the present centuries are like animals suddenly transplanted among new conditions of climate and of food: our instincts fail us under the altered circumstances.

My theory is confirmed by the fact that the members of old civilizations are far less sensible than those newly converted from barbarism of their nature being inadequate to their moral needs. The conscience of a negro is aghast at his own wild, impulsive nature, and is easily stirred by a preacher, but it is scarcely possible to ruffle the self-complacency of a steady-going Chinaman.

The sense of original sin would show, according to my theory, not that man was fallen from a high estate, but that he was rapidly rising from a low one. It would therefore confirm the conclusion that has been arrived at by every independent line of ethnological research—that our forefathers were utter savages from the beginning; and, that, after myriads of years of barbarism, our race has but very recently grown to be civilized and religious.