

ON THE APPLICATION OF THE PRINCIPLE OF NATURAL
SELECTION TO ANTHROPOLOGY,

IN REPLY TO VIEWS ADVOCATED BY SOME OF MR. DARWIN'S
DISCIPLES.*

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THE object of the present communication will be to show that the recent application of Mr. Darwin's hypothesis of "Natural Selection" to anthropology by some of Mr. Darwin's disciples, is wholly unwarranted either by logic or by facts.

I have before called the attention† of anthropologists to the remarkable fact that some Darwinites are Monogenists, and, what is still more remarkable, that some Darwinites in this country are even now teaching as a scientific induction, that there is, at the

* This communication was read before the Anthropological Department of the British Association for the Advancement of Science at Nottingham, on August 24th, 1866.

† Carl Vogt's *Lectures on Man*, 1864.

present day, but one species of man inhabiting the globe. We are told that Mr. Darwin's theory has had the delightful effect of "reconciling and combining all that is good in the Monogenistic and Polygenistic schools."* This is the estimate of Mr. Darwin's hypothesis put forward by Professor Huxley. So, too, Mr. Wallace observes: "It is my wish to show how the two opposing views can be combined so as to eliminate the error, and retain the truth in each, and it is by means of Mr. Darwin's celebrated theory of 'Natural Selection' that I hope to do this, and thus to harmonise the conflicting theories of modern anthropologists."†

Mr. Wallace has, however, not drawn attention to the fact that diversity of existing species of man does not necessarily involve diversity of origin, for he asks the double question: "Are the various forms under which man now exists primitive, or derived from pre-existing forms? or, in other words, is man of one or many species?"

Professor Huxley, however, is fully alive to this fact, and I shall therefore take his views, and see how far his reasoning is sound.

In the first place, does Mr. Darwin's hypothesis warrant the assumption of the unity of origin of man claimed for it by the two of his disciples from whose writings I have quoted?

Professor Huxley says that Polygenists have failed to show a specific difference between any two species of man, and that the test of hybridity has failed. These are, however, mere matters of opinion on which we need not dwell. It may be that Professor Huxley is not satisfied with the sort of evidence which the advocates for the diversity of species of man have adduced; but perhaps he may long exclaim, as Rudolphi did more than half a century ago: "I have for years taught the natural history of man, and taught it according to the prevalent opinion of the unity of the human species, as Blumenbach has apparently established it with so much learning; yet, just because I taught it, there arose doubts in my mind which so much increased that I finished by teaching the opposite opinion." I hope, too, that Professor Huxley may be able to say with this author: "There is no point of knowledge so dear to me which I am not willing to abandon as soon as I am convinced of its falsity." I feel sure, however, that he will agree with this celebrated author in the sentiments he has expressed, that "if there be a duty of a teacher, it is to tell his views openly."‡

But to go on from Professor Huxley's opinions to his statements

* "Methods and Results of Ethnology", by Professor Huxley, *Fortnightly Review*, No. 3.

† *Journal of the Anthropological Society*, vol. ii, p. clix.

‡ *Über die Verbreitung*, etc., 1812.

and his facts. Amongst the former, I find this assertion: "Surely no one can now be found to assert that any two stocks of mankind differ as much as a chimpanzee and orang do." Now, if Professor Huxley simply means in physical structure, this statement may have some truth in it; but if it is to be put forward as a general statement that in the totality of anthropological characters there is not so great a difference between any two species of man as between these two species of apes, I think that question may be one which is fairly open to debate. I have, however, some three years ago, made what I then believed, and still believe to be, a fair deduction on this subject in these words: "That there is as good reason for classifying the Negro as a distinct species from the European, as there is for making the ass a distinct species from the zebra; and if, in classification, we take intelligence into consideration, there is a far greater difference between the Negro and the European, than between the gorilla and chimpanzee."

Professor Huxley speaks of the "overwhelming evidence in favour of the unity of the origin of mankind afforded by anatomical considerations." In the first place, I contend, on the authority of very many anthropologists, that the evidence is not of the nature described; secondly, that many of our best anthropologists consider these grounds alone to point to an entirely different conclusion; and, thirdly, I believe that such characters only, however uniform, cannot of themselves afford "overwhelming evidence in favour of unity of the origin of mankind."

With regard to this last point, I am quite prepared to admit that man should be studied like any other object in nature. I do not claim for him any faculties which cannot be as clearly demonstrated as his physical characters; and, on the other hand, I contend that men of science have no right to base the classification of mankind either on anatomy or any other single point of observation. I say more. Anthropologists are bound to take the totality of the characteristics of the different types of man into consideration. Man is chiefly distinguished from the apes by his mental characters, and it is to these that we must look for assistance in our systems of classification.

Professor Huxley objects to the terms "varieties," "races" and "species," "because each of these terms implies, on the part of its employer, a preconceived opinion touching one of these problems, the solution of which is the ultimate object of science." So far very good; but Professor Huxley is not content with such negative advice, but goes on to recommend the use of the words "persistent modification" in the place of "race" or "species." But does not the term "per-

sistent modification" equally involve a theory on the part of those who use it? As Hollard long ago well remarked, "To say that mankind has become modified is to say that the varieties of the human species are derived from the same type and originated in the same cradle." Let Professor Huxley demonstrate, if he can, that the difference between the chimpanzee and the gorilla, "admitted to be distinct species by all zoologists," is a whit greater than the distinction between the Englishman and the Congo Negro, the Hottentot or the Australian.

I am also curious to learn what induced Professor Huxley to make the statement that "no one can now be found to assert that any two stocks of mankind differ as much as the chimpanzee and orang do," when one of the most eminent living naturalists—Louis Agassiz—has long held, and says he is prepared to verify, the very opinions which we are now told "no one will assert." Agassiz's words are,— "I am prepared to show that the differences existing between the races of men are of the same kind as the differences observed between the various families, genera, and species of monkeys or other animals; and that these different species of animals differ in the same degree one from another as the races of men—nay, the differences between distinct races are often greater than those distinguishing species of animals one from another." He then expressly asserts,— "The chimpanzee and gorilla do not differ more from one another than the Mandingo and the Guinea Negro; they together do not differ more from the orang than the Malay or white man differs from the Negro." He concludes most emphatically,— "I maintain distinctly that the differences observed among the races of men are of the same kind and even greater than those upon which the anthropoid monkeys are considered as distinct species."

Professor Huxley writes as though all men of science agreed with him respecting the unity of mankind. I contend, however, that the highest authorities on this subject are of an entirely different opinion. To give some evidence that such is the case, I will quote a few of the opinions of those who have devoted most attention to this subject, and are worthy to be regarded with respect by all.

G. Forster, writing in 1786, says,— "The supposition that there were several original species presents at all events no more difficulties than the assumption of a single pair. If the Negro originated in Africa, the whites in the Caucasus, and the Scythians or Hindoos elsewhere, centuries may have elapsed before they came in contact. In looking upon the Negro as a distinct species, There is a certain old book which gives no description of the Negro, and the great man, its reputed author, has perhaps not seen a genuine Negro. Yet any one who utters the probability of a plurality of species makes

an attack upon this old book, and is deemed an heretic. These heretics are wicked people, and led by ignorance. But I trust a philosophical jury will find me not guilty."

Voltaire said,—“the first white man who saw a Negro must have been vastly astonished, but the reasoners who would persuade me that the Negro is descended from the white man would astonish me still more.”

Rudolphi (1810) says,—“the possibility of 5,000,000 of men descending from a single couple cannot be denied, but only by a chain of miracles could it be realised. Accidents of all kinds could as much have occurred to the first pair, and the propagation of the race would then have been abandoned by accident. Nature does not proceed thus.”

Steffens writing in 1822, says,—“it is evident that empirical natural science is forced to assume a fundamental difference of the human species. Races are unchangeable; that, which by external influences, such as climate, mode of life, etc., undergoes a change of form, is a variety, not a race. Races may alter, but only by interbreeding. . . . As naturalists we repudiate the notion of endeavouring to reconcile our notion with religious tradition. We keep simply to the facts.”

Dr. Morton of America wrote thus more than fifteen years ago,—“After twenty years of observation and reflection, during which period I have always approached this subject with diffidence and caution; after investigating for myself the remarkable diversities of opinion to which it has given rise, and after weighing the difficulties that beset it on every side, I can find no satisfactory explanation of the diverse phenomena that characterise physical man, excepting in the doctrine of an original plurality of races.”

Professor Bérard in 1848 thus expresses himself,—“I cannot conceive how a mind free from prejudice and unembarrassed by certain extra scientific considerations impeding liberty of thought, can entertain any doubt on the primitive plurality of human types.”

Rémusat, writing in 1854, says, “if there did not exist a certain instinctive repugnance to the belief in an original and permanent inequality between human beings, and if our mind had not the tendency to simplify everything, the examples furnished by animals, and the difficulty of rationally and scientifically accounting for the varieties of the human species, the doctrines of unity would have been long abandoned. The knowledge of the general law of nature opposes this doctrine.”

Rémusat also asks, “can we form an idea of an earth adorned by a single plant of each species? Where did the animals find food upon an earth so naked? How could the first couple of fish have lived in a desert ocean? What we have said of animals and plants may be applied to mankind. Reason certainly sees no objection that the conservative profusion should also have presided at the formation of mankind, which may have appeared at once or successively in different

parts of the globe. This hypothesis, of which we do not undervalue the difficulties, better explains the difference of race. At any rate we cannot but hesitate to suppose that Providence would expose a single couple, and with it the whole future race, to be destroyed by some accident. Such is not the order of nature as science teaches us. If, then, our theory be rejected, we must suppose that in primitive times there reigned an order different from that furnished by actual data."

Burmeister, writing in 1856, says,—“After what has been stated we are justified in contesting the possibility of the descent of mankind from a single pair; we feel, on the contrary, compelled to assert the descent from many protoplasts. This may even be proved by the colour in different races. If all races descended from a single pair, all the shades must be derived from a fundamental colour, which in my opinion is impossible. If the black of the Negroes were really a burned white, and if the yellow of the Mongols were intermediate, the copper-red of the Americans would not suit this scale. It might be asked why have the Australians and Papuans become black, whilst the inhabitants of the Society and Friendly Islands living nearer the line remained yellow brown, etc. The whole theory (of the unity of species) appears to the unprejudiced inquirer in so unfavourable a light that no one would have entertained the idea of descent from a single pair, had it not been taught by the Mosaic history of the creation. In order to sustain the authority of the Scriptures, a number of authors not sufficiently acquainted with the results of modern researches have been induced to defend the myths of the Old Testament. The number of these defenders seem to increase in proportion as science rejects this dogma.”

Giebel (1859) asks,—“do all men, zoologically considered, belong to one species? This question is frequently answered from a zoological standpoint in the affirmative. The more carefully the comparison (between the races) is made, the more striking are the differences. They affect the whole skeleton, the vertebræ, column, shoulder, pelvis, and limbs, and upon these again depends the form of the soft organs, so that the race differences, both external and internal, are so deeply marked, that the zoologist sees no more races, but so-called typical species. Mere zoology can come to no other result than to assume specific differences among mankind.”

Dr. Robert Knox in 1862 thus expressed himself after studying the subject for forty years:—

“Men are of different races palpably distinct. These races are entitled to the name of species. These species, though distinct in themselves, form groups so as to constitute one or more natural families. As in animals so in man, who also is one. The affiliated races, although strongly resembling each other, yet differ remarkably, as well physically as morally, in a way wholly inexplicable, but on the principle that essentially they are not of distinct species or races, however originating. This difference in moral and physical qualities so remarkably distinguishing even the European races (mostly formed into

nations) is best seen by referring to their various forms of civilisation, to their religious follies or belief, their antagonism to each other, and generally to the view they each take of the external world,* which constitutes or gives a tone, as we say, to the character of their civilisation. . . . Distinct epochs or acts of creation imply a miracle; and miracles are impossible. The philosophy of Goethe, adopted by Geoffroy St. Hilaire, Oken, and some popular writers, is most probably the correct one; but the really scientific men do not as yet look on the theory as established on a strictly scientific basis. . . .”

It has long been the fashion for men of science not specially acquainted with the science of man to declare that the great and learned Prichard's conclusions on this subject ought to have considerable weight on the question of the diversity of races. There are many indications in Dr. Prichard's writings that even he was becoming alive to the difficulty of his own theory, for in one place he remarks :†—

“If it should be found that within the period of time to which historical testimony extends the distinguishing characters of human races have been constant and undeviating, it would become a matter of great difficulty to reconcile the conclusion (*i.e.* the unity of all mankind) with the inference already obtained from other considerations.”

Now ever since the time this was written, some twenty years ago, all researches have tended to show that from the very earliest dawn of history races have existed as they are now. I believe that there is not a single authenticated example of such not being the case. Indeed, the tendency of modern research is to show that the differences in mankind were formerly at least as great physically as they are now. As Dr. Nott has well remarked :—

“History, traditions, monuments, osteological remains, every literary record and scientific induction, all show that races have occupied substantially the same zones or provinces from time immemorial.”‡

Or as Mr. Luke Burke some eighteen years ago§ remarked :—

“Let there be pointed out any one nation or race of men which has changed its physical peculiarities, or any portion of them, without mixing its blood, and we give up our theory. Or let there be pointed out any one nation or race which once existed in a barbarous state, and subsequently raised itself to civilisation without mixing its blood or receiving instruction from foreigners, and we give up our theory. . . . the lesson all history and all human experience have been teaching for ages; but carried away by a favourite dream, men have slighted or misunderstood this lesson. Where, we ask, are the historic evidences of universal human equality or unity? The farther we trace back the history of the past, the more broadly marked do we find all human diversities. . . . Such are the lessons taught by universal

* *Races of Man*, 2nd ed., p. 591.

† *Physical History of Mankind*, preface, vol. iii.

‡ *Types of Mankind*, p. 77.

§ *Ethnological Journal*, 1848, p. 30-33.

history ; lessons which speak not of human equality and unity, but of great and permanent diversities among mankind."

Carl Vogt,* one of the last and most logical writers on anthropology, says on this subject :—

"However much we may indulge in theological speculations on the origin and differences of mankind, however weighty proofs may be adduced for the original unity of the human species, this much is certain, that no historical nor, as we have shown, geological data can establish this dream of unity. However far back our eye reaches, we find different species of man spread over different parts of the globe."

If such a question as the unity or plurality of origin, or unity or plurality of existing species, could be settled by the opinions of those who from their study and other opportunities are capable of understanding the giving an opinion on their subject, the decision would, I believe, be on the side of the polygenists.

Dr. Prichard gave a very good reason why we in England did not hear more of the diversity of race, when he says of such views,—“If these opinions are not every day expressed in this country, it is because the avowal of them is restrained by a degree of odium that would be excited by it.”† There is one conspicuous instance of scientific honesty and consistency to be found in England, of a man who for half a century has manfully endeavoured to combat popular prejudice. I allude to my esteemed friend, Mr. John Crawfurd. May he long be spared to battle against the new form of monogenism which is attempting to arise amongst us. May he live to see the time when men of science will no longer lend the sanction of their names to the doctrine of the intellectual and moral equality of the different species of man. But not to dwell further on opinions, let us examine the arguments and facts in favour of unity on the Darwinian hypothesis.

Professor Huxley apparently declines to admit mental phenomena as any part of his principles of anthropological classification, but is he, or anyone else, justified in doing so ?

Some time since Professor Huxley remarked,—“It is quite certain that the ape, which most nearly approaches man in the totality of its organisation, is either the chimpanzee or the gorilla ; and as it makes no practical difference, for the purpose of my present argument, which is selected for comparison,”‡ etc. This is an important admission, and in a measure justifies the rejection of the hypothesis of the unity of origin of mankind.

Not long since the late Professor Rudolph Wagner remarked,

* *Lectures on Man*, p. 422.

† *Nat. Hist. of Man*, 1848, p. 6.

‡ *Man's Place in Nature*, p. 70.

“Just before Darwin’s book appeared, the theory of the possibility or probability of the different races of mankind having descended from a single pair was considered as perfectly antiquated, and as having lagged behind all scientific progress; whilst now, to judge from the applause with which Darwin’s theory is received, there is nothing more certain than the inference that both ape and man had, from their single progenitor, a form intermediate between ape and man.” On this it has been well remarked by Carl Vogt, “Never was there a more incorrect inference”; and he adds, “No Darwinist—if we must call them so—has either raised that question or drawn the above inference, for the simple reason that it neither accords with the facts nor the consequences.”* And yet we find that Professor Huxley contends that the unity of origin of mankind is “overwhelming”; and Mr. Wallace says “Man may have been, indeed I believe must have been, once a homogeneous race.” These are, indeed, startling assertions; and we ask supplicatingly when was this state? and why *must* mankind once have been of one race? First of all let us question Professor Huxley, and ask on what data or by what process of reasoning he arrives at the conclusion of a unity of the origin of mankind? We are asked to “extend, by long epochs, the most liberal estimate that has yet been made of the antiquity of man,”† as no form of the doctrine of progressive development could be correct. At that time, three years ago, only about nine millions of years had been claimed for man’s antiquity. More recently, Professor Huxley has told us that since man has appeared,—

“The greater part of the British islands, of Central Europe, of Northern Asia, have been submerged beneath the sea and raised up again. So has the great desert of the Sahara, which occupies the major part of northern Africa. The Caspian and the Aral seas have been one, and their united waters have probably communicated with both the Arctic and Mediterranean oceans. The greater part of North America has been under water, and has emerged. It is highly probable that a large part of the Malayan Archipelago has sunk, and its primitive continuity with Asia has been destroyed. Over the great Polynesian area subsidence has taken place to the extent of many thousands of feet,—subsidence of so vast a character, in fact, that if a continent like Asia had once occupied the area of the Pacific, the peaks of its mountains would now show not more numerous than the islands of the Polynesian Archipelago.”‡

After being called on to believe in “half-a-dozen Atlantises” we are told that “these rude and primitive families were thrust, in the course of a long series of generations, from land to land, impelled by encroach-

* P. 464.

† *Man’s Place in Nature*, p. 159.

‡ *Fortnightly Review*, p. 276.

ments of sea or of marsh, or by a severity of summer heat or winter cold, to change their positions," and concludes the eloquent advocate of a form of Darwinism exquisitely imaginative, "what opportunities must have been offered for the play of natural selection in preserving one family variety and destroying another." And all this must be done to reconcile the original unity of origin of mankind: but not, I contend, on Darwinian principles, which lead to an entirely different conclusion.

We search in vain for any single fact adduced by Professor Huxley to show that man was ever at all different from what he is at present. On the contrary, we find the most positive statements in his own words that "there is not a particle of proof that the cutaneous change thus effected can become hereditary any more than that the enlarged livers, which plague our countrymen in India, can be transmitted; while there is very strong evidence to the contrary." Mr. Wallace, however, tells us that to be a Darwinite on his principles it is necessary to grant us a first condition—"That peculiarities of every kind are more or less hereditary," a proposition which he says "cannot be denied."

But Professor Huxley goes on to make an important admission with regard to the difference in mankind in these words:—"And as for the more important modifications observed in the structure of the brain, and in the form of the skull, no one has ever pretended to show in what way they can be effected directly by climate." So we have *important* modifications in the brain and skull of mankind. It is of course necessary that they shall be "modifications" of some pre-existing type; but it is well to gain the admission that the skull and brain differ in mankind. Let there be added to these the psychological characters, and we may yet have permission and a justification from Professor Huxley to say that mankind is composed of several species. In return for this we may then be able to compliment Professor Huxley on being a logical disciple of his great master.

I agree with the author of the above remarks with regard to the unsatisfactory nature of the supposed process by which climate is said to modify both skull and brain. That "no one has ever attempted to show" how these can be effected by climate is, perhaps, hardly correct. Several such attempts have been made from Hippocrates downwards, but with most unsatisfactory results. Indeed popular writers on this subject appear to be following the reckless speculations of some of our teachers in science. Thus Dr. George Moore, in his work just published on that interesting creature "The first Man," says with charming simplicity and modesty, "How, then, is a Negro produced? we answer in a word, by climate." But, like many other speculators, he does not

venture on any evidence except to give the opinion of Mr. Winwood Reade on the supposed degeneration of the Negroes on the coast, and he very fairly adds to the above statement, "a little patience will be required in adducing the proof."

But let us endeavour to discover the facts on which Professor Huxley bases his hypothesis of unity of origin of mankind. We have quoted from his speculations, and we now turn to his facts. We must then attempt to reconcile these as well as we can.

First of all, what is the evidence for this extreme antiquity advocated for man? I do not intend to enter into the value of the statements I have before quoted with regard to submergence and elevation of these islands and other parts of Europe. I am content to accept the conclusions of the geologist on this point, be they what they may. Granted, then, man existed millions of years ago, how does that assist the hypothesis of unity of origin of man? It is quite true that fossil apes have been already found from India to England, but the remains of man have not yet been found which differ perceptibly from the existing inhabitants of each continent. Professor Huxley admits that both "history and archæology are absolutely silent," and adds, "For half the rest, they might as well be silent for anything that is to be made of their testimony. And, finally, when the question arises as to what was the condition of mankind more than a paltry two or three thousand years ago, history and archæology are for the most part mere dumb dogs." He not only admits that the races of man now existing are "substantially what they are now," but remarks, "it is wonderful how little change has been effected by these mutual invasions and intermixtures," and says, "So far as history teaches us, the populations of Europe, Asia, and Africa were twenty centuries ago just what they are now in their broad features and general distribution. The evidence yielded by archæology is not very definite yet, but so far as it goes it is much to the same effect. . . . Beyond the limits of a fraction of Europe palæontology tells us nothing of man or his works." To sum up our knowledge of the past of man, says the same writer, "So far as the light is bright, it shows him substantially as he is now; and when it grows dim, it permits us to see no sign that he was other than he is now."

I have quoted somewhat at length from this author because it is as well we should see the list of facts on the strength of which mankind are called on to believe in their unity of origin. Not a fact in history or archæology can be brought forward to its support by its most accomplished advocate. We are asked indeed as men of science to have faith, because on some curious process of reasoning it must have been as they teach. We entirely fail to see a particle of foundation either in reason or

analogy for the unity hypothesis on Darwinian principles. We are called on to believe with those disciples in the unity of origin of mankind simply as an article of faith. There is no more foundation for a dogma promulgated on such evidence than for that taught by the majority of theologians in the present day. All we know is, that all science teaches man to be now much as he was when we first catch a glimpse of him at the dawn of history ; and palæontology teaches us that there were fossil apes. Between these two facts all is darkness.

Professor Huxley asks,—“In still older strata do the fossilised bones of an ape more anthropoid, or a man more pithceoid, than any yet known await the researches of some unknown palæontologist?” “Time will show,” he answers ; but, without waiting to see what time will show, we are called on to believe that man’s place in nature is discovered, and that all the diversities in mankind are “persistent modifications” of some pre-existing homogeneous race.

Some of the processes of reasoning adopted by Professor Huxley are eminently curious and suggestive. Thus in the following sentence which indicates some trepidation as to the soundness of his own views, we read,—“It may be safely affirmed that even if the differences between men are specific, they are so small, that the assumption of more than one primitive stock for all is altogether superfluous.” Now it might be thought that if Professor Huxley had been a loyal disciple of Darwin he would not have been so very particular in exacting such rigid specific characters for all his species. Besides, if differences amongst men are “specific,” it is in vain to plead “they are so small.” As Vogt has well observed,—“the notion of species neither is nor can be fixed,” and that “practically every author conceives it differently.” What are species in London become varieties in Paris. But a still more remarkable mode of reasoning is brought forward on behalf of Darwinism. The science of anthropology is yet destined to demonstrate the truth to Darwinism ! Professor Huxley thinks that the question of the phenomena of human hybridity rests on a very “unsafe foundation,” and that it failed notably in the case of the Pitcairn Islanders ; but “it would not be at all astonishing if, in some of these separated stocks, the process of differentiation should have gone so far as to give rise to the phenomena of hybridity.” First of all we must get this mythical unity of races, then separate them ; if there be any sign of hybridity—that proves the truth of Darwinism ! Hybridity in mankind is thus to be used to establish the truth of Darwinian principles ! The simple facts are not to be taken as they are, but we must accept a unity as an article of faith, and then believe in the truth of “natural selection” on the strength of their gratuitous assumption. Professor Huxley has absolutely put such conclusions

forward. His words are, "satisfactory proof of the existence of any degree of sterility in the unions of members of two of the 'persistent modifications' of mankind, might well be appealed to by Mr. Darwin as crucial evidence of the truth of his views regarding the origin of species in general."

That a man so eminently logical as Mr. Darwin has shown himself in many cases to be, would ever attempt such a thing as calling in the evidence afforded by the phenomenon of human hybridity to support his views on the origin of species in general, is a proposition I cannot at all agree to. But I wish to put it to other disciples of that great naturalist, if they consider that the phenomenon of hybridity in the different races or species of man proves the truth of "natural selection"? Personally I consider with Messrs. Broca, Vogt, Pouchet, and many others, that the existence of "some degree of sterility in the unions" of mankind is proved; but will any one support Professor Huxley in his assertion that Mr. Darwin is justified in assuming that human hybridity is "crucial evidence of the truth of his views regarding the origin of species in general"?

I shall be very sorry for Mr. Darwin's theory if that is the sort of "crucial evidence" it requires for its establishment. Supposing, however, we grant for the sake of argument, that the different species of man produce perfectly fertile hybrids which are indefinitely prolific, this does not prove the unity of man's origin. All naturalists know well enough that different species produce sometimes fertile offspring, while the offspring of universally acknowledged varieties are frequently infertile. What we may believe on such a subject is, that on crossing any two species of man, the same law follows as between any other species of animal. They are very properly called half-breeds, and always partake of the characters of both parents, and never resemble one only.

I have already alluded to Mr. Wallace's opinion that mankind must at one time have been of one homogeneous race, but in justice to that gentleman I must admit that he has very fairly acknowledged that we can only even conceive this by what he calls a "powerful effort of the imagination." His words are,*—"By a powerful effort of the imagination, it is just possible to perceive him at that early epoch existing as a single homogeneous race without the faculty of speech, and probably inhabiting some tropical region." I ought also to state that Mr. Wallace's views were advanced before those of Prof. Huxley. Mr. Wallace claims an equal antiquity for man with his colleague, and remarks,—“These considerations, it will be seen, enable us to place the origin of man at a much more remote geological

* *Journal of Anthropological Society of London*, vol. ii, p. clxv.

epoch than has yet been thought possible." So this author is not satisfied with nine millions of years, or even the large extension of that time demanded on this slight antiquity by Professor Huxley. It was in these remote ages that Mr. Wallace considers man to have been of one race; *before*, to quote the author's own words:—

"He had not yet acquired that wonderfully developed brain, the organ of the mind, which now, even in his lowest examples, raises him far above the highest brutes, at a period when he had the form but hardly the nature of man, when he neither possessed human speech, nor those sympathetic and moral feelings which, in a greater or less degree everywhere now distinguish the race. Just in proportion as these truly human faculties became developed in him, would his physical features become fixed and permanent, because the latter would be of less importance to his well being; he would be kept in harmony with the slowly changing universe around him by an advance in mind rather than by a change in body. If, therefore, we are of opinion that he was not really man till these higher faculties were developed, we may fairly assert that there were many originally distinct races of man; while, if we think that a being like us in form and structure, but with mental faculties scarcely raised above the brute, must still be considered to have been human, we are fully entitled to maintain the common origin of all mankind."

Now by a "powerful effort of the imagination" can we conceive the possibility of there ever existing a "being like us in form and structure, and yet with mental faculties scarcely raised above the brute?" Mr. Wallace takes back the unity hypothesis much further than Professor Huxley, for he contends that we must go back for this to a period when the animal we now call man had not speech, moral feelings, or even the nature of man. If we like to consider such a creature MAN, as Mr. Wallace is inclined to do, then he says we may be "fairly entitled to maintain the common origin of all mankind." If, however, this creature without the "nature of man" was a brute, Mr. Wallace allows, "we may fairly assert that there were many originally distinct races of men."

I maintain that the mythical creature described by Mr. Wallace has no right to be called man—not possessing his chief distinguishing characteristics, and if this be acknowledged, then Mr. Wallace is an advocate for "many originally distinct races of man." But Mr. Wallace, after asserting that mankind must at one time have been of a homogeneous race, and then going on to show that it was long before he had the "nature of man," follows up his reasoning by contending that the influence of the mind has stopped the process going on before the advent of intelligence, and that this one homogeneous race is now again reverting to its original state. The human family have been as it were out on an excursion. Speaking of the diverse

species of men as man, he says, "his mental constitution may continue to advance and improve till the world is again inhabited by a single homogeneous race, no individual of which will be inferior to the noblest specimens of existing humanity."

Such are the views of two of Mr. Darwin's most eminent disciples. Are these conclusions warranted by Mr. Darwin's hypothesis? Taking Mr. Wallace's view of the case, does the logical application of the theory of "natural selection" lead to the conclusion that existing mankind is gradually becoming of one race? I do not ask if this is a fact; that is not the point in question. But does the application of Darwinian principles lead to this conclusion?

Professor Huxley, we have seen, proposed to establish the truth of Darwinism by finding sufficient difference in the races of man to exhibit the phenomenon of hybridity; but his colleague will disappoint him if he does not soon do this, for we are again reverting to one homogeneous race. I wish now emphatically to ask which, if either, of the views of Mr. Darwin's disciples is in accordance with his own theory? For my own part I must confess that I think neither the views of Professor Huxley nor of Mr. Wallace are logical results of the working out of the principles of natural selection as propounded by Mr. Darwin.

Another curious application of a portion of the theory of natural selection is that propounded in a work by Mr. Andrew Murray.* Mr. Murray's speculations are more extraordinary than those of the more thorough followers of Mr. Darwin. He supplies anthropologists with some wonderful information in these words:—

"We have seen a race of man formed under our own eyes, the Anglo-, or rather the Europeo-American nation, as distinct and well-marked a race as any other; and yet the change has been effected over the whole region in which it occurs at the same time. The race has apparently not been produced by an American being born from an Englishman, and then by his propagating young Americans, but hundreds of thousands have had the same impress affixed upon them over the length and breadth of the land at the same time."

After telling us that he has recently become nearly a convert to Darwinism, he goes on to say:—

"Now, according to the reasoning in which I trusted there should have been no Anglo-American nation, the type should have been frittered away in a thousand different directions, a congeries of all kinds of different degrees of change should have been jumbled up together, leaving no distinguishable characteristic by which to know the American from any other nation. And yet, there he is, a nation, *per se*; known to *Punch*, known to passport officers, known to ourselves, easily identified, easily figured, and easily caricatured."

* *The Geographical Distribution of Mammals*, 1866.

Now it is perhaps useless to attempt to argue seriously with an author who uses the words "race," "nation," and "type" as convertible terms. Nor need I dwell on the opinions of a writer who seems to have taken his knowledge of anthropological types from *Punch*.

This author, however, tells us seriously that the Europeo-American people are "as well marked a race as any other." Such statements coming forth under the garb of science are really melancholy. Nor are the author's views any improvement on those propounded by other of Mr. Darwin's disciples. We can as easily believe in the change being effected by a miracle, as agree with the author that the change in the Americans was "affixed upon them over the length and breadth of the land at the same time."

But what makes this matter somewhat serious, is the fact that the author's change of opinion with regard to Darwinism is based on the change observed in the American people. He absolutely goes so far as to say of the passage I have quoted, "Such an *argumentum ad hominem* is hard to get over."

The author having informed us of the fortunate circumstance in the present state of science, that he is "not greatly concerned to explain the exact mode of operation of the laws evolving new species," goes on to say: "I have come to the conclusion to accept the fact that nature can produce a new type without our being able to see the marks of transition, and that she can alter a whole race simultaneously without its passing through the phase of development from an individual in whom the entire change was first perfected."* Such is the author's creed, and he no doubt believes in it if, like myself, he does not understand how such a thing is possible.

To Mr. Murray, however, belongs the honour of being the first man of science who has come forward and declared that there is a fact in historical anthropology which lends any countenance to the truth of the theory of development by "Natural Selection."

The change observed in Europeans who have settled in America is both a delicate and difficult subject. I do not attempt to deny the change in many cases; but my researches and observations lead me to believe that the change is not of that uniform character which the author asserts. On this point, however, I speak with some diffidence, as I have not been in America. I have, however, failed entirely to see the uniform change described by Mr. Murray in those Americans who have come under my own observation. On the contrary, I am of opinion that the types at present existing in America are as diverse as those now existing in those portions of Europe from which they originally departed.

I have never yet seen any reason to change my views, which I imbibed from the late Dr. Knox, and which are accepted by many other modern anthropologists, that the change observed in the children of those Europeans who have settled for some generations in America is to be explained by the hypothesis of degeneration or deterioration. The real significance of the change we often observe is a very fair question to discuss; but to assume we have as yet a new type, or even a new race, "as well marked as any other," is utterly unworthy of serious consideration.

Mr. Murray is not content to offer to the world his own speculations, but undertakes to pronounce the views held by Dr. Knox to be "the dream or fancy of a clever but eccentric man."* Such a remark requires no comment from me. This author also tells us that Dr. Knox was "not, perhaps, too scrupulous as to the authenticity of his facts;" but I search in vain through the writings of that author to find such reckless statements as those advanced on behalf of Darwinism by Mr. Andrew Murray.

I see from some recent publications that such speculations as those to which I have called attention are just now finding favour with a few more or less scientific men on the other side of the Atlantic.

Thus, Mr. Hudson Tuttle, who is not unknown as an author, has just written a work entitled, "*On the Origin and Antiquity of Physical Man scientifically considered.*"† The addition of the last two words are certainly much to be commended to other writers on the origin of man. In addition to the above, we have also the following important statement of what the work contains in these words: "Proving man to have been contemporary with the mastodon, detailing the history of his development from the domain of a brute, and dispersion by great waves of emigration from Central Asia." In the following sentence we find the result of Mr. Wallace's teaching: "Applying the principles which govern the production of species of animals to savage man, to whom the name *brute, or man are alike applicable*, we shall endeavour to show how from this savage sprang the various races into which mankind are divided." The second conclusion of his work‡ must be eminently satisfactory to all Darwinians, *if true*: "There is more difference between the lowest man and highest Simiæ than between the highest and lowest Simiæ, or between the lowest and highest man. There is a perfect gradation in bony structure and in brain." The third conclusion is equally startling: "History unites mankind at a common source; locates their origin where the highest members of the animal kingdom are found." The fourth is still more remarkable: "The 'struggle for existence' indicates the

* P. 9.

† Boston, 1866.

‡ P. 257.

process by which the progress observed might have been evolved." We find, too, in this work it is stated by this last attempt to apply Darwinism to account for the origin of man, that "the inductions of science beautifully harmonise with the sacred traditions of mankind." I have no wish, however, to make either Professor Huxley or Mr. Wallace responsible for all this nonsense. I merely quote it as a caution to men of science against promulgating speculations respecting the origin of mankind before they have the slightest data on which to found them.

In France, happily, such speculations are estimated at their true value. The anthropologists of that country know too well the business and the methods of science to be found wasting their time in promulgating dreams respecting man's origin. They are content, with the majority of anthropologists in this country, to wait in patience for the discovery of the "some unborn palæontologist" spoken of by Professor Huxley.

In Germany, too, I am glad to see that a protest is being raised against the premature speculations of some of Mr. Darwin's disciples. In the new German periodical for anthropology just started, Professor Ecker in his introduction has alluded to that subject in these terms.* Speaking of the theories of man's origin, he says :

"This problem will have to be solved partly by the anatomist and partly by the psychologist. On the one hand, there will be requisite the most careful comparative anatomy of the body, especially the minute structure of the brain ; and, on the other hand, the analysis of psychical functions. However much may have been done in this direction, much more remains to be done before we can indulge in any hopes to solve these final questions in relation to the genetic connection between man and the anthropoid animals, which have by the followers of Darwin been proposed too early. Whether palæontology and the theory of development will throw some light into this obscurity remains yet to be seen. But surely it is not the task of a serious science prematurely to discuss questions to answer which we lack materials."

It is to be regretted, however, that there are many writers in Germany who have recently written as though the question of man's place in nature were settled. The language employed by these writers does not differ greatly from what we have sometimes heard used against those who differ from them in this country. An illustration of this will be found in a work recently published by Dr. Reich. It will be seen from this, that we must not dare to classify man in a new order or kingdom, but must accept the classification of Linnæus as developed by Professor Huxley, or we shall be called some very

* *Archiv für Anthropologie*, Nos. 1 and 2, 1866.

hard names. Dr. Reich says: "What man is, and what position he occupies in nature, are questions that have at all times engaged the attention of anthropologists; theologians, philosophers, and jurists have also discussed it with but little profit to the science."

"Numerous ancient and modern authors have written long treatises concerning the pretended elevation of man above other animals, by drawing parallels between them, showing how far removed man was even from the ape. They talked of specific difference between man and brute ascribed to the former an immortal soul, to the latter a mortal soul, and denied to animals all mental qualifications. They even went so far as to assign to man a separate kingdom by the side of the animal, vegetable, and mineral kingdoms.

"But comparative anatomy and physiology, chemistry and natural philosophy, have established what has been surmised by great minds, and disposed of the dreams of false apostles of science, and put an end to the miserable inferences of such incompetent observers."

After quoting from the author of *Man's Place in Nature*, Dr. Reich goes on:

"Thus far Huxley. His words sufficiently indicate the position man occupies in the animal world. He shows that man stands not above the animals, but is himself an animal, and differs from his cousins, the apes of the old world, less than these differ from the other apes. This is a cold shower-bath for human pride! * * *

"Comparative anatomy, the guiding star in the knowledge of organised beings, has shown with mathematical certainty, that there is no member of the animal kingdom which is separated by a gulf from what is next to it; everywhere there is an uninterrupted transition. Nature takes no leaps; this is the great truth we ought always to bear in mind. Allied to comparative anatomy, physiology, by throwing light on the functions of the organs and the development of the individual, furnishes the key to the explanation of phenomena which, when not comprehended, engender in the ignorant, thoughts of mysterious forces, and other ideas of a heated imagination."

Happily, such teaching as this does not at present exert any great influence in this country. I must leave it for the audience to decide which are the false apostles and suffer from the effects of a "heated imagination;" those who assert that anatomy has shown with mathematical certainty that there is no gulf separating the different members of the animal kingdom; that nature takes no leaps; and that we know all the forces at work in nature: or those who, like myself, do not see sufficient evidence to establish either of these positions. With regard, however, to the charge that we must believe in mysterious forces if we do not accept the theory of natural selection, I must enter my protest against such reasoning.

Is the theory of "natural selection," as propounded by Mr. Darwin, sufficient to explain the origin of either races or species of man? I am

fully aware that much of the dissatisfaction which exists amongst English anthropologists with regard to Mr. Darwin's theory is greatly to be accounted for by what I contend to be the illogical manner in which that naturalist's disciples have attempted to work out that theory when applied to the origin of man as to comparative anthropology. Many of the present objections to Mr. Darwin's theory will be removed when it is worked out in the manner I have hinted.

At present, however, we are quite unable to show the causes which produce the formation of the different races of which the different species of man is composed. I cannot think that any advance can be made in the application of the Darwinian principles to anthropology until we can free the subject from the unity hypothesis which has been identified with it, especially by the influence of Professor Huxley. Professor Carl Vogt is doing all he can to show the fallacy of the unity hypothesis on the continent; and, as a logical Darwinite, well points out that the human type is not approached by any one ape in all points. He says,—“This much is certain, that each of these anthropoid apes has its peculiar characters by which it approaches man If, in the different regions of the globe, anthropoid apes may issue from different stocks, we cannot see why these different stocks should be denied further development into the human type, and that only one stock should possess this privilege. The further we go back in history the greater is the contrast between individual types, the more opposed are the characters.” This author thinks there is a tendency to unity; but he gives an adequate agent for such a supposed change in the fusion of the different species, viz. intermixture. I am quite willing to grant that the cause is adequate; but, as I interpret Darwinism, I consider that although some races may become diminished, there are at the same time others in course of formation. Do we not even now see in different classes of men a tendency to perpetuate their own characteristics? In fact, a coming unity rests on about the same evidence as a past unity.

Andreas Wagner not long since made some very sensible remarks on the absurdities which many distinguished naturalists have uttered, from Oken downwards, when they venture to demonstrate the genesis of man. He well remarks,—“It is therefore better to admit the insufficiency of our capacity, than to make ourselves ridiculous by forming hypotheses on processes which are hidden from us.”

Dr. George Moore has recently well observed,—“Man as he is has not yet been accounted for by philosophers.” He, however, goes on to say,—“If they do not possess power of mind equal to the explanation of a fact so common among natural phenomena as the present existence of themselves, the first step towards a correct anthropology

has not been taken." Now the question of the origin of man is not the *first*, but the *last* problem of anthropological science. He says that before we go further we ought, "from a knowledge of their own qualities as human beings, to say why they were made, who made them, and what is likely to become of them." In fact, that we ought to learn to read before we learn the alphabet. Nothing can be more deleterious to the cause of truth and science than that such views should go forth to the world unchallenged by men of science.

But while differing on some points from Professor Huxley, I feel bound to add that I for one do not join in the outcry which has been raised in some quarters against the manner in which he has studied and described man. On the contrary, I admire the honesty and moral courage he has displayed. I have only to complain of what I conceive to be his incorrect reasoning and his occasional dogmatic assertions.

No one can have read with greater feelings of indignation than myself, a charge which Dr. Moore has made more than once in his recent work *The First Man, and his Place in Creation*, that Professor Huxley "had undertaken his researches and assumed his character of seer and prophet on the ground of prejudice against Christianity." Such a charge is altogether too contemptible for Professor Huxley to notice; and I feel sure that every scientific man will agree with me in protesting against such a base insinuation. To impute motives for scientific opinions is not only unscientific, but most ungenerous.

It may not unnaturally be asked by those who hear my opinions on this subject, why I have undertaken to contest so strongly the views put forward by some of Mr. Darwin's disciples, when I accept the great principle of natural development to explain man's origin. The question of man's origin only presents itself to me in the two-fold aspect of plurality of origins in the way I have hinted, or of unity of origin in the manner advocated by Professor Huxley and Mr. Wallace.

If those eminent disciples of Mr. Darwin can demonstrate to me by fair argument that their views are most in accordance with reason and science, I shall at once relinquish my own.

In conclusion, I beg to express a wish that, in consideration of the conflicting views held on this subject, Mr. Darwin himself may be induced to come forward, and tell us if the application of his theory leads to unity of origin as contended for by Professor Huxley; and if, also, taking Mr. Wallace's views fully into consideration, and applying his own theory to Mr. Wallace's premisses, it then lends any support to the theory of a coming unity.
