THE

METHODIST QUARTERLY REVIEW.

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ART. I.—UNITY OF THE HUMAN RACE.

1. *The Natural History of Man; comprising inquiries into the modifying influence of physical and moral agencies on the different tribes of the human family.* By JAMES COWLES PRICHARD, M. D., &c., &c. Third edition, enlarged, with fifty coloured and five plain illustrations on steel, and ninety-seven engravings on wood. Royal 8vo., pp. 677. London: H. Bailliere. 1848.
2. *The Unity of the Human Races, proved to be the Doctrine of Scripture, Reason, and Science, with a Review of the Present Position and Theory of Professor Agassiz.* By the Rev. THOMAS SMYTH, D. D. 12mo., pp. 404. New-York: George P. Putnam. 1850.
3. *The Doctrine of the Unity of the Human Race Examined on the Principles of Science.* By JOHN BACHMAN, D. D. 8vo., pp. 312. Charleston, S. C.: C. Canning. 1850.
4. *Philological Proofs of the Original Unity and Recent Origin of the Human Race.* By ARTHUR JAMES JOHNES, Esq. London. 1846.
5. *An Investigation of the Theories of the Natural History of Man.* By WILLIAM FREDERIC VAN ARMINGE. New-York. 1848.
6. *The Christian Examiner and Religious Miscellany;* March, 1850. *On the Geographical Distribution of Animals;* July, 1850. *On the Diversity of Origin of the Human Races.* By Professor LOUIS AGASSIZ.

THE question whether man may not after all be the second cousin of the monkeys, is one which most plain people will not think worthy of elaborate discussion. But as the Bible had had the temerity to assert that he is not, Voltaire and the French school of infidelity, flinging down the glove for the slandered baboons, maintained that the Bible in this, as in so many other matters, was wholly in the dark. Now, had they limited the investigation to mere researches into personal genealogy, we should not have been so impolite—either to the Frenchmen or the monkeys—as to have meddled with their family matters, but would have allowed them to settle the question of consanguinity as best pleased them. But with a magnanimity and abnegation of self highly characteristic of that school, they

generously disclaim the honour of this simial relationship, and benevolently bestow it upon poor Quashee, in consideration, perhaps, of the fact that he had been somewhat neglected in their previous benefactions. Now, as neither Quashee nor the baboons were allowed to appear in the Encyclopædia, any more than the Bible or Christianity, it became necessary that others should examine their claim to the heraldic honours thus bestowed upon them by the *savants* of the Academy. Such was the origin of the question as to the Unity of the Human Race.

The question thus raised, and discussed, at times, ever since, has recently awakened fresh interest in the scientific world. Commerce, travel, exploring expeditions, researches in natural history, and other causes, have accumulated such a mass of evidence bearing on this point, that a hope has arisen that it may speedily and finally be settled as a ruled case in science. Hence the number and ability of books and essays that have lately appeared on both sides of this question. And it is not without a feeling of national pride that we observe the fact that some of the ablest treatises on the subject are from American pens. Some of these we propose briefly to notice before presenting a rapid *résumé* of the argument, as we believe it to stand at present.

First in order we place Prichard, as the most laborious, voluminous, and accurate writer in our language, on the general physical phenomena of the human races. In his Physical Researches, we have a vast repository of facts drawn from every available source that was trustworthy. His Natural History of Man is an extensive and laborious induction of particulars in regard to the unity of the different races. The edition now before us is enriched with extensive appendixes, presenting the latest results of scientific research in the departments of philology and ethnography, especially in regard to the African races. The costliness of the work, however, arising from its elegant coloured plates, must prevent its extensive circulation in this country. This is, however, the less to be regretted, as we have in some treatises of native origin, an equally satisfactory discussion of the subject.

Dr. Bachman's book is one of the very best that has ever been written on this question. One of the first naturalists of our age, his opinions on the questions of science involved would be of great value, even if he had given no special attention to this particular controversy. But his professional studies having early directed his mind to this subject, he has given all the points involved the most sifting and thorough examination. With very rare powers of observation, he has carried on a series of experiments for many years,

has visited the best museums and cabinets of this country and Europe, has consulted every accessible source of information, and collected an immense mass of facts, by means of which he has placed the doctrines of the intransitive permanence of species, the barrenness of hybrids, and the consequent unity of the races of men, on a basis of inductive proof which we think is absolutely immovable. He has subjected the showy but shallow generalizations of Dr. Morton to a most searching and exhaustive analysis, and shown that in not a single case alleged is the fruitfulness of hybrid races sustained by the facts. The dogged and persevering manner in which the veteran naturalist scents out and runs down the alleged facts, dragging them to the light, and showing their irrelevancy, or their establishment of the opposite doctrine, is really amusing. One cannot help feeling some compassion for a theory so completely and mercilessly used up. After demolishing the frost-work of Dr. Morton, he discusses the direct question with a clearness, originality, and force, which we have rarely seen equalled.

Dr. Smyth's book is a faithful and laborious summary of the argument in all its ramifications. Like Dr. Bachman's, it had its origin in the discussions of a literary club in Charleston, and first appeared in the columns of several of our religious newspapers. Possessing one of the finest private libraries in the country, and knowing well how to use its treasures, Dr. Smyth has enjoyed rare facilities for presenting a complete bird's-eye view of the controversy. This accordingly he has done in the work before us. Like all his other writings, it displays vigorous thinking, patient research, extensive erudition, and a high tone of moral and religious feeling. He first takes up the Scriptural argument and discusses it with special reference to the recent speculations of Professor Agassiz. Here his professional training gives him great advantage over the distinguished naturalist. He then proves, by an extensive induction of facts from ancient history and literature, the former civilization of the black races. Next he grapples directly with the question of the varieties of the human species, suggests their probable origin, and shows their entire consistency with the unity of the different races. Then, after discussing the nature and philosophy of species, he proves the unity of the races from the unity of the species. He then presents the philological, ethnological, and, what may be termed the psychological, arguments. After this he carries the war into Africa, attacks the theory of diversity of origin, and urges objections to the latest views of Agassiz. Several useful papers are added in an appendix, and the whole work made convenient and valuable as a book of reference, by a Scriptural and general index.

It is, perhaps, hardly to be expected that a work of this kind, made up amidst the multifarious engagements of a laborious pastoral charge, should possess all the logical arrangement, and digested method, of a treatise prepared in the scholarly leisure of a life devoted entirely to a single branch of science. The wonder is, that a book prepared amidst the pressure of so many duties, should evince so thorough an exploration of the whole ground, and so complete a mastery of the argument, rather than that it should lack that compact and organic unity which we see in works more technically scientific. As it is, we are furnished with the bibliography of the subject more completely than it can be found in any other book we have seen, and with an accumulation of argument in favour of the unity of the races, which must be satisfactory to most fair and unbiassed minds.

There is another work, which we have not seen, by a Dr. Nott of Mobile, but the quotations from which evince a rancour against the Bible and a coarse brutality of feeling, that is exceedingly loathsome. If he be not some Alabama negro-trader, who has found it more profitable to sell men's bodies than to cure them, and who wishes to write his trade into respectability, his book at least emits the odour of that delectable class so strongly as to make any nearer approach to it neither pleasant nor necessary.

That this is a question on which the Bible has clearly and definitely pronounced, we do not think it needful to show at any greater length than we shall necessarily do, in noticing the position of Professor Agassiz; as most of our readers are already thoroughly convinced and informed on that point. It will be more profitable to present a condensed view of the argument for the unity of the races, as a question of natural history, and, to some extent, of ethnography. In doing this, we shall draw indiscriminately on all the sources of information within our reach, without referring in each case to the precise authority on which we make our statements, or cumbering our pages with details that are appropriate only to the extended treatise.

That there are varieties in the races of men of the most diverse character, is a fact that stands out palpably to universal observation. The fair-skinned, energetic Anglo-Saxon, the black-skinned, indolent Negro, and the saffron and copper-coloured races of Asia, Australia, and America, present permanent types of the widest diversities of physical characteristics. The question then arises, Are these diversities so wide and impassable as to prove that the different races of men are different species, having a different origin; or are they of such a character as only to prove that they are different

varieties of the same species? Man, being an animal, under the same physical laws as to his physical economy with the lower tribes, must be considered, in discussing this question, as subjected to the same principles of classification that are adopted in other departments of animated nature. We are willing, then, to submit this question as one purely of natural history, and discuss it on those principles which are recognised in that branch of natural science.

The word species is often loosely used to mean any class of individuals possessing characteristics in common. In Zoology, however, it has a fixed and definite sense. This sense is not an arbitrary invention in the nomenclature of science, but a permanent fact ordained in the very constitution of organic life. A species is simply a tribe of living things descended originally, either from the same common parentage, or from a parentage in every respect precisely similar. The fact that puts them in the same species, is, descent from the same original stock. Now, as this fact cannot always be ascertained historically, Nature, (by which term in this paper we always mean the God of Nature,) has left a mark by which this can always be ascertained. This mark is the power of permanent reproduction. Like always produces like, and not unlike. That, therefore, which proves the descent of the offspring from the parentage, is the power of producing and perpetuating an offspring in all essential respects similar to that parentage.

There are two great facts that characterize the actions of Nature in regard to the different families of living things: the one is the great flexibility and adaptability of the law of resemblance within certain limits; the other is, the rigid, inflexible permanence of that law beyond these limits. The final causes of these facts or laws will be obvious on a moment's reflection.

The first law is essential to the very existence and advancement of human society. The earth contains many varieties of climate, soil, and surface, and the precise physical constitution adapted to one place would be very unsuitable to another. Hence, either the more useful races of animals and plants must be confined to their original locality; or a new creation must take place whenever a new country is to be settled; or there must be in organic life a power of adaptation by which it shall conform to the new circumstances in which the possessors of it may be placed. The necessities of man, however, demand that certain animals and plants should be domesticated, and trained to the various uses for which they may be needed, and that they be capable of transportation with him in his various migrations. Now, if the peculiarities of each species were unchangeable, domesticity and migration would be impossible. The

dog, the horse, the sheep, and the hog, must remain in their original wildness, and the many useful varieties of these important races be unknown. The plants, fruits, and grains, must be confined to the countries to which they were indigenous, and be incapable of improvement by cultivation. The incentives and rewards of human industry and skill, arising from the wonderful improvements that may be made by cultivation, and acting so powerfully upon the civilization and advancement of the world, would be wholly wanting. Therefore, to accomplish the obvious purposes of God in peopling the earth, there must be this *nisus formativus* in organic life, by which the various tribes of living things may be adapted to the circumstances of their position and the wants of man, and by which a stimulus may be given to the active and inventive faculties of social and civilized life. It is this fact, or tendency in organic life, which gives rise to those endless varieties of different species which we find everywhere existing, especially in the more settled and advanced states of society.

But the second law is equally important. If this capability of variation were unlimited, the peculiarities of each species must at last be wholly obliterated. If the different species could amalgamate without limit, and produce new species partaking of the characteristics of both races thus commingled, in process of time the existing species must become hopelessly confounded, the peculiarities that fit them for their various positions in the scale of living things be lost, and the earth become a scene of organic confusion. Indeed, had this law not been always in existence, the various species of domestic animals, at least, would long since have disappeared and become completely blended into some strange and nondescript monstrosity, as wild as a sick man's dream. To prevent such a calamity Nature has set up an impassable barrier between the different species, so as to prevent their permanent intermixture. It is this fact that establishes the conditions of hybridity. A hybrid individual may be produced between two different species, but never a hybrid species, for the hybrid is barren, and cannot perpetuate its kind. And although, in two or perhaps three cases, (those of the buffalo and cow, the China and common goose, and some species of ducks,) where the species are nearly related, the power of reproduction existed in the hybrid, it is so feeble as not to extend beyond the second or third generation. The race becomes extinct, and hence the hybrid is incapable of establishing a new species. Recent anatomical investigations show that an actual barrier is produced in the hybrid, making the power of propagation impossible. And universal observation shows that there is between different species

an invincible repugnance to union, so that death is often the result of attempts to bring them together. No new species then can be produced by art or accident, for the attempt to produce it will always end in barrenness. The law of organic life is, that each creature shall propagate its own kind and not any other. It is also a significant indication of the strength of this law, that mules, or hybrid plants and animals, very rarely occur in a wild state. They are usually the result of domesticity or specific culture, in which the action of Nature is forced by man, and in such cases her displeasure is evinced by the sterility of the unnatural product. Were it necessary, we could give a page of hybrids between different species, which, in spite of every effort to the contrary, have been found absolutely sterile. The fact, then, that hybrid individuals are barren, and hence, that hybrid species or races can never be formed, furnishes us with a clear and certain criterion of species and varieties. If we find the power of permanent reproduction existing between any two classes, we know that they are only varieties, and belong to the same species. If they belong to the same species we infer that they had the same origin, for we have seen that the production of a new species is impossible.

The application of these views to the question before us is obvious. We know that the different races of men freely and permanently amalgamate. This phenomenon has frequently been seen, and new races possessing the power of permanent reproduction have frequently been formed, and are now in actual process of formation. The fertility of the mixed races of men, therefore, proves them to belong to the same species; and, unless man be an exception to all other races of living things, or unless there is specific historical testimony to establish the contrary, proves that these races have had a common and a single origin.

The most strenuous attack that has ever been made on this long-established doctrine of natural history, has been by Dr. Morton of Philadelphia. In an essay on the hybridity of animals in its relation to the unity of the human races, he affirms that hybrid races, with the power of permanent reproduction, are capable of being formed; and hence that this is not the criterion to determine separate species. He brings together an imposing array of alleged facts to sustain this position. But this array has not imposed on Dr. Bachman, however it may have on Dr. Morton. With a far wider knowledge of both the science and the literature of the subject than even his learned opponent, Dr. Bachman has taken up these facts *seriatim*, and shown with the clearness of demonstration, that some of his statements are not authentic; that others are disproved by

positive countervailing testimony; that others are so vague and indefinite as to establish nothing with certainty; that others prove the very position which he attacks; and that in no case has it been proven that a hybrid race or species has been produced or perpetuated. This is done with a searching thoroughness and minuteness of refutation that leaves literally no ground for the theory to rest upon, and establishes the sterility of hybrids and the impossibility of hybrid races beyond all successful contradiction.

The views that Professor Agassiz has recently thrown out, are only in partial conflict with this general doctrine, and hence need not be examined in this immediate connexion.

Here then we might rest the argument for the unity of the races, as an established point of natural history, and demand proof that man was an exception to the rest of the animated creation. But we are willing to wave this advantage, and investigate those difficulties that lie in our path, which however are not peculiarly pressing upon our theory.

The great difficulty in the way of admitting the unity of the human races, is the number and marked character of their varieties. It is alleged that these varieties are so broad, so permanent, and so ancient, that we are forced to the conclusion that the different races had different origins. Let us then examine the law of varieties as it exists in the other forms of organic life, and ascertain whether it leads us to this conclusion. If we find that no such widely-marked and permanent varieties appear in them, this difficulty will be formidable to the theory of unity. But if we find in tribes that are known to belong to the same species and to have the same origin, varieties appearing as broadly marked, and as indelible as those of the human races—varieties which when once produced put on the permanence of species in their characteristics,—then it will follow that the existence of similar varieties, similarly marked, in the human race, can be no valid proof of either diversity of species or diversity of origin.

We have already remarked that it is a law of Nature that varieties be produced within the same species, and that to this beneficent law we owe much of the comfort and improvement of our race. These varieties are sometimes accidental, originating without any known cause. A striking instance of this law of accidental origin is found in the otter breed of sheep. In 1791 one ewe, on the farm of Seth Wright, in Massachusetts, gave birth to a male lamb, which, without any known cause, had a longer body and shorter legs than the rest of the breed, with the fore-legs crooked. This peculiar form rendering it unable to leap fences, it was resolved if possible to

propagate this accidental variety. This was accordingly done, and the breed received its name from the resemblance of its bodily form to that of the otter. A race of swine with solid hoofs arose in Hungary, in the same way, and recently the same singular variety has made its appearance along the banks of the Red river in our own country, without any assignable cause.

But varieties are more frequently formed from causes acting uniformly and regularly, such as climate, food, habits of life, etc., in the states of wildness and domesticity. Whilst we are unable to say what the precise mode of action is, the general fact is clear, that where animals are subjected to any new circumstances such as these, there is an instant effort in Nature to accommodate herself to these circumstances, and if there is sufficient constitutional energy to endure this struggle, the result is a change in the physical peculiarities which are adapted to the change in the outward circumstances. This is the great law of compensation that runs through all organic life, and is one of the most mysterious and beautiful in the economy of Nature. It is the great analogue to the adaptive courtesies and kindnesses of the social world, which illustrate the wonderful correspondences that we find running through all the manifestations of that dread and glorious mystery—LIFE.

It is difficult to trace our domestic animals to their original stocks, owing to the remoteness of the period of their subjugation by man. The original types, in many cases, seem to have disappeared, the necessity for their continued existence no longer remaining. The oxen, horses, goats, etc., which we now find wild, are more frequently derivations from the domesticated varieties, than types from which those varieties were originally derived. But the transition from domesticity to wildness furnishes us with a standard by which to judge of the changes effected in the contrary transition; and although it is doubtful whether the original type is ever restored in such cases, yet we have, at least, an illustration of the law of variations, and the tendency in organic life to put on new characteristics when subjected to new influences.

Happily for our purpose we have a series of authentic experiments, made on a scale sufficiently extended to afford us the finest possible illustration of this great law. The Spaniards, when they discovered this country, found none of the domestic animals existing here which were used in Europe. They were accordingly introduced, and escaping and straying from their owners, they have run wild in our vast forests for several centuries. The result has been the obliteration of the characteristics of the domesticated animals, and a reappearance of some of the typal marks of the wild state;

and a generation of new and striking characteristics in accommodation to these new circumstances.

The wild hog of our forests bears a striking likeness to the wild boar of the old world. The hog of the high mountains of Paramos resembles the wild boar of France. Instead of being covered with bristles, however, as the domestic breed from which he sprang, he has a thick fur, often crisp, and sometimes an under-coat of wool. Instead of being generally white or spotted, they are uniformly black, except in some warmer regions, where they are red, like the young pecari. The anatomical structure has changed, adapting itself to the new habits of the animal, in an elongation of the snout, a vaulting of the forehead, a lengthening of the hind legs, and in the case of those left on the island of Cubagua, a monstrous elongation of the toes to half a span.

The ox has undergone the same changes. In some of the provinces of South America a variety has been produced called "pelones," having a very rare and fine fur. In other provinces a variety is produced with an entirely naked skin, like the dog of Mexico or of Guinea. In Colombia, owing to the immense size of farms and other causes, the practice of milking was laid aside, and the result has been that the secretion of milk in the cows is, like the same function in other animals of this class, only an occasional phenomenon, and confined strictly to the period of suckling the calf. As soon as the calf is removed, the milk ceases to flow, as in the case of other mammals.

The same changes have taken place in other animals. The wild dog of the Pampas never barks as the domestic animal does, but howls like the wolf. The wild cat has lost the musical accomplishments of her civilized sisterhood, and gives none of those delectable concerts of caterwauling that so often make night hideous, and call down, from irritable listeners, curses, if not something heavier, on the whole feline race. The wild horse of the higher plains of South America, becomes covered with a long, shaggy fur, and is of an uniform chestnut-colour. The sheep of the Central Cordilleras, if not shorn, produces a thick, matted, woolly fleece, which gradually breaks off in shaggy tufts, and leaves underneath a short, fine hair, shining and smooth, like that of the goat, and the wool never reappears. The goat has lost her large teats, and produces two or three kids annually. The same changes have been produced in geese and gallinaceous fowls. A variety has sprung up, called rumpless fowls, which want from one to six of the caudal vertebræ.

The same varieties have sprung up in other parts of the world. The fat-tailed sheep of Tartary loses its posterior mass of fat, when

removed to the Steppes of Siberia, whose scant and bitter herbage is less favourable to the secretion of adipose matter. The African sheep has become large like a goat, and exchanged its wool for hair. The Wallachian sheep has put on large, perpendicular, spiral horns, and in like manner become clothed with hair. Some also have four, and even six horns. The wild horses of eastern Siberia have the same anatomical differences from the tame ones that we noticed in the case of the swine; and culture, climate, and other causes, have produced the widest varieties—from the little, shaggy pony of the Shetlands, that scrambles up the Highland crags like a goat, to the gigantic steed of Flanders, or the Conestoga of Pennsylvania, which will sometimes drag a load of four tons on the level ground. Whether the dog and the wolf are of the same species, is a question about which there is some difference of opinion among naturalists; but there is a very general agreement that all varieties of the dog must be referred to one species. Between these there is the widest difference—from the gigantic St. Bernard that will carry a frozen traveller to the convent, the shaggy Newfoundland with his webbed feet and his aquatic habits, and the scentless and almost tongueless greyhound; to the little lap-dog that nestles in a lady's arms, the nosing foxhound whose scent is almost a miracle, the ratting terrier, and the naked Mexican dog that has an additional toe. The cow presents the most diverse varieties—from the little Surat ox, not larger than a dog, to the humped and long-eared Brahmin cow, and the gigantic prize ox that will weigh two tons. The domesticated fowls and pigeons have assumed varieties enough to fill a page, some of them of the most diverse character, varying from the largest size to the most dwarfish, and possessing every peculiarity compatible with the preservation of the species, in the feathers, the form, the wattles, and the psychological traits and habits.

From this brief summary of facts, which might be indefinitely extended, we may infer the law of variation in animal life, as to its extent. Within the limits of the preservation of the type of the species, the widest variations may occur in anatomical structure; in external properties, in the colour of the skin, in the colour and texture of the hair, in the features, and in the psychological habits; and these peculiarities once produced may pass into permanent varieties, which shall assume all the indelibility of species. And this remarkable fact may be observed, that the nearer the animal approaches to man in its associations and habits, the wider the range of variation. The dog, who is man's companion and imitator, more nearly than any other animal,—who hunts with him in the forest, watches with him over the flock, lies down by his fireside,

and shares his food,—has, perhaps, the widest range of variety. So the roots and grains that are most used by man have the most varieties. The potato has more than one hundred varieties; and Dr. Bachman relates that he saw at one warehouse, more than one hundred kinds of wheat. The fact then stands broadly out, that the widest varieties may occur among animals that are known to belong to the same species. Hence, when we come to man himself, and find varieties existing that are widely different from each other, we see in the range and extent of these varieties nothing which this law of variation in the lower tribes declares to be at variance with the position that these races all belong to the same species and possess the same origin.

But the law of variation we find as clearly marked in its permanence, as we have found it in its extent. The general fact is, that varieties, when once formed, never return to their original type, if left to themselves. They may be changed into new varieties, by being subjected to new circumstances; but if let alone, they will perpetuate their own characteristics, and not those from which they have departed. The motto of Nature is *nulla vestigia retrorsum.* The stream never flows backward to the fountain. The variety may have been produced by accident; but once produced, it puts on the unyielding tenacity of a species. It may pass into a new variety, but this will rarely if ever be the exact type of the original species. Some varieties of the dog have been in existence for centuries, and their precise origin is lost in the past. These varieties have necessarily assumed all the tenacious permanence of species, to have maintained for so many years a distinct existence. The final cause of the permanence of varieties is identical with that of the permanence of species. The same beneficent reasons which demand that the valuable properties of a species should not be lost by the extinction or amalgamation of that species, also require that, when a variety has been called forth by peculiar circumstances, that variety should be permanent.

If, therefore, we find that the varieties of the human race remain permanent, although the climatic or other influences under which we find them may be changed; if we find that the black, red, and white races continue to propagate their peculiarities, although their original geographical positions should be exchanged, we find in this fact nothing which is at variance with the law of varieties, as we have just found it to exist in the lower tribes.

Having thus learned the law of variation, within the limit of species, as to the lower families of animated nature, we turn to the varieties of the human race, and inquire whether there is anything

in them, as to their extent or permanence, inconsistent with unity of origin and unity of species.

When we come to examine these varieties in detail, we find them to be neither so many, nor so great, as we find them in other animals confessedly of the same species, and of the same parentage. The difference between the fairest Caucasian and the sootiest African, is not nearly so great as that between the little, shaggy, Shetland pony, and the gigantic dray-horse of London; or between the soft and silky lap-dog, and the majestic St. Bernard. The differences we have already noted between the oxen, hogs, horses and goats that run wild in our forests, and the breeds from which they are known to have sprung, are far greater than we find between any two races of men on earth.

It is by means of the number, importance, and permanence of the resemblances between individuals; and, also, by the fact of their capability to unite and produce fertile progeny, that we are enabled to class them in the same species. This is the rule adopted as to all other departments of natural history, and hence the rule that should govern us here. Now, when we examine the various races of men we find that they agree among themselves and differ from all other animals in many marked characteristics. They resemble each other in the number, the length, the position, the growth, and the shedding of the teeth; in the shortness of the lower jaw, and the want of the intermaxillary bone; in the number of bones in the skeleton; in an erect stature; in the articulation of the head with the spinal column by the middle of its basis; in the possession of two hands, and they of the most exquisite mechanism; in a smooth skin, and the head covered with hair; in the number and arrangement of the muscles, the digestive and other organs; in the great development of the cerebral hemispheres, and the size of the brain compared with the nerves connected with it; in the organs of speech, and the power of singing and laughing; in being omnivorous and using cooked food, and therefore fire; in the capability of inhabiting all climates; in a long infancy, slow growth, and late puberty; in a peculiar structure of the physical constitution of the female, in the incurvation of the *sacrum* and *os coccygis*, and consequent forward direction of the organs connected with them; in the period of gestation; in the number of young at a birth; in the times and seasons of procreation; in liability to the same diseases, the same parasitical insects and worms; and above all, in the possession of mental, moral and religious faculties, which make them subjects of the government of God, and responsible to his law, as well as capable of organized society, and the various phenomena of civilization.

Now if these momentous resemblances and peculiarities do not classify the human races into one species, how can a case of species ever be made out? If all these essential resemblances, together with the capability of blending the different races and producing fertile varieties, do not prove unity of species, and, therefore, by the admitted rules of natural history, unity of origin, what conceivable facts could establish it?

But if the varieties of the human race were much more widely marked than we see them, there would be in this no insuperable objection to their original and specific unity. The same general reasons that require varieties to exist in organic life at all, demand a wider margin for them in man than in any other animal. His range of being is wider; his circumstances and necessities more varied and numerous; his destinies higher in the event of obedience, and lower in the event of disobedience, to the laws under which he is placed; his capabilities of self-culture are more expansive, that a stronger stimulus might be applied to his active powers, and hence, as a correlative fact, his liability to degeneracy, if that culture be neglected, is proportionally wide in its range; and his entire position as the responsible head of the creation demands a broader scope for change to the better, and hence by possibility to the worse, than any other animal on earth. We would therefore naturally expect a wider variation in all those characteristics that are affected by the outward circumstances in which he is placed. He inhabits every climate—from the frozen snows of the Arctics, where the reindeer perishes with cold, to the burning sands of Sahara, and the steaming jungles of the Carnatic. He subsists on every species of food—from the dripping blubber and train-oil of the Esquimaux, to the cooling fruits and simple cereals of the naked dweller in the tropics. He adopts every mode of life—from that of the lean and hungry hunter who scours the forest and plain for his daily food, or the wandering herdsman who tends his vast flocks by day and by night on the boundless Steppe and beneath the silent stars that looked down on the Chaldean shepherds, to the peaceful tiller of the soil, the moiling artisan of the shop, and the luxurious inmate of the princely mansion. He is subjected to the extremes of civilization and barbarism—influences the most potent, as facts before our eyes demonstrate, where a few families are left for a generation or two in ignorance, isolation and poverty; and influences which cannot to any very great extent be brought to bear on the lower tribes. If then we should find the varieties of the human races broader and more indelible than those of other animals, we would find nothing, in this fact, which the causes just alluded to would not have led us to anticipate.

But, great as these influences are, we are by no means certain that yet greater may not have existed in a former age of our world's history. That the climate of different portions of the earth's surface is not now what it once was, is rendered almost certain by some of the earth's geological records. And that this change of climate has taken place since the creation of man, is also a fact of the highest probability. Whatever was the extent of the Noachic deluge, the physical conditions that affect the human race must have been seriously modified by it. And if in these early ages of the history of the race, when it was in the yielding condition of its infancy, there was a quicker susceptibility in forming varieties, and a stronger tenacity in retaining them, than afterwards,—if the forming state of the race, like the clay in the potter's hand, had a capability of receiving and retaining impressions then, which it did not have at a later stage,—there is in this nothing at variance with what the soundest philosophy would sanction. And the same reasons that required a dispersion of men, and the confusion of their tongues at Babel, would also seem to require their separation by physical features as broad and indelible as the distinctions of language. If then there was even an extraordinary operation of Divine agencies tending to produce diversity of physical features, as the Bible assures us there was to produce diversity of languages; if these original diversities were propagated and made permanent, by isolation and restrictive intermarriage of the respective families thus separated; and if the general purposes of God, and destinies of the race, were to be advanced by nations separated in their features as well as their language, there is nothing unscriptural or unreasonable in the hypothesis that thus some of these widest diversities may have originated. Hence, if we should be unable to state historically the precise origin of all these varieties; if there should be no known causes operating at present to produce new races, more than to produce new languages; if existing causes should be clearly ascertained to be insufficient to account for the appearance of the different races of men so early as we find them noticed in history,—there would be nothing in this state of facts to shake the doctrine of the original unity of these races. If we must assert an interposition of Divine power, as our opponents contend, the rules of hypothesis require us not to assume a higher cause or interposition if a lower is sufficient to explain the effect. Now, if instead of admitting, as they assert, a creative interposition of God, calling these varieties into existence from nonentity, we simply assert a directive interposition, causing different families already in existence to assume certain peculiarities which should be permanent, our hypothesis, presenting

a lower, yet a sufficient cause, is obviously the more philosophical and reasonable. Hence, were it clearly proven, (which it has not been,) that existing causes, or natural causes once acting more powerfully than they do at present, could not explain these effects, then, on the supposition that our race is a fallen one, and that great problems of ontology are slowly evolving in its various families; and that, like the river that went out from Eden, this mighty stream of life, though originally one, has been separated into great heads, each of which has itself become a broad river, and gone forth to compass the earth,—the position that this separation and division, like that of Babel, was caused by specific Divine interpositions no longer needed and no longer exerted, is, of the two demanded, the more reasonable, philosophical, and Scriptural.

But whilst we believe this hypothesis to be a legitimate one in the discussion, should existing causes be demonstrated inadequate to account for the varieties, we need not take any special advantage of it. It has not been demonstrated that these causes are insufficient, but on the contrary many facts exist which tend to prove the opposite position. The law of variations, which we saw existing in the lower tribes, is found to exist in the human constitution, as clearly as in the other departments of animal life. Permanent causes are in constant operation, and accidental peculiarities arise, from both of which sources varieties appear whose characters are deep and permanent.

It is impossible for us, in the present state of our physiological knowledge, to explain the precise mode in which changes are produced in the physical constitution, by a change of geographical location. But the fact is, that there is in the constitution of man a tendency, such as we saw in that of the lower tribes, to put on certain changes of colour, hair, form, etc., when removed from one climate and locality to another, or when subjected to any great change of social habits. Whether the external condition of these changes be the chemical solar rays; the altitude or depression of the general level; the difference of geological formations; the varying agencies of magnetism and electricity; atmospheric peculiarities; miasmatic exhalations from vegetable or mineral matter; difference of soils; proximity to the ocean; variety of food, habits of life and exposure—all of which perhaps at times come in play—or other causes yet more occult,—there can be no question about the fact that such causes are at work. The general fact is, that when the other physical conditions are the same, tribes living nearest the equator are marked with the darkest skin, and the crispest hair. Thus, we make a gradual ascent from the jetty negro of the line to the olive-coloured Arab,

the brown Moor, the swarthy Italian, the dusky Spaniard, the dark-skinned Frenchman, the ruddy Englishman, and the pallid Scandinavian. When we reach the Arctic regions we find a dark tint re-appearing, owing probably to the intensity of the summer's sun, the exposure of the natives, and the blackening effect of the winter's smoke in their dim and greasy burrows. When the white races are transferred to a tropical climate, there is a gradual darkening of the complexion and crisping of the hair. There is not so immediate and perceptible a change in the removal of the dark races to a cooler climate, because this deposition of a colouring pigment in the *rete mucosum* is a positive peculiarity; and the law of varieties, as we have ascertained it, is, that these peculiarities once produced become tenacious and permanent, even though the original conditions of their production should be changed. The white races are more immediately affected because their colour is a negative peculiarity, and hence more readily affected by the action of positive agencies. Dough may readily be changed into bread by subjecting it to heat, but bread cannot so readily be changed into dough by reversing the process,—yet no man would from this fact affirm that a lump of dough and a loaf of bread may not have had the same origin. But even on these races a bleaching effect is seen after the lapse of a considerable time. The negroes of this country, where the race has been unmixed, are undoubtedly lighter in colour than their kinsmen in Africa. And the Gipsies, in spite of their exposure and nomade habits, have gradually assumed a lighter tint in the cooler parts of Europe. So in the opposite direction Bishop Heber declares that three centuries of residence in India have made the Portuguese nearly as black as the Caffres.

These agencies we find acting independently of any relations of race. Races that are known historically to have the same origin, by exposure to these influences have assumed every shade of colour, and the other peculiarities that are supposed to indicate a distinct origin in the different varieties. The children of Abraham are found of every hue, from the ruddy tints of the Polish and German, through the dusky hue of the Moorish and Syrian, to the jetty melanism of the black Jews of India. The American nations vary—from the fair tribes of the upper Orinoco, mentioned by Humboldt, to the chocolate-coloured Charruas, and the black races of California, mentioned by Dr. Morton. The great Arian race includes the Affghan, Kurd, Armenian, and Indo-European of the fairest complexion, and the Hindoo, whose skin rivals in jettiness that of the negro. And the Hindoos themselves present every variety of complexion—from the fair-skinned Rajpoot, whose cheek is fanned by the cool breezes of

the Himmalayas, to the swart coolies, and the coal-black fishermen, who swarm on the burning banks of the Hoogly. The Chinese Mongolians—compared among themselves, and also with the same race in adjacent countries—present the same results. The African races display the same varieties—from the red Fúlahs and the yellow Bushmen, to the genuine negro of Guinea, and the broad-faced Hottentot of the southern plains. Many of the Caffres are stated by Professor Lichtenstein to be as light-coloured as the Portuguese. The Gallas, a large and powerful race that inhabits north-eastern Africa, and the Haüsan people of Central Soudan, have physical features resembling those of the negroes, whilst their language and history indicate a Shemitish origin. A tribe also of the Berber Tuaryk—that have long been isolated in the oasis Wadreag, an island of green, in the great African desert—have not only assumed the black hue which we find in many Arabs, but even the features and hair of the negro race. This has resulted, as the history of the tribe proves, not from any intermixture of races,—a result against which their haughty pride of blood were a sufficient guarantee,—but from the physical causes that glow and sweep over those oceans of burning sand. A similar fact is mentioned by Mr. Buckingham in regard to an Arab family of the Haüran, all of whom, except the father, had negro features and hair, although it was matter of proof that no negro blood had ever mingled with that of the family. Mr. B. referred it to that tropical sultriness that broods over the valley of the Jordan, giving the tribes of that region flatter features, darker skins, and coarser hair, than others of the same family.

If we are asked what it is in the climate that produces these peculiarities, we cannot tell, any more than we can tell what it is in the climate of Africa that has made the hog black, stripped the sheep of its wool and clothed it with black hair, caused the hog and dog to lose their hair and have nothing but a black, oily skin, and made the feathers and bones of a variety of the gallinaceous fowl to become black, whilst its skin and wattles are purple. We know too little of the mysterious chemistry of the great laboratory of Nature to say how these changes are wrought; but the facts—that they are going on in the lower tribes before our eyes, and that they have occurred and are now occurring in tribes that are known to have the same origin—prove that the existence of such diversities, where we are ignorant of their rise, cannot prove a diversity of origin in the races where they appear.

But aside from these general causes, which act uniformly and universally, there are particular agencies at work, whose action produces varieties of the most permanent kind. Prichard suggests that

the races of men as to their physical characteristics, fall into three general types, found respectively in the savage and hunting tribes, the nomadic and pastoral races, and the nations that are subjected to the influences of civilization. The first have a form of skull called prognathous, indicated by a forward prolongation of the jaws, and other features; the second, a pyramidal form of skull with a broad face; and the third, an oval or elliptical skull. When a race passes from the one mode of life to the other, there is a corresponding change in its physical features. Thus the Turks, since their encampment on the Bosphorus, have exchanged the Tartar peculiarities for those of the Europeans; and the negroes, during their residence in this country, have undergone a decided change of skull and physical conformation.

Other races are arising from intermixtures of existing ones. The Griquas in Southern Africa have arisen from a union of the Dutch boors of the Cape with the aboriginal Hottentots, and are now a clearly-marked and permanent variety. The Cafusos in Brazil have sprung from a mixture of the native Indian race with the negroes. These varieties, though of such recent origin, have all the tenacity of other and older races. Even accidental features and malformations may be long transmitted in particular cases. A peculiar nose, mouth, or chin, will often pass through several generations of a family. A striking illustration of this is presented in the celebrated porcupine family of England, the members of which, for several generations, had their bodies covered with bony excrescences, like the quills of a porcupine, which were yearly shed, and yearly renewed. Although they intermarried with those who had no such peculiarity, yet so tenacious is Nature of a property which has once appeared, that this singular kind of cuticle did not disappear for several generations. Mr. Poinsett also testifies to the existence of a spotted race of men in Mexico, a whole regiment of whom he saw, that is known to have arisen from a mixture of Spanish and Indian blood. Albinism is a further illustration of this law. It occurs in man, and the lower animals, without any known cause, and in the healthiest individuals. Its phenomena in the lower animals prove that it is not to be regarded as among the morbid manifestations of the physical system, but a mere accidental variety. An Albino rabbit, commonly called the English rabbit, has spread all over this country, without any variation or tendency to disease. White mice, rats, racoons, and ferrets, are also in existence. In the human races, Albinoes appear who are prolific and healthy to an extent which proves, that if they were isolated and mated together, there would be an Albino race of men, as we have of rabbits and other animals.

Had any of these accidental peculiarities been isolated, we would have had races of men differing from the rest more widely than any we now see, which would yet not have warranted an inference that they had an independent creation. If then these greater differences would not have warranted the inference that the diverse races were of diverse origins, it is hard to see how smaller differences can demand a conclusion which would not have been warranted by the greater.

But when we examine these diversities more closely, we find the argument drawn from them against the unity of the race to be hopelessly encumbered. If they prove anything in regard to the origin of the races, they prove too much, for they would prove fifty races as readily as five. There is no one feature that can be fixed upon as a test of species. Colour, hair, form of skull, etc., all exist in their widest variety among those who are known to belong to the same race, and run into each other by shades so gradual that it is impossible to draw any clear line of demarcation. Hence scarcely any two great writers on this subject have been able to agree as to the number of races—some making but three; some five; whilst some make twelve or fifteen. Hence no dividing line can be drawn. But if such a line could be drawn clearly, it would carry confusion, as to the doctrine of species, into every department of natural history. There are as wide and permanent varieties of cows, hogs, dogs, etc., known to have sprung from the same origin, as we find in the human races; and if, for these reasons, we insist on different species of men, we must, also, on different species of these animals. This, however, would bring utter and hopeless confusion into every department of natural history, and disregard those clear and impassable marks, which nature has placed, to distinguish one species from another. As a question then of mere natural history, the unity of the human race is clearly the doctrine of science. Unity of species infers unity of origin, by consent of nearly all great naturalists. Unity of species is indicated by the power of mutual and permanent reproduction, and is perfectly consistent with wide and tenacious varieties. As therefore the human races have this power of mutual and permanent reproduction, and as their varieties are neither as many nor as great as we find in the lower tribes of the same species, nor as we see accidentally appearing as sporadic cases in different races of men, we are at liberty to infer their original unity of species and hence their original unity of origin.

The only other objections presenting any difficulty are those drawn from the distribution of the races, and their isolation in countries and islands that are separated by wide and formidable barriers.

Our limits will not allow us to go at length into this branch of the subject; nor is it necessary, for, after all, it is only an *argumentum ad ignorantiam*. That we are unable to state with historical precision how America and the Polynesian Islands were peopled, is the natural result of the remoteness of the period when the migrations occurred; and what is known cannot be set aside by unanswered queries about what is unknown. The utmost that can be demanded of us is, to suggest a possible mode by which these migrations might have occurred; and if there be any such possibility, the objection falls, for it assumes an impossibility as the only ground on which it can rest.

That there may have been a connection by land across Bhering's Straits, in former times, is a fact that the geological indications of the region, and changes now going on, render, at least, not at all improbable. But even if this were not the case, the drifting of Japanese and Polynesian canoes, with their bewildered mariners, to lands many hundred miles—in one instance, fifteen hundred—from their starting-place, suggests the mode in which the Pacific islands, and then the American continent, may have been peopled. And when to this we add, that the traces of a higher civilization in ancient times, which are found in Central America, indicate the probability of superior skill and facilities in navigation among these early nations, the likelihood of such a migration, either by accident or design, becomes yet more probable. That there were nomade rovers of the sea—who passed from island to island, with their wives and domestic animals, just as the wandering races of the desert pass from oasis to oasis, and from pasturage to pasturage, on land—is a fact by no means improbable. And that some of these Bedouins of the ocean may have been driven to distant shores by the great westwardly currents of the Pacific, is a supposition which the facts already alluded to render highly probable. If it be said that all this is only an appeal to our ignorance, we answer, that so is the objection to which we reply, and the one appeal is surely as fair as the other. The objection demands an impossibility which these suppositions show does not exist in the case, and hence as an argument against our position it must fall.

These conjectures are greatly strengthened by the fact, that all tradition and history point to Central Asia as the cradle of the human race. There we find what is confessedly the most perfect type of physical feature and development, whether we term it the Caucasian, the Circassian, or the Iranian race; and as we trace the natural channels of population, we find, except where civilization has interposed, a steady deterioration until we find the physiological

extremes almost to coincide with the geographical, in the Negro of Africa, the Australian of Polynesia, and the Esquimaux of America. Another fact that bears irresistibly in the same direction is, that this same spot is the native country of nearly all of the animals, grains, vegetables, and fruits, that have accompanied man in all his wanderings. It is the native country of rice, wheat, maize, the vine, and nearly all of the products of the earth that man has used for his food. There also we find in their wild state, the ass, goat, sheep, cow, horse, dog, hog, cat, camel, etc., the companions and servants of men the earth over. And as we trace these animals in their dispersions, we find them assuming the same variations of form and appearance that we find in the human races, nearly in exact proportion to the nearness of their association and companionship with man. There are the same Asiatic pointings in the affinities and resemblances of language. The science of comparative glottology is yet in its infancy, but sufficient advance has been made to show the most remarkable relations; and as the evidence is positive, it is reliable as far as it goes, to render it probable that all existing languages have had, to some extent, a common origin. But for the elucidation of this point we must refer to the excellent work of Mr. Johnes, and others, in which it is discussed at length. Inasmuch, then, as the dispersion of the families of the earth from a single spot, is neither impossible nor improbable; as tradition points to a locality in Asia as that spot; as we find in that locality what seem to be the primitive types of man, and the animals and vegetables he has domesticated,—we submit that there is nothing in the present distribution or isolation of the races, to set aside the evidence of natural history already given, that these races belong to the same species and have had the same origin.

But the most signal indication that could perhaps be given of the strength of the argument we have thus been developing, is, the recent position of Professor Agassiz, as detailed in the essays at the head of this article. Perceiving the unanswerable mass of evidence in favour of the specific identity of the races of men, he takes a new position, and whilst admitting an unity of species, he asserts a diversity of origin. He endeavours to establish in his first article the preliminary position, that there are certain definite zoological provinces, the fauna and flora in each of which must have been created in the province itself, and not distributed thither by migration from a central point. He then maintains that each province has its own race of men, which could not have come from a single pair, but must have been created each in the province where we find it. These positions he thinks fully consistent with the Bible, which

only gives the origin and history of the white race, and alludes to none other.

Now, this is really an abandonment of the whole ground in dispute, as a question of science. The uniform doctrine of natural history is, that unity of species implies unity of origin, because permanent reproduction is the mark and test of species. If then this law is to be abandoned as to the human races, it is a tacit confession, that by the ordinary principles of natural history the original unity of the human races is settled; and that to unsettle it, new principles of science must be asserted. This is a most triumphant concession to the impregnable strength of the scientific grounds on which our doctrine rests. But we apprehend that the new position will be found as untenable as the old one; and if so, we hope that the question will then be allowed to rest as a *res adjudicata* in science. Let us then briefly examine the learned Professor's new hypothesis.

His views when analyzed resolve themselves into the following positions, namely: (1.) That animals are geographically distributed in distinct and separate zoological provinces; (2.) That they are so isolated in these provinces as to make it impossible that they could have come forth from a common centre; (3.) That they must therefore have been separately created in these provinces; (4.) That man is found distributed in the same provinces; (5.) That therefore, like the fauna and flora of these provinces, each race must have been created in the locality it occupies, and could not possibly have been distributed from a common centre, or originated from a single pair. The weakness of his general position may be perceived, when it is thus drawn out in logical method; and it will be seen at a glance that the conclusion rests on a chain of assumptions, any one of which being disproved, the chain is broken, and the conclusion falls to the ground. Let us then test the strength of these successive links, and see whether his theories rest on facts, or his facts warrant his conclusions.

It might seem presumptuous in us to challenge such high authority as that of Agassiz, who is confessedly the Neptune of modern zoology: but we may venture to suggest that the presumption is in the other direction—that even Neptune himself could not be allowed to sway his trident over the domains of other authorities; and that a man may be a peerless ichthyologist who is neither a profound logician nor a safe interpreter; and as he has discarded all authority in taking his position, he will be the last to demand a submission to his own mere authority, however great it may be. We shall therefore freely canvass his views, whilst, at the same time, we cheerfully

recognise his eminence as a naturalist, and the manly reverence with which he speaks of the Bible, and what he deems to be its teachings.

His preliminary position is, that animals are geographically distributed in separate provinces, in which the same species appears in different provinces and in different parts of the same province, at intervals that preclude the hypothesis of a common origin, and demand that of a separate creation. There is nothing in this position that necessarily infringes on any Bible truth or assertion, and our sole objection to it is, that there is no sufficient difficulty that demands it as a hypothesis, and no sufficient evidence that sustains it as a fact. The simple question to which it is at last resolved, is, whether the geographical distribution of animals may be accounted for by natural agencies dispersing them from a common centre, or whether a miracle must be assumed to account for it; and if so, whether the only miracle that meets the case, is that of a separate creation of the inhabitants of each separate province.

We are not prepared to deny that there are great zoological centres, each having its surrounding province whose fauna and flora are peculiar, but the sense in which this is true does not avail the new theory, and the sense in which it asserts these provinces is one in which they do not exist. The sense in which this is true, is, that there are different regions of the earth whose species are distinct and peculiar, or whose varieties are so marked as to indicate the action of local and provincial agencies. In this sense however it is of no avail to support the position that unity of species may consist with diversity of origin, for the species are diverse, and the varieties indicative of local action alone, and not separate creation. The sense in which the theory asserts such provinces, is that in which the species are the same; but so far as they are the same, the provinces are the same, and not different. And if the few facts on which the theory rests were multiplied to such an extent as to make all the species of all the provinces the same, it is plain that there would be no distinct provinces at all, and the theory must perish by the very completeness of its success. Its entire force then depends on the confounding of these two facts, which are totally distinct. Had exactly the same species been found in all the provinces there would have been no provinces, except in regard to the topographical lines of separation; and had the species of all the provinces been different, it would not have availed in this argument, where the species of the races is conceded to be the same. Let us then examine whether there are these broad and clear lines of topographical separation. It is obvious that no such lines exist,

from the fact that no two naturalists have been able to agree in their identification. The provinces overlap and interpenetrate one another to such an extent as to show that the cause is to be sought, not in the creation of separate races, but in the action of local and physical causes on races already created.

The same species we grant occurs in very different localities; but in almost every case, in such localities alone as could be reached by ordinary migration. Thus we know that the domestic animals have been spread. When America was discovered none of them were found here but the dog, whose use for draught in the Polar regions suggests the reason and mode of his introduction in that direction. The lion, tiger, elephant, etc., are found in Asia and Africa, but not in America, Australia or Polynesia, in the same climates, because they are separated from these regions by barriers impassable to them, and man has no motive to introduce them by artificial means. The vermin that accompany man, as his scavengers—such as rats, mice, cockroaches, flies, fleas, etc.—are never found in newly-discovered islands until after they have been visited by ships; showing the mode of their introduction. Certain provinces are found equally or more favourable to certain animals than those in which man first discovered them: if then each species was created in the locality it occupies, why were not these localities peopled with them? Why was not the camel created in Northern Africa, the reindeer in Iceland, the horse in Flanders, and the hog in Berkshire, where they are found so admirably to thrive; and where we know that they have been artificially introduced? These questions are unanswerable on this theory.

But facts show that animals are distributed precisely in the way which is denied by this theory. Dr. Bachman gives some curious and forcible illustrations of this point. The opossum occurs in the warmer parts of North America, west of the Hudson, but in no case east of it, for it is unable to swim, and dreads the cold too much to pass round the head waters of this stream, or cross it on the ice. The gofer is found on the southern bank of the Savannah, but not on the northern, with precisely the same soil and food, because it cannot swim. The soft-shelled turtle is found in all the streams and lakes connected with the Mississippi, even to the Mohawk and Hudson, but in none south of these until we reach the Savannah, because it travels only by water, and the streams on that part of the Atlantic slope do not connect with the northern or western waters. No eels were found in Lake Erie until the opening of the Erie Canal, which gave them an inlet; they are now plenty. The red fox, which is an arctic animal, was only found as low as Pennsylvania forty

years ago, then it appeared in Virginia, then in the Carolinas, and now it is more common than the gray fox. The latter, which is a southern animal, has, in like manner, migrated north until it has reached Canada. These facts show conclusively that such migrations are going on, and suggest the most easy and natural means to account for the geographical distribution of animals. The same process is going on in regard to vegetables and plants, for whose distribution, as they have not the power of voluntary locomotion, Nature has furnished the most elaborate provision. Some seeds are furnished with wings to be carried by the wind; others with hooks to fasten upon the passing animal and thus be transported; others are carried by water thousands of miles, as tropical productions have been stranded by the Gulf Stream on the shores of Iceland; whilst others are carried in the stomachs of birds and beasts many leagues from their native locality. No sooner does the coral reef become capable of sustaining vegetable life than it is supplied by some of these seed-carriers of nature. Facts on this point exist by the hundred. What conceivable need then exists for the hypothesis of a new creation, when we see the same species repeated in new localities!

The only difficulty that remains is, the occurrence of arctic plants and animals in the Alpine regions, cut off from their natural kindred. But it curiously happens that in the same review that contains the essay we are answering, there is a complete solution to this difficulty, unconsciously suggested by Professor Agassiz himself, when speaking on a different subject. In his scientific tour to Lake Superior he gave a very ingenious, and, as far as we can see, a satisfactory explanation of the phenomena of boulders, by referring them to a glacial origin. Now, where is the difficulty of giving the same account of the existence of these Alpine fauna and flora? As the glacial sea receded to the pole, the arctic animals and plants that co-existed with it, would naturally remain on these Alpine heights, which were congenial to them, since they would have no inducements to change their locality. Hence where this recession of the ice-line left them isolated on these arctic islands, they would of course remain and propagate just as their kindred which receded with the glaciers to the pole. Hence, there is nothing in this requiring a new creation of lynxes, marmots, and chamois, in the regions where they are now found.

Hence if we concede the existence of clearly-marked zoological provinces, as contended for by Professor Agassiz, the facts that they run into one another by insensible gradations, that migrations are going on from one region to another, that arrangements for this

mode of distribution are now in operation, suggest the likelihood that the same arrangements existed in former times, and actually effected the distribution which we find. The very same principle that requires us to suppose that the geological distribution of rocks was made by natural causes such as we now see in operation, demands that we should hold the same supposition in regard to the zoological distribution of animals. But even if it were demonstrated that these causes, in any conceivable mode of their operation, are insufficient to account for the effects, it will not follow that a separate creation in each locality is demanded as the only alternative. Some extraordinary agency must be supposed; but is this the only one? If a miracle must be assumed, may it not as readily have been in the distribution of these races to their present localities, as in their creation within them? Does not universal observation show that direct creation is usually the last expedient resorted to, in the attainment of any end? Now what is there to demand it as the only alternative here? We submit then that there is nothing in the distribution of animals requiring a miracle at all; and that if any such unusual interposition of Divine power was needed, it is much more likely to have been in the distribution of races already created, than in their separate and distinct creation.

But suppose these three links of the chain mended, the fourth breaks with the weight that is hung upon it. Grant that there are distinct zoological provinces; that they are so isolated from each other that their fauna and flora could not have come forth from a common centre; and that a separate creation in each province is the only mode of overcoming the difficulty,—we find that the races of men are not co-extensive and identical with these alleged zoological provinces.

One would think, from the confidence with which the learned Professor asserts the identity in the two cases, that not only the zoological provinces were clearly made out, but the limits of the races also plainly and universally ascertained. But there is no point in natural history more undetermined than this. Some make but three races, others five, others eleven, others still more; but the most remarkable fact is, that Professor Agassiz does not positively determine this point *himself*. He enumerates about a dozen zoological provinces, but not more than half that number of races. Why this significant silence? If his theory is really true, why did he not tell us what the races are, that inhabit these provinces? We shall perhaps see the reason as we examine the relations of the two distributions. This examination our limits will only allow us to make in one or two of these provinces which he has mapped out.

His first province is the arctic, with the Samoyedes, the Laplanders, and the Esquimaux. But can any one suppose that an animal so helpless as man, so destitute of natural covering, protection, and food, could originate in the bleak and inhospitable regions of the pole, where he could obtain neither clothing, fire, nor food? If we suppose him to have originated in a warmer region, and migrated thither, with his acquired knowledge and habits, these difficulties vanish; but if we suppose him created, a naked, shivering Troglodyte, amidst the eternal snows, we must pile miracle on miracle to account for his continued existence. But even if this difficulty were overcome, the Esquimaux of America are as widely separate from the arctic races of Asia, in distance, difficulty of communication, and physical features, as the latter are from the adjacent tribes of the Mongolians, or the former from the northern tribes of Indians. Why not make an Asian arctic, and an American arctic, on the same grounds that a distinction is drawn between the southern arctic and the northern Mongolian? There is absolutely no ground in the one case that does not exist as broadly in the other. The Malay race he assigns to a natural zoological province; but what it is, he does not inform us. It cannot be limited to his tropical Asiatic province, for it extends through Polynesia to western America, by the testimony of the most accurate observers, even those who deny the original unity of the races. The same difficulty exists in the provinces of New-Holland and Africa. The Tasmanian and Alforian races of the New-Holland province differ far more widely than the Malay and the Mongolian; and we have shown that Africa presents the widest extremes of variety, with every intermediate shade, from the fair races of Abyssinia to the genuine Dahomey negro. But when we come to the American provinces, the theory breaks utterly and hopelessly down. He makes four such provinces: one east, and one west of the Rocky Mountains; one in tropical America, and one in temperate South America. But where are the four races corresponding to them? Do not all recognise the same physical type in all our aboriginal tribes? Has even Professor Agassiz dissented from this? How then can the facts be cut up to fit the theory? But if we had the four races that have been created on this continent, what will we do with the Patagonians? The same questions might be asked in regard to the Papuan, Feejee, and other races, which though clearly and strongly marked cannot be referred to any distinct or definite zoological provinces.

It is abundantly evident from this brief enumeration of facts that there is no such coincidence in the geographical distribution of the races and that of the plants and animals, such as is asserted by this

theory. But suppose all these difficulties removed, and yet the last step could not legitimately be taken. If the races and zoological provinces were identical, that fact clearly could not prove that each race was created in its province. All that it could prove would be, that the human races, and the fauna and flora of each province, were subjected to the same or similar influences, giving them this identity of limitation. What these influences were, would not be determined by this coincidence of boundary, and would therefore remain matter for further investigation. Whether they were natural or supernatural would not be determined by such identity of circumscription. And if we must assume a supernatural agency, it by no means follows, that creation is the only one. The Divine power might as readily have been exerted in causing these peculiarities, or in distributing these races, as in their direct creation; and if we must assert its interposition to account for the varieties, we have at least the same right to affirm the smaller and more ordinary exercise of it, that he has to affirm the greater and more extraordinary.

The fact on which he lays so much stress, that climatic conditions are not exactly coincident with the various races, will prove that climatic conditions are not the only agencies at work in producing these varieties; and nothing more. What these other agencies are, and whether distinct creation is the only conceivable one, is wholly undetermined by this fact. His remark, that the adaptations of man to his various localities must have been intentional, is true; but it does not follow from this, that separate creation of each race was the only way in which this intention could be carried into effect. We grant that these adaptations were intentional, and simply affirm that they were brought about by an original susceptibility to such adaptations impressed by God on man's physical constitution; and that the same reasons for its existence at first require its existence now, and undoubted facts prove that it actually does exist. Designing man to be a cosmopolite, and to subdue the earth, he impressed him with this susceptibility, and the result is, the varieties we find in the races of the world. So far then is this designed adaptation of man to the various localities in which he is found, from proving that the varieties were separately created, it is the very fact that makes this supposition unnecessary.

We thus find this chain of assumptions to break at every link. Whilst there are zoological provinces, they are not such as to forbid their occupance by natural and existing causes; or if supernatural agency were required it is not necessitated to be in the form of creation; and if these points were reached, they would not avail us,

for the races of men are not identical with these provinces; and if they were, this identity would be explicable by that adaptive susceptibility of the human constitution to conform itself to the varying conditions in which it is placed, with which man, as the destined conqueror of the earth has been furnished; and if some direct and unusual interposition of Divine power must be supposed, it was much more likely to be in producing these varieties from a race already existing than in calling new ones into existence. Hence in every part of this new theory we find it more completely untenable than the old one.

We have neither the space nor the heart to follow the Professor into all his random utterances. It were cruel to take advantage of all the exposed points he presents to an opponent. Thus, in tossing aside the philological argument, he says, that it is as natural for men to talk, as it is for dogs to bark, or asses to bray, and that one bird does not learn its song from another; and hence we could not from the phenomena of language infer unity of origin. Now, if one bird does not learn its song from another, does this prove that one human being does not learn its language from another? And aside from the fact that it is not natural for dogs to bark, as they never do it in their wild state, is there no difference between an inarticulate cry, and the use of a set of conventional sounds to designate certain thoughts? Does not the one imply previous arrangement and agreement, where the sounds are the same, whilst the other does not? If we argued man's original unity from his instinctive cries, it were pertinent to refer us to the instinctive cries of animals; but when, from the fact that the same or similar collocations of syllabic sounds are applied by different races to the same natural objects, we argue that there must have been a previous agreement that these sounds should designate these objects, the reference to the braying of asses, etc., looks really like trifling.

But his exegesis is as curious as his logic. He asserts triumphantly, that the Bible is solely an account of the white race, and makes no reference at all to the other, and, as he terms them, the non-historical races. We would be glad to know how he has discovered that Adam and Noah belonged to the white race at all. The best critics have been unable to discover any evidence for it from Scripture; and scientific grounds, we are disposed to think, indicate the primitive type as intermediate between the white and the black. But, however this may be, the assertion that the Bible sanctions the original plurality of the races is amazing. Is it not expressly affirmed, that before the creation of Adam there was not a man to till the ground? That when he was created, man (the

generic term always used to denote the whole human race) was created? That he was the head of the human race—the one by whom sin and death entered the world? If then the non-historical races sin and die, have they not these proofs of their connexion with Adam? Is not Eve called the mother of *all* living? And did Moses know of no other living races but the white one? Does he not expressly declare (Deut. xxxii, 8,) that the divided nations of the earth are the sons of Adam? Does he not refer the Ethiopian and Egyptian races to Noah through his sons Cush and Mizraim? Is not the physical characteristic of the Cushite unequivocally intimated when it is said that he cannot change his skin? Did not Christ expressly endorse this when he taught monogamy from the original unity of the race in Adam and Eve; and when, to fulfil the prophecies respecting Ethiopia, China, (Sinim,) and the islands of the Sea, he commanded his disciples to go and preach the Gospel to every creature? And can words declare it, if Paul's did not, when, in opposition to the Athenian doctrine of a separate, autochthonal creation for Attica, he declares that God has made of *one blood* all nations of men to dwell on the face of the whole earth? Is not the entire Bible-teaching about sin, the moral government of God, the fall of man, and redemption in Christ, based on this assumption? If we exclude the non-historic races from all connexion with Adam, must we not, by the express language of Paul, ("as in Adam all die, so in Christ shall all be made alive,") also exclude them from all connexion with Christ? And if on the contrary they are expressly affirmed to be connected with Christ, does not this also affirm their connection with Adam? Must not a cause that requires such exegesis as this be pressed for support?

That Professor Agassiz was aware how wide and deep was the sweep of his views, is apparent from his fling at mock philanthropy; his assertion of the original and necessary inferiority of the African race; his avowed inability to decide what is the best education that can be given them; and his magisterial denunciation of the injudiciousness of the attempt to force the peculiarities of our present white civilization on all the nations of the world. The plain meaning of all this is, that the benevolent and missionary operations of the Church, in their application to any other than the white race, are foolish and futile attempts to traverse the immutable ordinations of the Creator.

We cannot trust ourselves to speak of sentiments like these as perhaps they really deserve. There is something in this cold-blooded and haughty assignment of more than half the human race to a doom of hopeless, irreversible degradation, for time and eter-

nity, and this by the very act and arrangement of their original creation, from which the Christian heart recoils with indignation and disgust. We thank God that the nations sitting in darkness are not left to the tender mercies of human philosophy, and that its endorsement is not needed to warrant us to go forth into *all the world* and preach the gospel to every creature.

And we know of no more unanswerable argument for the absolute unity of the race than that furnished by the very phenomena that call for and warrant the efforts so sneeringly decried by the learned Professor! Alas! the same sad proofs of brotherhood in sin and sorrow, of common parentage and common fall, of depravity transmitted by universal and hereditary taint, meet us in every race. The same wail of remorseful sorrow comes up in mysterious plaint from all; the same mournful memories of primeval purity now soiled and dishonoured; the same gleaming visions of an Eden innocence that has faded away, leaving only these mute longings after its unforgotten brightness; the same dire and terrific phantoms of guilt that come forth to awe and affright; the same deep yearnings after the unseen and the eternal in the soul's deepest stirrings; and the same sublime hopes that shoot upward to the "high and terrible crystal,"—are found alike in every race of every hue. The unspeakable gift of Christ and him crucified, is as wide in its efficacy as these mournful symptoms of malady. The lofty intellects of a Pascal and a Newton, do not grasp it with a keener relish and a deeper sympathy than the besotted Caffre in the lonely wilds of Africa, or the crouching Pariah in the steaming jungles of India. The Cross is that wondrous talisman that calls forth from every adventitious guise the universal manhood and brotherhood of the races. And when the lowliest African is "born again," in that heavenly birth that links into a new and holier unity the fallen descendants of the first Adam, he is found to exult with as pure a gladness as the honoured heir of the proudest and noblest blood. O! it is this blessed fact that stands in lofty and indignant rebuke of that cold and cruel philosophy that would wrest from the humble and the oppressed the only boon that is beyond the grasp of an unfeeling avarice. It is for this reason that we contend so earnestly against this vamping up of the old infidel theories of Voltaire. It is because we believe that its general reception will not only undermine the authority of the Bible, but also cut the sinews of the noblest charities and the purest pieties of our age; sink the unfortunate and degraded into a deeper and more hopeless degradation; give a plausible plea to cruelty and avarice to rivet tighter the fetters of oppression; and fling a pall of despairing gloom over the brightest

visions of the future, unfolded on the canvass of prophecy: it is for these reasons that we oppose this theory with such earnestness and warmth.

But having shown, as we think unanswerably, that the old and admitted principles of natural history require us to regard the varieties of the human race as belonging to the same species, and having shown that the last and most ingenious evasion of this argument is an utter failure, we may sit down content with what the word of God has clearly asserted, and the vast majority of the first naturalists of the world have believed—that men were not the offspring of diverse origins, but that God has made of *one blood* all nations of men to dwell on the face of the whole earth.

Art. II.—THE DOCTRINE OF THE LOGOS IN THE INTRODUCTION TO JOHN'S GOSPEL, Chap. I, 1–18.

[FIRST PAPER.]

We have read, with much satisfaction, the investigation of this interesting but difficult passage, by Professor Stuart, in the January and April numbers of the Bibliotheca Sacra for 1850. We had, some time before, formed our own opinion of the interpretation to be assigned these verses, by a careful study of their scope as well as phraseology; and are gratified to find so many of the results of our inquiries confirmed by the views of so eminent an expositor and critic. How far we are following in his wake, and where we deviate from it or pursue a cross track, those who may feel interested to know, can best ascertain by a collation of the dissertations above referred to with our own lucubrations, exhibited in a simple and independent manner. These we now commit to our readers, not with the presumptuous thought of arraying ourselves against a veteran scholar of so vastly superior erudition; but with the humbler aim, partly of propagating and partly of reviewing some of the conclusions to which he has arrived.

We may premise that we can see no good reason for supposing that John borrows the term Λόγος in this peculiar application, either from the nomenclature of oriental Gnosticism or the dialectics of Alexandrian Platonism. The writings of Philo he can scarcely have ever read, or if he had, he would have more distinctly referred to them; and the Gnostic heresy was not yet sufficiently developed to