

say, the creation of some forms of life. But if some were created, why not all? You are—if such a thing were possible—less logical than the French and German evolutionists. They deny creation altogether. They see that if they admit it for anything they must admit it for everything, and would thus be compelled to acknowledge the existence of a Creator in whom they professedly do not wish to believe. Yet with a credulity that is perfectly refreshing in this incredulous age, a Broca and a Haeckel place the greatest good faith in the existence of forms which they regard as necessary to constitute the basis of their theory of evolution, but which they themselves call into being out of nothing more than protoplasm and their inner consciousness! The infidel Rousseau was right when he said, "the incredulous are the most credulous." You believe in the creation of a few primary forms of life. Now I should like to know what those forms were, and how from them man could possibly be evolved.

Ev.—Different views are entertained. According to Mr. Darwin, there existed at an extremely remote period a group of animals resembling in many respects the larvae of our present *ascidians*, and divided into two classes; the one retrograding and producing the *ascidians* which now exist, the other rising to the height of the animal kingdom by giving birth to the vertebrates: all of which is readily proved by the similarity of the changes that take place in the embryonic development of the *ascidian* and the vertebrates;—a similarity so close as to establish clearly that there must be a genetic relation between the two cycles of life, hitherto regarded as distinct. From the *ascidian* we advance to the *amphioxus*, the lowest known vertebrate; and here again the same relationship is manifest. The next step in the order of evolution is that occupied by the cartilaginous fishes, which closely resemble the *amphioxus* both in structure and habit. We can now easily trace the procession of being to the *lepidosiren*, an amphibian animal like the frog. And now, on the testimony of Mr. Huxley that extinct reptiles have affinities to birds, and the *platypus* of Australia to birds and reptiles, the *platypus* holds the next place in the order of succession. From it, through an implacental mammal, the *kanagaro* was next evolved. Then comes the *lemur*, the lowest of the *quadrumana*; and after the *lemur*, the *simiadae*. The latter seem to have divided into two classes, producing the *platarhine* and the *catarrhine monkeys* of the new and old world respectively. From these in turn descended the *anthropomorphous* or *man-like ape*, and from it the *ape-like man*, who was our immediate progenitor.

Such, Sir, is the doctrine of man's origin held by modern science.

Sc.—Say, rather, by some modern scientists.

Ev.—Well, by some modern scientists, if you will; but these the most famous our age has produced. I have not entered into a detailed account of the processes involved in the transformation of being from one species to another, through all the grades of animal and vegetable life; but I can state with confidence that the grounds which have led to the wide acceptance of our doctrine are such as never can be shaken.

Sc.—And what may those grounds be?

Ev.—Briefly, that species both of plants and animals rise above and pass into one another by almost imperceptible gradations; and that between the higher mammals and man, who, to speak plainly, is only an improved ape, there exist innumerable points of similarity in embryonic development, structure and faculties.

Sc.—Then, according to you and Mr. Darwin, man has been derived from something like the *larva* of an *ascidian*, by gradual progressions through the whole animal kingdom. But to establish your theory, you make conjectures wholly unfounded, and you coolly assume as certain what is opposed both to reason and experience, and which therefore should be rejected by any man endowed with common sense.

Ev.—You are surely jesting. I stated broad facts, and made no assumption that was not founded upon them.

Sc.—I beg your pardon. In the first place, you bring in as necessary links in the chain of evolution, certain animals of whose past or present existence there is not the slightest evidence. You next assume as granted or as true what is utterly impossible, namely, that one species of animals or plants can give rise to another species. This assumption includes another, equally contrary to reason and experience,—that there is in organic beings an invariable tendency to differentiate and improve. Finally you assume that because man resembles some animals in structure and in some only of his faculties, he has therefore been derived from them.

Ev.—Although I must say that the most definite information has not been obtained with regard to the animals you refer to; yet the hypothesis of their existence is highly justifiable, especially when we have once demonstrated the certainty of genetic progression, and have considered by what gradual stages this progression advances. We can then, I say, most scientifically assume the existence of intermediate forms, by pursuing the same method of investigation as in all scientific inquiry.

Sc.—By your method of investigation or invention, any hypothesis however groundless is to be admitted provided it supports the theory of evolution. In other words, where observation fails to supply you with facts you can draw for them on your imagination. You speak too of having demonstrated the certainty of a genetic progression. In fact, however, you suppose that also, and by doing so you assume as certain a manifest impossibility, that is, that species can change.

Ev.—And you call that a manifest impossibility!

Sc.—Certainly, Sir, since it is contrary to reason and contrary to experience. But perhaps you are not properly aware of what essentially constitutes a species.

Ev.—Naturalists, I believe, in determining whether two or more allied forms ought to be ranked either as species or varieties are guided by the following considerations; the amount of difference between them, whether this difference relates to few or many points of structure, and, especially, whether they are of a constant type for a continued length of time.

Sc.—I am glad to find that you are partly right. There is something then upon which we can agree. Similarity of structure is one of the characteristics of species, and constancy another—one, I am surprised that you would acknowledge. But species is constant through all time. This is readily proved by the philosophy you affect to despise. It defines species as a certain type and essence of individuals which are fertile *inter se*. Now essences cannot change; hence species is immutable, and thus reason proves your assumption to be false.

Ev.—Let your philosophy rest in the dusty tomes from which you took it. Fertility and sterility are no safe criterions of identity or distinctness of species, since they are easily affected by changed conditions of life, by close inter-breeding, and are governed by highly complex laws. What constitutes a species is a question