

was the first to break off from the basal stem of the Giant Primates. The orang, although it has the giant size, has retained the brachiating or arm locomotion of the gibbon stock, his thumb and great toe have become vestiges; the process of shortening of the spinal column, which set in during the Hylobatian stage, has progressed, so that now the lower limbs are attached to the body one or two vertebræ higher than in man, the gorilla, and chimpanzee. It has retained a primitive arrangement of the air cavities of the nose and face, whereas man, the gorilla, and chimpanzee have the same elaborate arrangement of cells which differentiate them from all other primates.

The orang's lower limbs are in a state of retrogression—as opposite to human limbs as could be. The Aurignac man, which Prof. Klaatsch assigns to the orang stock, is remarkable for his narrow and long head, whereas the orang's head is the most rounded of all primate forms. The resemblance between the humerus of the Aurignac man and that of the orang is fanciful, in my opinion. If we may judge the basal orang stock from its modern descendants, the one thing we can be certain of is that it is the last of the Higher Primate stocks which is likely to give rise to the human race. On the other hand, the chimpanzee, and especially the gorilla, are evidently the descendants of a stock from which it is not difficult to suppose the primary human stock may have arisen. The tendency to a greater use of the lower limbs was evidently already present in that primitive stock.

The conclusion I reached in 1900 simply confirmed the statements made by Huxley in 1863.

Nothing is impossible in nature, but there are some things which are highly improbable. A multiple origin for a single species is one of the most improbable, and, so far as the human species is concerned, there is no need to suppose a multiple origin. Prof. Klaatsch's opinion of anthropoid apes throws an interesting light on his theory. He has reverted to a slight modification of the very ancient view of the anthropoids—that they are representatives of retrograde humanity. In Herr Bonin's words, Klaatsch regards the gorilla and the other man-like apes as "failed experiments of man." There is no scientific basis for such a statement—the gorilla fills its place in nature quite as satisfactorily as man.

This view of the nature of the anthropoids only affects us so far as it may help us to understand Prof. Klaatsch's theory of the "pan-anthropoid" origin of human races. If that opinion is well founded, the opinion that the Higher Primates were designed as experiments in "Menschwerdung," then, of course, it follows that the experimenter may have succeeded on several occasions, and that each of the primitive primates may have given rise to races of men. In reality, we are being again introduced to the old theory of design, and hence the statement in my last letter that Prof. Klaatsch's theory exceeded "the limits of rational speculation."

A. KEITH.

Royal College of Surgeons, England, February 4.

#### "In Forbidden Seas."

"D. W. T.," who writes a review of the sea-otter, or rather of a book called "In Forbidden Seas," in *NATURE* of January 26, tells us that he is not aware that any living naturalist has ever seen this animal in its natural state. Now, Captain H. J. Snow, who is the author of "In Forbidden Seas," is, from my point of view, a first-class field naturalist, who by his collections and observations has added considerably to zoological and geological knowledge. I may add that he is also a keen surveyor, and his maps of the islands in these "Forbidden Seas" were so far back as 1895 published for the use of sailors by our Admiralty. By the publication of these charts, the shortest routes between Vancouver and certain ports on the Asiatic coast have been freed from uncertainties and dangers. Canadian and other vessels crossing the North Pacific, in cases of emergency have new harbours of refuge which can be approached with comparative safety. Snow's charts show new rocks and shoals, take out others, adjust islands in longitude, indicate anchorages, tide rips, watering places, seal and seal-lion rookeries, and, in short, make the unknown known. Sailing directions go with the charts.

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By reason of their knowledge of these Forbidden Seas and our ignorance of them, in 1855 the Russian fleet was enabled to evade that of the French and English allies. H.M.S. *Rattler* was wrecked in these seas, and the Japanese man-of-war *Tabor* was totally lost. The disabling of several gunboats which have attempted to survey these islands, and the numerous wrecks of British and other schooners which are to be found along their shores, testify to the difficulties which surround the navigation of these waters before the advent of Captain Snow. The Royal Geographical Society were so impressed by the value of his work that they awarded him one of their annual grants, and approached the Lords of the Admiralty to obtain for its author substantial recognition. Had the work been carried out by one of our surveying vessels it would have cost this country many thousands of pounds. All that was learnt was to the effect that no rule existed for the payment for work of this description. At a subsequent date the Rt. Hon. Arthur J. Balfour was approached. Among the signatories to the petition I see the name of the president of the Royal Geographical Society on behalf of the council, the Admiral of the Fleet, Rudyard Kipling, and those of many other well-known persons. Captain Snow gave up his working tools and received no recognition. I know that captains and admirals of British ships, like commissioners sent out to study seal fisheries, have sought and obtained valuable information from Captain Snow.

JOHN MILNE.

Shide, Newport, Isle of Wight, January 30.

I AM surprised and sorry that Prof. Milne should think, as he seems to do, that I sought to belittle Captain Snow's achievements, for I not only based my article on the sea-otter upon Captain Snow's additions to zoological knowledge, but I also paid an unstinted compliment to Captain Snow's romantic and adventurous career. I mentioned briefly that Captain Snow had won the reputation of an authority on the geography of the Kuriles; but that brief statement, brief because I was not dealing with, and was, indeed, very imperfectly acquainted with, his geographical work, was necessarily inadequate. Prof. Milne has done proper justice to this part of Captain Snow's work.

As regards the valuable information that Captain Snow has given to persons charged with the inspection of the seal-fisheries, I can bear testimony of my own. Still better testimony can be found, for instance, in Dr. L. Stejneger's report of 1898 on the Asiatic fur-seal islands, for Dr. Stejneger not only draws his description of the Kurile seal-rookeries chiefly from Captain Snow, but pays tribute to his "invaluable additions to the authentic history of the Kuriles," and to himself as "a man of unusual ability, literary and scientific, for the profession he had chosen to follow."

D'ARCY W. THOMPSON.

#### An Apparently hitherto Unnoticed "Anticipation" of the Theory of Natural Selection.

IN Loudon's *Magazine of Natural History*, 1835, pp. 40-53, there appears an article entitled "An attempt to classify the 'Varieties' of Animals, with observations on the marked Seasonal and other Changes which naturally take place in various British Species and which do not constitute Varieties," by Mr. Edward Blyth. Certain passages contained therein seem to indicate that the principle of natural selection, or the survival of the fittest, was clearly understood by Blyth in 1835, and, further, that he recognised its application to artificial selection. Moreover, he demonstrates the idea of sexual selection in one of its bearings. I have therefore considered them of sufficient interest to be made public, as it appears they have hitherto escaped notice.

"When two animals are matched together, each remarkable for a certain peculiarity, no matter how trivial, there is also a decided tendency in nature for that peculiarity to increase; and if the produce of these animals be set apart, and only those in which the same peculiarity is most apparent, be selected to breed from, the next generation will possess it in a still more remarkable degree; and so on, till at length the variety I designate a *breed*, is formed, which may be very unlike the original type." . . . "It is worthy of remark, however, that the original and typical