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Dr. Buckland delivered a lecture on a large and valuable collection of fossil bones from the Sub-Himalayan Mountains, which has recently been presented to the Ashmolean Society by Lieut. Colonel Stacy, of the Bengal Native Infantry, honorary member of the Ashmolean Society.

Dr. Buckland began with pointing out the advantage of societies united for the promotion of natural knowledge, in stimulating our countrymen in distant regions to collect information, by the assurance that their labours will be duly appreciated in their native land, and that their exertions in adding to the general stock of human knowledge will not have been in vain. He cited the recent presentation of the Wollaston medal by the Geological Society of London to Captain Cautley and Dr. Falconer, for their discoveries in the regions from which Colonel Stacy obtained the fossils presented to the Ashmolean Society, in proof of the high importance of the additions these gentlemen have made to

the palæology of India. In a region remote from scientific libraries, and cut off from all access to anatomical collections, these British officers, whilst engaged in making surveys, and the construction of public works and canals, found their attention arrested by the discovery of multitudes of fossil bones of various animals, many of them of gigantic stature; some buried in the earth in which they were conducting their excavations, others projecting from cliffs and slopes of hills and sides of ravines that traverse that part of the Sivalik, or Sub-Himalayan range of hills which lies between the Jumna and the Sutlej rivers.

The native elephant and rhinoceros, and other wild beasts which they slaughtered in the adjacent forests, afforded to the scientific zeal of these gentlemen the only accessible means of comparing recent skeletons with the remains of extinct congenerous animals which their researches had brought to light, and the results of their labours have been recorded in several memoirs of high scientific merit in the Asiatic Researches of Bengal, 1836. Other important notices of fossil remains from the same district have appeared in the Journal of the Asiatic Society of Bengal, 1835, &c.

On comparing these Indian fossils with the fossil remains of mammalia that have been discovered in Europe, a remarkable coincidence is found between them and the mammalia that occur in strata referrible to the Miocene period of the Tertiary series at the three celebrated localities of Epplesheim in Darmstadt, of Geörgensgemünd in Bavaria, and Sansan near Auch in the S.W. of France. Extinct species of many genera of pachydermatous animals, e. g. elephant, mastodon, hippopotamus, rhinoceros, hog, horse, together with fossil carnivorous and ruminant animals, are common to these European localities, and to the hills between the Jumna and the Sutlej. Similar remains were discovered in the Burmese country, on the banks of the Irawadi, by Mr. Crawfurd and Dr. Wallich; and are described in the Transactions of the Geological Society of London, 1828. The largest and most remarkable fossil animal found in these formations in Europe is the dinotherium, which was

the most gigantic of all extinct or living mammalia, and has not yet been discovered in India.

The strata of Sansan and of the Sivalik hills have simultaneously afforded the fossil remains of a quadrumanous animal; the lower jaw of an ape found at Sansan, and an astragalus in the Sivalik hills, have added the genus Simia to the known relics of a former world. Another bone of a fossil ape has subsequently been found in digging a well at Calcutta.

One of the most remarkable of the Indian fossil animals is the sivatherium, from the valley of the Markanda. It exceeded in size the largest rhinoceros, and forms a new and important link between the ruminant and pachydermatous animals. The head, found nearly entire, has four short, thick, and straight horns, like the four-horned antelope of Hindostan: the front is unusually wide; the face short; the cavity for the eye smaller than in existing ruminants; the bones of the nose are remarkably salient, as in the rhinoceros, tapir, and palæotherium: hence we infer, that the sivatherium was provided with a trunk of an intermediate character between that of the tapir and the elephant.*

The same locality has supplied another desideratum to the list of fossil ruminant animals, by disclosing portions of the jaws of two extinct species of camel; camelus sivalensis and camelus antiquus.

Among the fossil Indian carnivora is a new species of bear, ursus sivalensis, equal in size to the largest living species, and more carnivorous than frugivorous; and a new fossil tiger, felis cristata, probably intermediate between the tiger and the jaguar.

From the same locality there are also in Colonel Stacy's collection the remains of many fossil heads of ruminant animals, ox, buffalo, deer, &c.

* A lower jaw of the sivatherium, and fragments of jaws containing teeth of the fossil camel, are in the collection presented by Colonel Stacy to the Ashmolean Society.

Amongst the remains of reptiles, are those of a crocodile, allied to c. biporcatus; a gavial, very like the living gavial of the Ganges; and a tortoise, carinated like the living Indian species.

Of the fossil animals found in the Sivalik hills, the elephants and mastodons are the most numerous; and next to these the hippopotami, of which there are several species. Lieutenant Durand has calculated that in a collection at Dadupur, the proboscideans are to the other pachydermata in the proportion of three to one, and to the ruminants as five to one. The local assortment of the fossil remains in this district is irregular: in some places the bones of elephant, mastodon, hippopotamus, crocodile, and tortoise, are found with the remains of ruminant animals; in others, the hippopotamus and aquatic reptiles are rare, and the bones of ruminant are almost exclusively mixed with those of carnivorous animals.

In the course of the lecture Dr. Buckland illustrated, by reference to the fossils from India, many peculiar contrivances and remarkable compensations in the structure and dentition of the elephant, mastodon, rhinoceros, and hippopotamus; and took a general review of the geographical distribution of the recent and extinct species of the larger pachydermata over the surface of the globe, from the torrid regions of India and America to the frozen shores of the Polar seas. He also pointed out the importance of these newly-discovered fossil animals in filling up intervals, where links were wanting to connect many living genera in the order pachydermata, between which the distance is much wider than in any other order of mammalia.

Dr. Buckland announced, that another magnificent present of bones from the Sub-Himalayan Mountains has been made to the collection of the University of Oxford by Colonel Kennedy. Among these are the upper portion of the humerus of an elephant of colossal magnitude, and many remains of mastodon, hippopotamus, &c.