

SOME EXTINCT HIPPOPOTAMI AND ELEPHANTS FROM INDIA AND CEYLON

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ABSTRACT—This paper attempts to clear the confusion existing in the taxonomy of Pleistocene elephants and discusses their distribution and that of Hippopotami in India and Ceylon.

THE Siwalik fauna of India that has extended as far as Ceylon, Burma and elsewhere, includes a number of proboscideans and hippopotami which are of considerable value in dating various horizons. For example in the family Elephantidae, the subfamily Stegodontinae appears at an earlier date than either the Palaeoloxodontinae or the Elephantinae.

The first subfamily is unknown in Ceylon whereas the third is unknown as a true fossil from any country other than Ceylon where it occurs in association with hippopotamus and rhinoceros remains.

Much confusion exists in the taxonomy of Pleistocene elephants mainly because of the close similarity of the teeth of species that actually belong to different sub-genera and even genera; for example *Stegodon insignis* F. et C. and *Stegodon ganesa* F. et C. These names were conferred by Falconer and Cautley in 1846 upon three isolated molars from the Siwalik deposits but since they could not be distinguished apart, the two names were later combined as *Stegodon insignis-ganesa*.

In the meantime *S. insignis* has been conferred upon an elephant with a flat topped skull and possessing feeble tusks, and *ganesa* assigned to an elephant with a domed head and enormous tusks. The two differ sub-generically, and the first is now termed *Stegodon (Platystegodon) insignis* (F. et. C.) the latter *Stegodon (Stegodon) magnidens* Deraniyagala, since the original name *ganesa* is a synonym for *insignis* as their types are indistinguishable apart specifically (Deraniyagala, 1954).

Of younger age are the Palaeoloxodontinae characterised by a heavy ridge-like supra-orbital crest extending across the frontal and sometimes on to the parietals.

Two genera *Palaeoloxodon* and *Hypselephas* occur in India and are best known from the Middle Pleistocene lake deposits now traversed by the Narbadda river. Although a few isolated teeth from Ceylon are referable to these two genera, here the predominant fossil is an extinct race of the living asiatic elephant which is the most recent member of the order Proboscidea. Its fossils occur together with those of a primitive hippopotamus in the gem sand of Ceylon that varies in thickness from 6 ins. to 3 ft. and usually lies at depths ranging from 12 to 40 ft. beneath the surface.

In the Siwaliks of India the hippopotamus horizon is separated from that containing the remains of *Elephas maximus* by a thickness of nearly ten thousand feet of various beds, and consequently the correlation of the deposits of the two countries was a problem. Recent uranium tests of associated hippopotamus and elephant fossils from the gem sand in Ceylon have revealed that the former animal is much older than the latter (Deraniyagala, *in press*), which indicates that the Ceylon gem sand is the product of redeposition. The nearest ally of the Ceylon hippopotamus is *Hexaprotodon namadicus* (F. et. C) from the Narbadda deposits (Hooijer) and this together with the palaeoloxodontine fossils of Ceylon date them as being of Middle Pleistocene age, *Elephas maximus sinhaleyus* an associate fossil being younger, is probably of Upper Pleistocene age. All these should eventually prove of much value in dating Stone Age man.

Human stone artefacts have not been definitely proved to occur in association with hippopotamus fossils from any part of India, although several such claims have been made, as in the case of the Boulder Conglomerate. The presence of lithic artefacts in the gem sand of Ceylon might be

solely the result of redeposition, but the possibility that early Stone Age man and the hippopotamus were contemporaries cannot be ruled out completely, although the Indian

beds lying in their original sequence is essential for its solution.

Among the extinct species from the gem sands of Ceylon are the hippopotamus

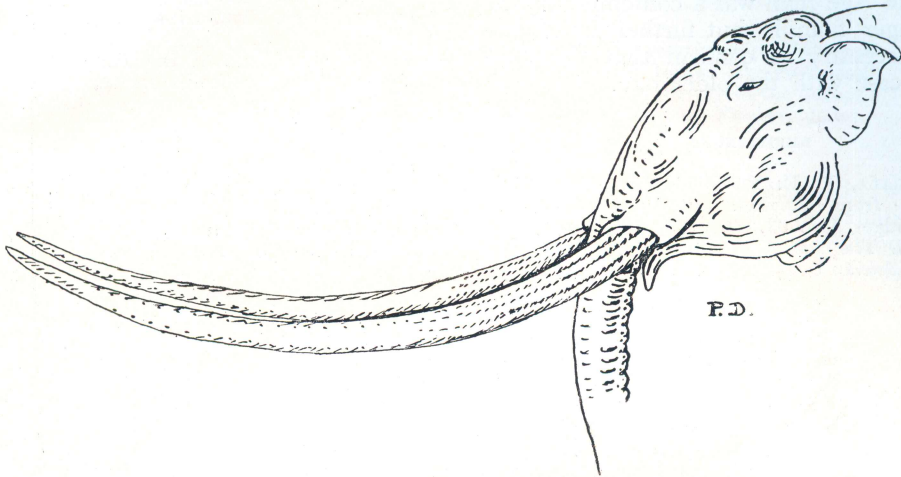


FIG. 1—*Stegodon (Stegodon) magnidens* Deraniyagala

evidence has tended to do so hitherto. The association of stone artefacts of the older Ratnapura culture with those of the younger Balangoda one in the gem sand of certain

Hexaprotodon sinhaleyus Deran., *Palaeoloxodon namadicus sinhaleyus* Deran., *Elephas maximus sinhaleyus* Deran., *Bibos gaurus sinhaleyus* Deran. and deer.

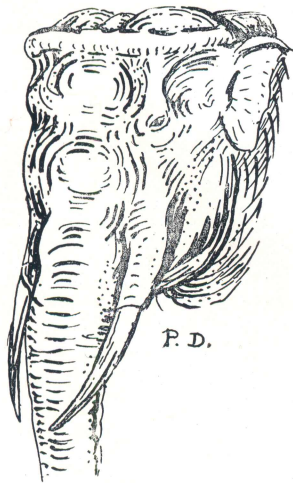


FIG. 2—*Stegodon (Platystegodon) insignis* (Falconer et Cautley).

areas further complicates the problem, and the discovery of undisturbed fossiliferous

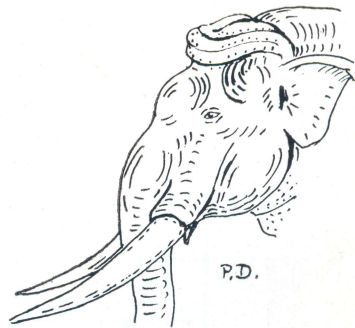


FIG. 3—*Palaeoloxodon namadicus* (Falconer et Cautley).

(Reconstructions by P. Deraniyagala).

This extinct fauna is closely related to the Narbadda one both in its composition and paucity of species, but a striking difference is the absence of the horse from the former, in which feature Ceylon resembles Java.

The extinct *Ratnapura fauna* of Ceylon comprises two faunules. The older of these was originally characterized by hippopotamus fossils, the younger by those of the asiatic elephant and gaur. There is no doubt that Stone Age man was a contemporary of the younger faunule but further investigation is necessary to confirm that this was also the case with the older one.

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