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## NEW SUBFAMILY, GENERIC, AND SPECIFIC STAGES IN THE EVOLUTION OF THE PROBOSCIDEA

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In previous papers the author has subdivided the Proboscidea (exclusive of *Mærittherium*) into eleven subfamilies corresponding with phyletic lines of greater or less antiquity. To these he would now like to add the following.

### **Mœritheriinae**, new subfamily, Winge-Osborn

(Cf. Moeritheriini Winge, 1906, p. 172, used to include *Mærittherium* and *Barytherium*.)

The genotype is *Mærittherium* Andrews, 1906, of the Fayûm, of which at present we know four specific stages in lower and higher beds all having the same subfamily characters. We may await the discovery in other parts of Africa of parallel phyla with different subfamily tendencies. The subfamily Mœritheriinae embraces *Mærittherium* only and excludes *Barytherium*.

### **Zygolophodontinae**, new subfamily

Based upon the genus *Zygolophodon* Vacek, 1877. These "yoke-toothed" mastodonts, browsers of the temperate forests of Europe and Asia, include *Zygolophodon tapiroides*, *Z. turicensis*, *Z. pyrenaicus*, *Z. virgatidens*, *Z. subtapiroideus*, and terminate in the Upper Pliocene species *Z. borsoni*. Grinding teeth purely lophodont, with polybunodont crests, entirely lacking trefoils.

Among the new genera and species of Proboscidea are the following.

### **CUVIERONIUS**, new genus

Based upon the genotypic species *Mastodon humboldtii* Cuv. This genus is distinguished by double trefoils in the superior and inferior grinding teeth, also by simple, rounded, outwardly and upwardly curved tusks

lacking the enamel bands. The distinctions long observed as separating the species *Mastodon humboldtii* from *M. andium* also serve to distinguish the genus named in honor of Cuvier from the genus *Dibelodon* Cope which seems to be the only generic name properly applicable to *M. andium*.

**SERRIDENTINUS**, new genus

Based upon the genotypic species *Mastodon productus* Cope, *M. serridens* Cope, *M. floridanus* Leidy, *M. obscurus* Leidy, and *Serridentinus simplicidens* Osborn below, characteristic of the southeast coast of the United States from Maryland to Florida; clearly distinguished from *Trilophodon* by the serrate crests ascending on the outer cones of the lower molars and on the inner cones of the upper molars; true trefoils, i.e. intermediate conules in the center of the valleys, observed in all species of *Trilophodon*, are wanting.

**PROSTEGODON**, new genus, Matsumoto

In a letter from Dr. H. Matsumoto, dated November 20, 1922, from Sendai, Japan, he writes: "In my report just in preparation on the Japanese 'Mastodonts,' I follow you to refer '*Mastodon*' *latidens* to the genus *Stegodon*, creating however a subgenus *Prostegodon* for it. *Prostegodon* is the primitive representative of the *Stegodon*-phylum, representing half bunomastodontine and half stegodontine dental characters. Schlosser's opinion, that *Prostegodon* might be ? a descendant of '*Mastodon*' *turicens*, does not appear to be correct at all." Genotypic species *Mastodon latidens* Clift. This genus should be credited to Doctor Matsumoto.

**Serridentinus simplicidens**, new species

This is the smallest and simplest member of the *Serridentinus* phylum thus far found on the southeast coast of the United States. The type of the species is a molar tooth, Amer. Mus. 1907 (and associated fragments), from Lakeland, Florida, presented by Mr. C. R. Halter in 1922, and originally identified by Osborn (in 1922) as "*Mastodon*" *obscurus* Leidy. A comparison with the type of "*Mastodon*" *obscurus* (Philadelphia Acad. 13278) shows that the specific stage of *Serridentinus simplicidens* is more bunodont, the cones and crests being lower and much simpler, and the lateral crests of the outer cones less fully developed.

**Trilophodon progressus**, new species

The type of this hyperlongirostrine specific stage is a left ramus of the lower jaw (Amer. Mus. Cope Coll. 8529), from Driftwood Creek, Hitchcock County, Nebraska, the same specimen having been figured by Cope as "*Tetrabelodon proavus*" in his revision of the Proboscidea. The ridge formula is the same as in the typical *Trilophodon angustidens*, namely:  $M3_{4\frac{4}{3}}$ . This tooth, however, exhibits a very marked evolution beyond the typical *T. angustidens* in the vertical elongation or hypsodonty of the lophs, and points towards the still more hypsodont stages, *Trilophodon giganteus* Osborn and *T. ligoniferus* Cope-Matthew.

**Tetralophodon precampester**, new species

Type, a third inferior molar of the right side from Harlan County, Nebraska, in the Nebraska Museum (Neb. Mus. 10-11-7-10). This type exhibits five complete crests, a protoloph, metaloph, tetraloph, and pentaloph, also a narrow anterior half crest, as compared with the broad anterior half crest in *T. campester*; the crown is relatively shorter and broader than that of the *T. campester* Cope type; cement fills the valleys and rises at the sides of the crowns in the tritoloph and tetraloph.

This species is published by the kind permission of Professor Erwin H. Barbour.

**Rhynchotherium rectidens**, new species

Type, right and left upper tusks (Amer. Mus. 9366) from near Pawnee Buttes, Middle Miocene of Colorado.

In comparison with the upper tusks of *Rhynchotherium shepardi* Leidy (1) the *R. rectidens* tusks are nearly straight in superior view, while those of *R. shepardi* are curved; (2) the enamel band in *R. rectidens* is much narrower than that in *R. shepardi*; (3) in external view the down-curving of the tusks in *R. rectidens* is much less than that in *R. shepardi*. The specific stage is simpler than the Lower Pliocene *R. euhypodon* Cope from the Republican River, Kansas.

**Rhynchotherium falconeri**, new species

Type, a lower jaw (Amer. Mus. Cope Coll. 8532) found at Mt. Blanco, Llano Estacado, Texas. Upper Pliocene. The type individual was of advanced years; the outer face of the left lower incisor is abraded

and no enamel is seen;  $M_2$  trilophodont,  $M_3$  tetralophodont, with external trefoils; jaws stout, lower beak sharply downcurved. Named in honor of Hugh Falconer who first recognized the generic distinctness of *Rhynchotherium*.

***Elephas washingtonii*, new species**

As the *type* of the species *Elephas washingtonii* we select a lower jaw (Amer. Mus. 8681a) containing two third inferior molars, with the ascending rami missing, from Pine Creek, Whitman County, Washington. The ridge formula in these two teeth is:  $M3_{21+}$ . The jaw has a depressed coronoid region as well as a long and shallow ramus, quite different in proportions from that of the true *E. jeffersonii* type.

This species is named in honor of President Washington, in contrast to the species previously named in honor of President Jefferson.

**CORRECTION AS TO PARATYPE OF *Elephas jeffersonii***

Related to this species may be a pair of upper and lower grinding teeth of both sides from Zanesville, Ohio (Amer. Mus. Warren Coll. 10457) acquired with the Warren Collection in 1906 and described by Warren in 1855 (p. 163, Pl. xxviii, fig. C) as *Elephas* "*Primigenius*." Osborn erroneously selected these teeth as the paratype of his species *Elephas jeffersonii* (Osborn, 1922. 555, p. 11); he counted the ridge-plates (*op. cit.*, p. 12) and figured this same specimen (*op. cit.*, pp. 13, 14) as *Elephas jeffersonii*, the ridge formula being  $M3_{24\frac{30}{12-26}}$ , with eighteen ridge-plates in use in both  $M^3$  and  $M_3$ ; superior molars show four to five ridge-plates in excess of the inferior molars. These grinders are relatively long, narrow, shallow, and outwardly curved.

Since the original description of *Elephas jeffersonii* was written the molars in the aged type specimen (Amer. Mus. 9950) have been cut out of the jaw of the skull and carefully sectioned; it has thus been found that they are relatively short and deep and present a different ridge formula, namely:  $M3_{20+}$ . There can be no question that the type of *E. jeffersonii* has a shorter jaw and shorter and deeper molar teeth than those of the erroneously associated paratype which may now be referred to *E. washingtonii*.