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The purpose of this application is to clarify the status of the type species of Taeniolabis Cope, 1882a (p. 604) by: (a) suppression under the plenary powers of the specific name of Taeniolabis sulcatus Cope, 1882a (p. 604), type species by original designation and an unused senior subjective synonym of Polymastodon taoensis Cope, 1882b (p. 684), and (b) designation of P. taoensis Cope, 1882 as the new type species of Taeniolabis.

2. The holotype of Taeniolabis sulcatus is a broken upper second incisor (American Museum of Natural History, Department of Paleontology number 3038). Cope (1884, p. 193) published a second name for this specimen, T. scalper, and referred to the specimen again in this way in a later publication (Cope, 1885, p. 493). T. scalper has been used as a senior synonym only one other time, in Trouessart’s listing of fossil mammalian taxa (1898, p. 1253). All subsequent references to this specimen cite T. sulcatus as a senior objective synonym of T. scalper.

3. Cope (1882b, p. 684) erected the genus Polymastodon Cope, 1882 based upon the type species Polymastodon taoensis Cope, 1882. The holotype of Polymastodon taoensis (diacritic mark omitted) consists of fragments of a skull including the right maxilla with first and second molars (American Museum of Natural History, Department of Paleontology number 3036). Incorrect spellings of the specific name include taoense (Abel, 1913, p. 703; 1914, p. 39; 1920, pl 417), tabensis (Tims, 1903, p. 142; 1905, p. 1784), and tööensis (Granger and Simpson, 1929, p. 619; typographical error).

4. Cope (1885, p. 493) suggested that Taeniolabis scalper might be synonymous with Polymastodon taoensis. This suggestion was based on recognition that both P. taoensis and T. scalper (= T. sulcatus) are restricted to the same stratigraphic unit within the San Juan Basin of New Mexico (the ‘Puerco Formation’ or lower part of the Nacimiento Formation, Cenozoic System), and that the holotype of T. scalper resembles quite closely many incisors referred to P. taoensis in size and morphology. Although Taeniolabis has publication priority over Polymastodon (the former published in July 1882 and the latter in August), Cope (1885) preferred to retain Polymastodon to refer to the genus. This retention was probably based on the superiority of the holotype of P. taoensis, comparisons with which had resulted in the establishment of additional species of Polymastodon. Polymastodon was subsequently cited as the preferred generic name in three review works (Roger, 1896, p. 6; Zittel, 1893, p. 85; Zittel, 1923, p. 432).
the senior name for this genus [the reference reads “... Taeniolabis ("Polymastodon")... ”], and were soon followed by similar references in Matthew (1928, pp. 949 and 951) and Matthew, Granger and Simpson (1928, p. 1). Granger and Simpson (1929, p. 603) discussed the question of priority. All subsequent workers have recognised Taeniolabis as a senior subjective synonym of Polymastodon.

5. The suggested synonymy (Cope, 1885) of the species Taeniolabis scalper and Polymastodon taoensis was accepted only in a single catalogue of mammalian taxa by Roger (1896, p. 6), who listed both T. sulcatus and T. scalper as junior synonyms of Polymastodon taoensis. Granger and Simpson (1929, p. 615) rejected this synonymy in what remains the primary reference for Taeniolabis, and recognised three species in the ‘Puerco Formation’ of the San Juan Basin, New Mexico: Taeniolabis sulcatus, Polymastodon taoensis, and Taeniolabis triserialis Granger and Simpson, 1929 (p. 619). Polymastodon taoensis and Taeniolabis triserialis were both diagnosed on the basis of molar tooth morphology, with incisors being non-diagnostic. As the holotype of T. sulcatus (a single upper second incisor) exhibited no diagnostic characters which could be used to distinguish it from the incisors of the other species, T. sulcatus 1882 was recognised as a nomen dubium. Granger and Simpson could not comfortably synonymise the taxon with either P. taoensis Cope, 1882 or T. triserialis because of the confluent distribution of these taxa, so T. sulcatus was retained as a separate species despite its nomen dubium status. Granger and Simpson (1929, p. 616) concluded that ‘It is probable that T. sulcatus is synonymous with T. taoensis, but here the latter better-known name may reasonably be retained... Until such time, therefore, as more abundant associated material makes it possible to determine the specific characters shown by the I\textsuperscript{2} [upper second incisor], it is proposed to apply the little-known name T. sulcatus only to the type.’ No specimens other than the holotype have ever been referred to T. sulcatus (or its junior objective synonym, T. scalper).

6. Within the last fifty years there have been two references citing Taeniolabis sulcatus as a valid name. Matthew (1937, p. 381) included a summary of Taeniolabis in his volume on the Paleocene faunas of the San Juan Basin, New Mexico, in which the holotype of T. sulcatus was described with the conclusion that ‘The type is regarded as specifically indeterminate’. Hahn and Hahn (1983, p. 294) included T. sulcatus in their Fossilium Catalogus review of the Multituberculata, with a footnote that ‘Es ist möglich, dass es sich um einen Incisiv von T. taoensis handelt, doch kann die Zugehörigkeit nicht gesichert werden.’ [It is possible that it is an incisor from T. taoensis, but membership cannot be assured].

7. Recent research concerning Taeniolabis has resulted in the conclusion that T. triserialis is a junior subjective synonym of Polymastodon taoensis (Simmons, in press). This synonymy means that there is only one diagnosable species of Taeniolabis known from the ‘Puerco Formation’ (= lower part of the Nacimiento Formation) of the San Juan Basin, New Mexico. T. sulcatus is considered synonymous with Polymastodon taoensis
based on general morphology and provenance of the holotype (Simmons, in press).

8. That *Taeniolabis* Cope, 1882 has priority over *Polymastodon* Cope, 1882 has previously been established. Similarly, *sulcatus* has priority over *taoensis*. Use of the specific name *sulcatus*, however, would upset the stability of the long-accepted name *taoensis* in its accustomed meaning through the introduction of an unused senior synonym. Although *T. sulcatus* has been used as a valid name twice in the immediately preceding fifty years, both of these citations questioned the specific identity of the taxon. In addition, *T. sulcatus* was already considered a ‘little-known name’ 57 years ago (Granger and Simpson, 1929, p. 616). Conversely, *Taeniolabis taoensis* has been used extensively in the literature of the past fifty years as the presumably valid name for the taxon (details of nineteen references have been given to the Commission Secretariat). Labelled illustrations of the skull and dentition of *T. taoensis* have also appeared along with discussion of the genus in several text books: Piveteau (1955, p. 33, Figure 14); Piveteau (1961, pp. 551–552, Figures 20–21); Scott (1962, pp. 86–88, Figures 57–59); and Gromova (1962, pp. 63–64, Figure 15). In the interest of nomenclatural stability, it is therefore proposed that the virtually unused senior synonym *sulcatus* be suppressed in favour of the specific name in general current usage, *taoensis*.

9. The suppression of *T. sulcatus* as type species of *Taeniolabis* Cope, 1882 requires designation of a new type species for the genus. Clearly, the appropriate type species for *Taeniolabis* is *Polymastodon taoensis* Cope, 1882, the holotype of which consists of skull fragments including the right maxilla with first and second molars (American Museum of Natural History, Department of Paleontology Number 3036).

10. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary powers:
   (a) to set aside all previous designations of the type species for the nominal genus *Taeniolabis* Cope, 1882, and to designate *Polymastodon taoensis* Cope, 1882 as the type species of that genus;
   (b) to suppress the specific name *sulcatus* Cope, 1882, as published in the binomen *Taeniolabis sulcatus*, for the purpose of the Principle of Priority but not for that of the Principle of Homonymy.

(2) to place on the Official List of Generic Names in Zoology the name *Taeniolabis* Cope, 1882 (gender: masculine), type species, by designation under the plenary powers in (1) (a) above, *Polymastodon taoensis* Cope, 1882;

(3) to place on the Official List of Specific Names in Zoology the name *taoensis* Cope, 1882, as published in the binomen *Polymastodon taoensis* Cope, 1882 (specific name of the type species of *Taeniolabis* Cope, 1882);
to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *sulcatus* Cope, 1882, as published in the binomen *Taeniolabis sulcatus*, and as suppressed under the plenary powers in (1) (b) above.

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