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THE MIDDLE TRIASSIC NEW GENUS PRAEPINACOCERAS (FAMILY PINACOCERATIDAE)

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Riassunto. Viene istituito il gen. n. *Praepinacoceras* con specie-tipo *Pinacoceras damesi* Mojsisovics, 1882, distribuito dall'Anisico superiore al Ladinico. Comprende specie con conchiglia involuta, compressa, liscia o con sottili coste o brevi, deboli pieghe radiali, o anche con una cresta mediana spirale. Sutura ammonitica con 2-4, raramente anche 6, lobi avventizi di L, con U₁ e U₂ molto grandi e numerosi elementi ausiliari, distinta da quella di *Pinacoceras* ed *Eupinacoceras* per una evidente relativa semplicità dei singoli elementi. Il genere *Praepinacoceras* per le caratteristiche morfologiche e la posizione stratigrafica sembra rappresentare il gruppo capostipite della Fam. *Pinacoceratidae*, diffusa nel Triassico medio e superiore.

Abstract. The new genus *Praepinacoceras* with *Pinacoceras damesi* Mojsisovics, 1882 as type species is here described. This genus is represented by Upper Anisian to Ladinian species, having an involute, compressed shell, smooth or with thin ribs, or weak short folds or also a median spiral ridge. The suture is ammonitic with 2-4, only occasionally 6 adventitious lobes of L, U₁ and U₂ very large, and numerous auxiliary elements. The suture differs from that of *Pinacoceras* and *Eupinacoceras* by its comparatively less frilled elements. The new genus, because of its stratigraphic range and its morphology is herein regarded as the ancestral form of the Fam. *Pinacoceratidae*.

The Family *Pinacoceratidae* Mojsisovics, 1879 includes Ammonoidea with involute, compressed shell, smooth or with weak ornaments and with an ammonitic suture which can reach a very high degree of specialization. The suture single elements are strongly denticulate and adventitious and auxiliary lobes are also present.

The type genus *Pinacoceras* was established by Mojsisovics in 1873 for a complex group of species now attributed to various genera. Among those the genera *Pompe-*

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ckjites Mojsisovics, 1902 and *Pinacoceras* s. str. are still belonging to the Family *Pinacoceratidae* together with the genera *Eupinacoceras* Spath, 1951 and *Pinacoplacites* Diener, 1916.

Discussion.

The genus *Pinacoceras* (type species *Ammonites metternichi* Hauer, 1846) today includes species with involute, strongly compressed and smooth shell possessing an acute venter and highly specialized sutures. The saddles and lobes are not only very frilled, but also the single elements of the suture are further subdivided, 1) with several adventitious lobes of L, 2) with two umbilical lobes (U_1 and U_2) so large that their sizes are even greater than the L size, and 3) U_1 and U_2 are followed by tens of lobes rapidly decreasing in size (Fig. 1a).

The genus *Pompeckjites* is characterized by the presence of ventral ornaments and a change in growth pattern of the last whorl. The genus *Pinacoplacites* possess a round venter as in *Placites* Mojsisovics, 1896 but with a larger umbilicus and a suture with adventitious lobes in L similar to those of *Pinacoceras*.

Finally, the genus *Eupinacoceras* (= *Parapinacoceras* Arthaber, 1928, non Diener, 1916) with *P. subimperator* Mojsisovics, 1873 as type species, is less involute than *Pinacoceras* and possess a simpler suture for what concerns the single elements, but similar subdivision of L and U as in *Pinacoceras* (Fig. 1b). The interpretation of *Eupinacoceras*, however, is controversial because, as Spath (1951, p. 166) said, "the figure published by Arthaber (1928, p. 162, pl. 20) shows a restored, bicrenate venter which is considered a special feature of *P. subimperator*. The preservation of these very slender, evolute forms, unfortunately, is always defective, and it remains to be seen whether *Eupinacoceras* will have to be restricted to only one species among the evolute forms of *Pinacoceras*". Up till now, in fact, the genus *Eupinacoceras* is considered monotypic. Gemmellaro (1904, p. 286) in the description of his new species *P. suessi* from the Carnian of the Palermo Province, writes that "Il suo lato esterno è sottile ed acuto; sopra quello dei suoi modelli interni la conchiglia s'innalza a guisa di alta carena come avviene nel *Pinacoceras imperator* (Hauer). La carena risulta dall'unione delle due lamine laterali della conchiglia, che addossate l'una sull'altra si elevano sopra il suo sottile contorno ventrale". This description explains why a double keel can be observed in the poorly preserved specimens but does not exist in the internal moulds. The suture of *P. suessi* appears also very similar to that of *P. imperator* and *P. subimperator*, although overall it is more convex adorally (Fig. 1c). Consequently, the species *P. suessi* and *P. imperator* (Spath, 1951, p. 166) should also be attributed to the genus *Eupinacoceras*.

According to Tozer (1981), the distribution of all the genera mentioned above is restricted to the Middle and Upper Triassic, and, in particular, *Pinacoceras* to the Car-

nian and Norian, *Pompeckjites* to the Ladinian and Carnian, *Pinacoplacites* to the Upper Triassic, and *Eupinacoceras* to the Norian. The distribution of the latter genus, however, should be extended to the Carnian if the species *P. suessi* is included as suggested above.

The Middle Triassic ammonoid fauna includes also a group of species characterized by a shell not strictly involute, strongly compressed with slender venter and a

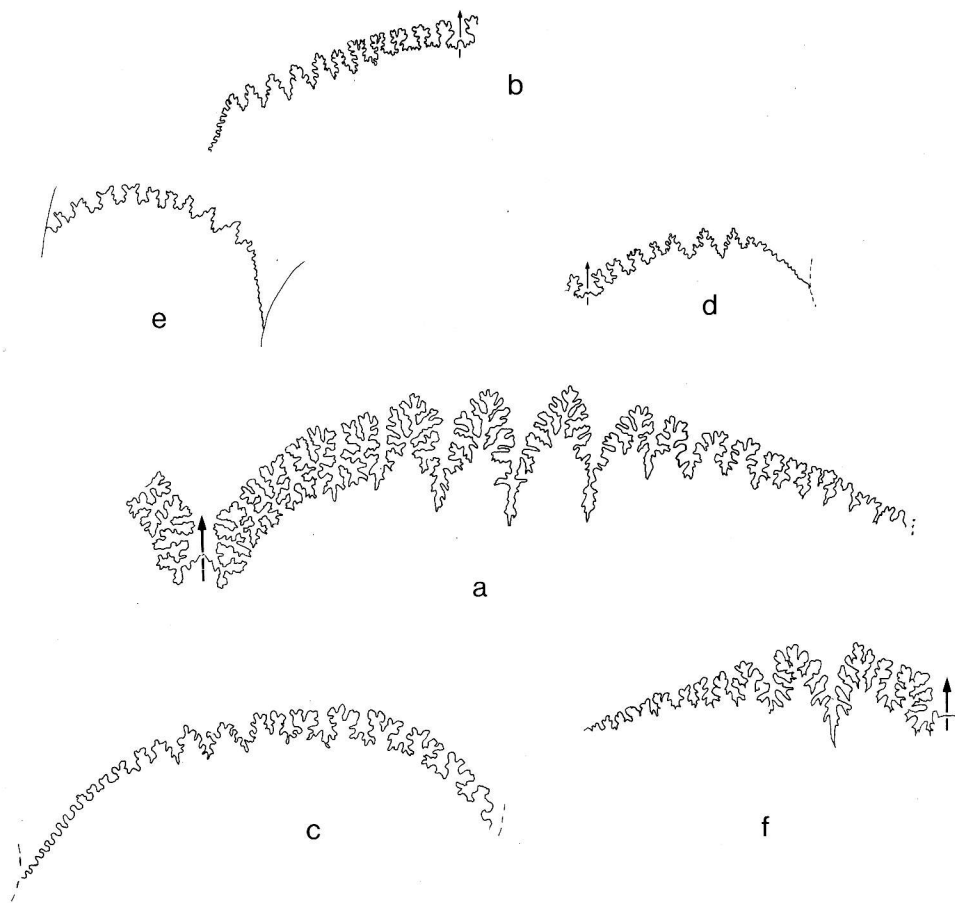


Fig. 1 - Adult suture lines of the Fam. *Pinacoceratidae*: a) *Pinacoceras metternichi* (Hauer) suture. From Shevyrev, 1986. b) *Eupinacoceras subimperator* (Mojsisovics) suture. From Mojsisovics, 1902. c) *Eupinacoceras suessi* (Gemmellaro) suture. From Gemmellaro, 1904. d) *Praepinacoceras damesi* Mojsisovics, 1882. e) *Praepinacoceras dalpiazii* (De Toni) suture. From De Toni, 1914. f) *Parapinacoceras aspidoides* (Diener) suture. From Diener, 1900.

suture very similar overall to that of *Pinacoceras* (presence of adventitious lobes of L, shape and size of U₁ and U₂), whereas the single elements of the suture are closer to those of *Eupinacoceras* (Fig. 1d, 1e). This suture is peculiar in the sense that is strongly convex adorally (not only L or only U and I); adventitious lobes of L may vary in number from 2 to 4 and only occasionally up to 6. Moreover, the saddles are simple, wide at the base contrasting as a consequence the lobes to a small size. The lobes are simple, never bifid as in *Pinacoceras* and *Eupinacoceras*. Analogously L, U₁ and U₂ and the intercalated saddles are less deeply frilled, although they maintain the same size-ratio with the very large U₁.

These characters are well visible in *P. damesi* Mojsisovics (1882, p. 195, pl. 52, fig. 9) from the Upper Anisian (Fig. 1d) as well as in *P. stoppanii* Airaghi, 1902 and *P. dalpiazzi* De Toni, 1914 from the Ladinian (Fig. 1e). In the past, all these species have been attributed to the genus *Parapinacoceras* Diener, 1916 (type species *P. aspidoides* Diener, 1900). The suture of the latter genus, however, much less rich in elements with only one adventitious lobe (Fig. 1f), is very similar to that characterizing the Family *Gymnitidae*, then the Diener's genus is correctly attributable to the latter family (Tozer, 1981; Shevyrev, 1986).

The species mentioned above together with *Pinacoceras* nov. f. indet. ex aff. *P. damesi* and *P. nov. f. indet.* (Mojsisovics, 1882), *P. aff. damesi* (De Lorenzo, 1896), *P. aff. damesi* (Tommasi, 1899), *P. philopater* (non Hauer) (Airaghi, 1902), all from the Ladinian, could represent the ancestral forms of *Pinacoceras* and *Eupinacoceras*, which both appear in the Carnian. We propose to group them in a single new genus, here named *Praepinacoceras* with *Pinacoceras damesi* Mojsisovics, 1882 as type species. The species *damesi* in the best characterizing this new taxon, because the available material consists of specimens of the largest size ever described in this group (maximum diameter 80 mm). Thus, we can assume that the rather simple nature of the suture is not related to a primitive ontogenetic stage but truly represents a phylogenetic feature.

Diagnosis. Shell moderately involute, strongly compressed, with shallow umbilicus and very slender, rounded to acute venter, smooth or with very weak ornaments like thin costae, short radial folds, and weak spiral lateral ridge. Suture ammonitic, adapically convex, with 2 to 4, occasionally 6, small adventitious lobes of L with simple saddles; L wide, triangular as U₁ and U₂; numerous, small and poorly defined auxiliary elements.

Type species: *Pinacoceras damesi* Mojsisovics, 1882, p. 195, pl. 52, fig. 9.

Distribution. Upper Anisian-Ladinian.

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