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FOSSILS AND THE DISTRIBUTION OF CHELYID TURTLES

2. Additional Reputed Chelyid Turtles on Northern Continents:

Palaeaspis conybearii (Owen) — a Pelomedusid.

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In the previous paper of this series a re-examination of the description of "*Testudo*" *leithii* Carter from the Eocene of India demonstrated that this fossil, so long considered a chelyid, belongs instead to the related but quite different family Pelomedusidae.

The family Chelyidae of side-necked turtles (Pleurodira) is at present restricted to South America east of the Andes, and to the Australian region. The Indian fossil was one of several forms which were thought to complete the discontinuous distribution of the family by showing its former presence outside the Recent range of the family. The present paper discusses another of these forms. I am deliberately including every case known to me which has been seriously proposed since the modern conception of the Chelyidae arose.

In 1870 the genus *Palaeaspis* was proposed by Gray for *Emys conybearii* Owen, a fossil turtle from the London Clay Eocene. This generic name has been ignored by all subsequent authors. Gray placed his new genus in the Chelyidae next to the genus *Hydromedusa* with the following generic definition: "Shell depressed; nuchal shield large and quadrangular, included within the anterior marginal shield. First vertebral shield very small, oblong and transverse, at hinder base of nuchal; second and third vertebral hexangular, as long as broad. Sternum broad, truncated in front and notched behind, transversely concave in the middle and bent up at the ends."

Examination of the type specimen of *Emys conybearii* Owen (B.M.N.H. 39449) at the British Museum reveals that Gray's interpre-

tation of the dorsal shields is a perfectly possible one (Fig. 1). The first shield behind the first marginals, which meet in the mid-line, is divided transversely and on the analogy of *Hydromedusa* could be interpreted as a nuchal succeeded by a small first vertebral. This

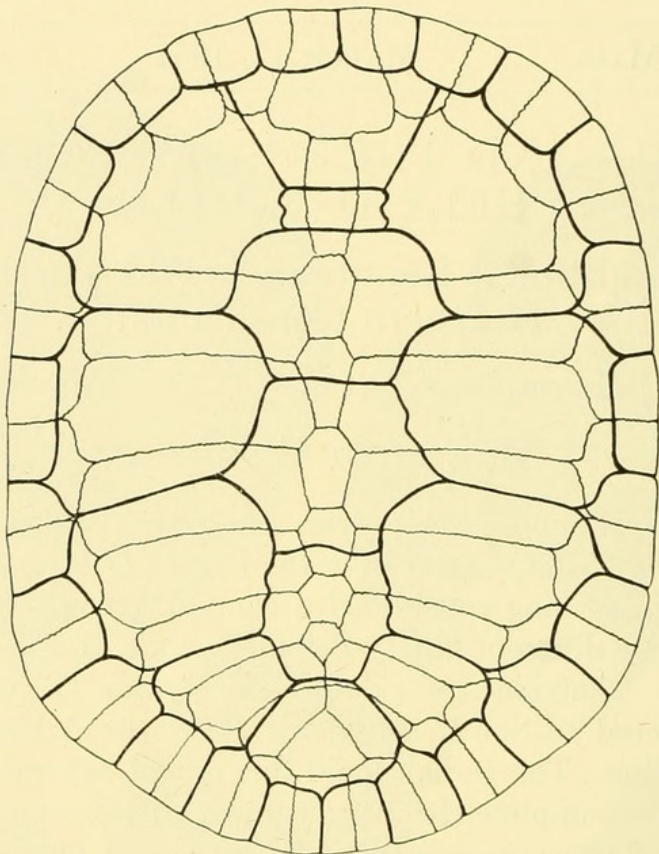


Fig. 1. *Emys conybearii* Owen. Dorsal view of type shell (after Owen). 1/6 natural size.

transverse division of the first median shield has been ignored in later references to *Emys conybearii*, although it was mentioned and discussed by Owen in the original description and was clearly shown by him in his plate XXVIII A, which is a much restored but essentially accurate representation of the specimen.

E. conybearii Owen was synonymized by Lydekker and Boulenger (1887) with the earlier named *Emys delabechei* Bell, probably justly, but the latter name was based upon an imperfect shell which does not show the region which is critical in *E. conybearii*. With the example of *Hydromedusa* in mind, it is not possible without further evidence to dismiss the condition shown in *E. conybearii* as an individual variation. Further, since the bony areas under the first vertebral are

unusually elongate (as in chelyids and *Pelusios*), the first neural especially being very elongate, there is greater probability of an unusual condition of the horny scutes. *Palaeaspis* is probably a valid genus.

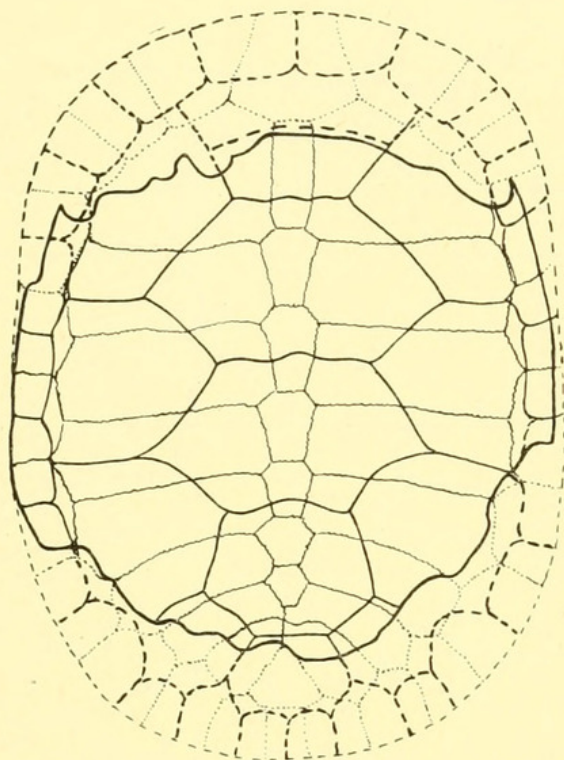


Fig. 2. *Emys laevis* Bell. Dorsal view of type shell (after Owen and Bell, reconstructed). 1/3 natural size.

Fortunately, as Lydekker and Boulenger were able to state, further preparation of the type of *E. conybearii* after Owen's description of it revealed the presence of small lateral mesoplastral bones as in *Podocnemis* and *Pelomedusa*. The existence of these bones I have been able to verify on the type specimen. The form is therefore a pelomedusid, not a chelyid.

The case of *Palaeaspis* is instructive. On the characters of the dorsal shell it was entirely plausible for Gray to place this form as a chelyid. The only other known example of a transversely divided first vertebral¹ occurs in a chelyid genus. The elongation of the first vertebral and of that region of the bony shell is rather characteristically chelyid (though occurring also in *Pelusios*). If it were not for

¹ I prefer to interpret the situation in both *Hydromedusa* and *Palaeaspis* in this rather than in the conventional fashion.

the later discovered typically pelomedusine mesoplastra, this genus would still be regarded as chelyid and thus would, it seems likely, be used as such in zoogeographical speculation. *Palaeaspis* may thus serve as a special caution against the use of imperfect fossils as critical zoogeographical data.

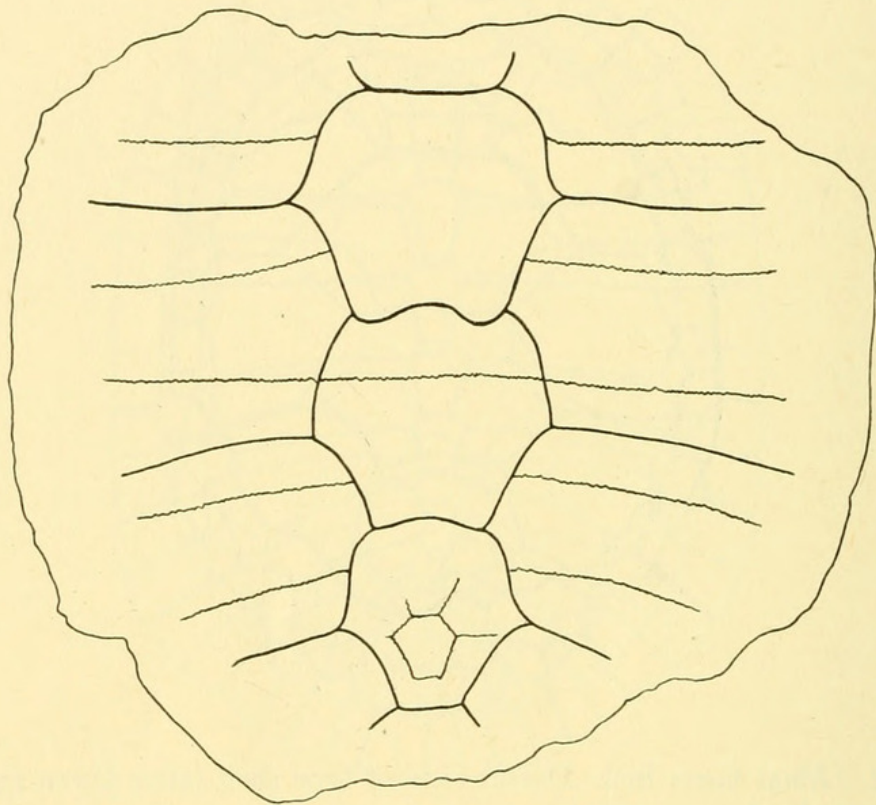


Fig. 3. *Emys delabechei* Bell. Dorsal view of type shell (after Owen and Bell). 1/5 natural size.

Comparison of the types of *Emys conybearii* Owen, *Emys laevis* Bell (B.M.N.H. 37209) (Fig. 2), *Emys delabechei* Bell (Geological Survey of Great Britain No. 6634) (Fig. 3), and a comparison of these with the figure of *Platemys bowerbanki* Owen (Fig. 4) (the type of which appears to be lost) leads to the belief that all the pelomedusids of the London Clay are synonymous. *Emys laevis* has already been synonymized by Lydekker and Boulenger with *Platemys bowerbanki* under the name *Podocnemis bowerbanki*. They have also synonymized, as already mentioned, *Emys conybearii* with *Emys delabechei*, again as a species of *Podocnemis*. Only the type of *Emys conybearii* approaches completeness, but all four specimens, though differing in size, are

congruent in every other determinable aspect, and unfortunately in none of them do we know the gular-intergular pattern so important in pelomedusine taxonomy. *Emys laevis* in which a portion of the first neural is present shows that the latter is as strikingly elongate as in

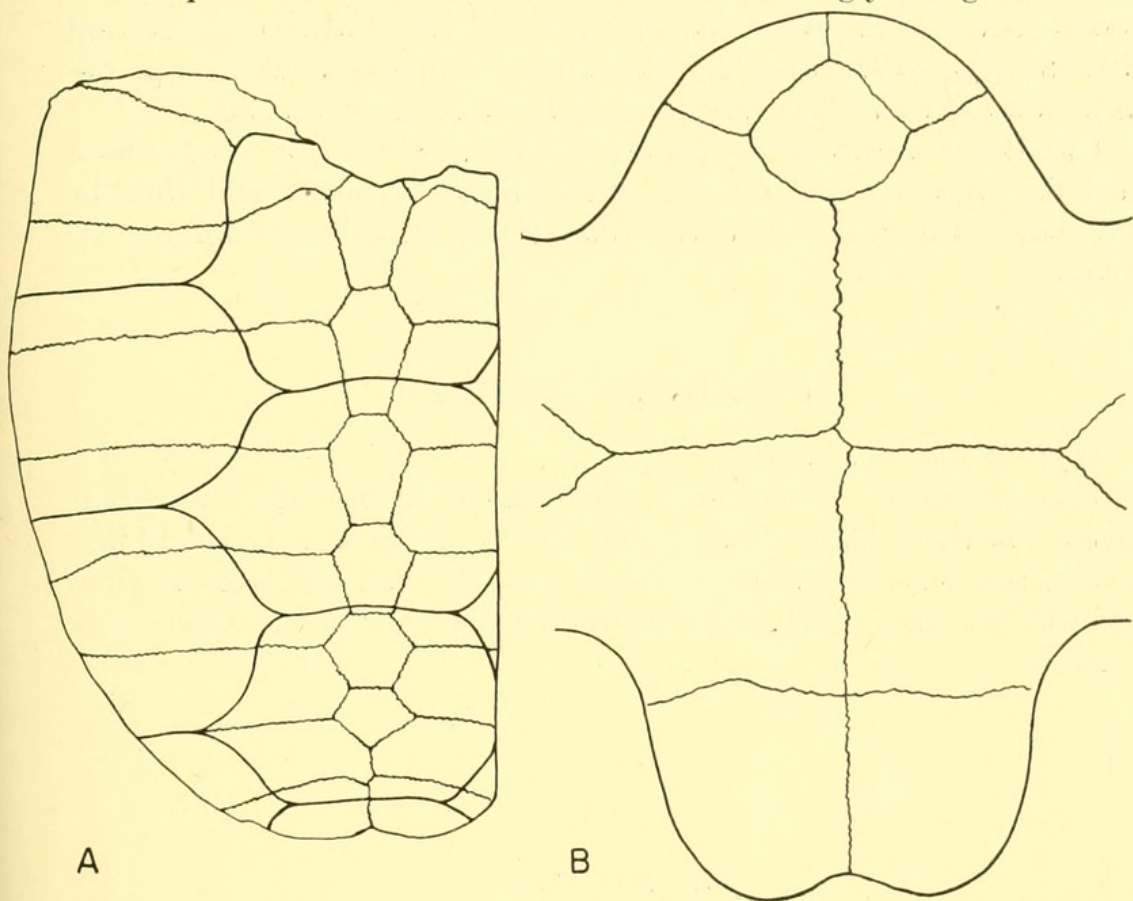


Fig. 4. *Platemyx bowerbanki* Owen. A. Dorsal view of type shell. B. Ventral view of type shell. (Both after Owen and Bell.) 1/4 natural size.

Emys conybearii. While *Emys laevis* does not exhibit the transversely divided first vertebral of *Emys conybearii*, the transverse sulcus may in this smaller and younger specimen have been placed more anteriorly, on that portion of the first neural which is not preserved (see Fig. 2). Alternatively, the transverse division of the first vertebral in the type of *P. conybearii* may be an abnormality.

Assuming that the four types of Owen and Bell represent a single form, there is still one further complication. Gray in 1870 in a single publication proposed three distinct generic names for three of the four forms here regarded as synonymous: *Palemys* with the type *Emys laevis* Bell (p. 51); *Palaeochelys* with the type *Platemyx bowerbanki* (p. 64); and *Palaeaspis* with the type *Emys conybearii* (p. 73).

Palaeochelys Gray 1870 is preoccupied by *Palaeochelys* H. v. Meyer 1847, but the other two names appear to be available. Since neither name has any sanction deriving from usage — both having been universally ignored since their erection — I choose *Palaeaspis* as the generic name of the pelomedusine of the London Clay, on the ground that the type species on which this name is founded has as its type the most complete and best specimen of the four here discussed.

The oldest specific name for any of the group is *bowerbanki* Owen and the correct name for the single species involved will then be *Palaeaspis bowerbanki* (Owen). The genus may be rediagnosed as follows:

PALAEASPIS Gray 1870

Type. *Emys conybearii* Owen.

New diagnosis. A flattened pelomedusid resembling *Podocnemis expansa* in shell characters and adult size but without a vertebral keel and with a very elongate first neural (*ca.* $2\frac{1}{2}$ times as long as wide) and with the first vertebral divided transversely to form two successive scutes.

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