

ANNALS
OF THE
QUEENSLAND MUSEUM.

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THE EXTINCT FRESH-WATER TURTLES OF QUEENSLAND.

A preliminary notice of these reptiles under the title of "The Lesser Chelonians of the Nototherian Drifts," was submitted by the writer to the Royal Society of Queensland at its meeting on the 22nd September, 1894, and published by the Society in vol. 10 (pp. 123-127) of its Proceedings. In that paper attention was drawn to the presence in the Darling Downs deposits of abundant fragments of turtle shells, indicating apparently the past existence of more than one species, and to the inclusion among them of traces of a Mud-turtle, for which the name *Trionyx australiensis* was proposed. A hope was at the same time expressed that a study of these commingled shards of former life might yield us some idea, however vague and imperfect, of the characteristics of the reptiles of which they were once constituents. After a long series of delays caused by untoward circumstances, chief among them being scanty leisure for work of the kind, an opportunity of renewing the subject occurs and use is made of it.

The bulk of the fragments is found to consist of the relics of a few species belonging to the genera *Chelymys* and *Chelodina*, the Chelonian forms still prevalent in our inland waters; one species which is numerous is foreign to any genus known to the writer.

The remnants can, with sufficient confidence, be referred to the several species discriminated by their means, but a reproduction of the form of the carapaces and plastrons, which has in some instances been attempted by reducing fragments of various size to common proportions and placing them as nearly as possible in their proper positions, is, of course, very liable to error.

I have to thank my friend, Mr. R. Etheridge, for the opportunity of identifying the fossils mentioned as occurring at the Warburton River.

The following species are recognisable:—

FAM. CHELYDIDÆ.

Gen. Chelymys.

CHELYMYS UBERRIMA, n.s.—It is from this species that by far the greater number of the remains before us have been derived. Its generic identity is indicated by the presence of the superficial markings familiar to us in the living species of *Chelymys*, by the impressions of nuchal and interjugal shields, and by the sides of the pygal plate being quite uncovered by the last costal shields. The species is distinguished by the peculiar feebleness of its markings, by the general form and proportions of its parts, and by its comparative size. It is founded primarily on the only example of some few plates in their natural connection, which have occurred among the whole of the turtle remains, to show the precise form of the part whence they came: in this case the anterior region of the carapace (Plate 1, Fig. A). The second and third peripheral plates are extended outwards to a greater degree than in the living species; the peripheral surfaces become more

convex and the edges thicker as they recede, producing an obvious contrast with the opposite conditions in the recent *Chelymys*. The first vertebral shield is narrower in proportion to its length, its hinder edge is straighter, and its form different in other respects. The surface pattern beneath the marginal shields is much as in *C. macquaria*, a plexus of fine branching and interosculating lines, but beneath the costal and vertebral shields the longitudinal markings are delicate raised lines or fine striae, frequently imperceptible in certain lights, but almost always sufficiently in evidence for determinative purposes. The centre of the space beneath the first vertebral shield is convex, but from this convexity caudad the surface subsides into a broad shallow depression. The rest of the plates entering into the composition of the carapace as restored being shown in position on Plate I, it is unnecessary to describe them separately. Assuming the figure to be moderately true to nature, the carapace in this species had the form of a short oblong, a little contracted anteriorly, with lateral margins which are broad, convex, and nonrevolute as far as the ninth peripheral, then increasing slowly in breadth and becoming a little concave on the upper surface as far as the uropygial plate which is gently convex in the centre. The arch of the carapace seems to have been moderately elevated; its crown a little depressed in the course of the vertebral line. The constituent species of the plastron (Plate II.) have been recognised by the similarity of their surface markings with those of the peripheral plates of the carapace, and the identification has been confirmed by the fact that the fragments of the two present themselves in a similar numerical superiority over all others. The average size of the species at maturity was, in linear measurement, about twice that of *C. macquaria*. *Loc.*: Darling Downs, passim.

CHELYMYS ANTIQUA, n.s.—A species of so infrequent occurrence that it is represented by four fragments only, a lophial and first pleural from young individuals, a first and one of the hinder pleurals from older carapaces. The hinder half of the lophial (Plate III., Fig. A) is strongly elevated, its lateral angles depressed. The nuchal shield is oblong, with diameters 8:6.5; it is much shorter than the adjacent marginals, yet protrudes a little beyond them, consequently the front edge of the first vertebral in contact with it is thrust forward between the first marginals to a much greater extent than in the recent species. The anterior edge of the first marginal slopes caudad, not, as in *C. macquaria*, cephalad. The convex portion of the plate is rather obscurely ribbed with longitudinal raised lines, the remainder of it bears only a few very irregular and almost obsolete ridges. The first pleural plate (Plate III., Fig. B) shows on its surface the groove between the first vertebral and first costal shields and parts of those bounding the second marginal and second vertebral; the first of these shows that the first vertebral shield in this species had a straight lateral edge and a sharp posterior angle, and that the angularity of the edge of the second marginal was much greater than in *C. macquaria*. The surface markings on this plate differ from those of the living species only in being more delicate. A portion of a similar plate from an apparently mature individual (Plate III., Fig. C) has the same straight groove as the preceding and superficial lineations no coarser than in it. An abraded fragment from the upper (vertebral shield) end of one of the

posterior pleural plates (Plate III., Fig. D) has longitudinal lines of like character. So far as we can learn from these examples of the species it seems to have been about equal in size with *Chelodina oblonga*. Loc.: Darling Downs.

CHELYMYS ARATA, n.s.—This species, which is well distinguished by the coarse ridge-and-furrow-like sculpture of its carapace, and the transverse direction of the ridges beneath the hinder part of the first vertebral shield, is almost as infrequent as the preceding. It is exemplified by three pleural and one pygal plate from the Darling Downs, and by two pleural plates from the Warburton River. The pleural plate, probably the fourth of the left side, figured on Plate IV., Fig. B, shows the characteristic sculpture almost in its pristine strength; the rounded ridges equal to or greater than the deep furrows in breadth are seldom continuous, generally interrupted or by interosculation form loops and branches; those on the upper or vertebral portion ascending obliquely, those beneath the costal shields descending. The younger bone, the fifth pleural plate apparently of the same side (Plate IV., Fig. C) has the same style of ornamental ribbing, but as in the subject of Fig. D, a still younger plate from the opposite side, the ribs on the part beneath the hinder portion of the vertebral shield are broken up into irregular tubercles not clearly marked in the drawing. The first pleural, one of the two Warburton River fossils, figured on the same Plate IV., Fig. A, shows that on the hinder portion of the first vertebral shield the ridges, formed probably by coalescence of the tubercles above mentioned, took a transverse direct direction, those on the costal part of the plate a strongly oblique direction upwards. To this species is referred the broadly pentagonal, radiately furrowed pygal plate represented by Fig. E, Plate IV. It is evidently from a *Chelymys*, and more probably from this species than any other pygal in the collection. The second pleural from the Warburton River (Fig. F, Plate IV.) is a fragment of the fourth of the left side much abraded. In size *C. arata* appears not to have been larger than the recent *C. macquaria*.

Gen. Chelodina.

CHELODINA INSCULPTA, n.s.—A species which is at present distinguished chiefly by the extreme degree to which the typical sculpture of the genus is developed by it. The inner surface of the first pleural (Plate V., Fig. A) shows that the curved pier sent up by the brachiosternal for the support of the carapace extended inwards towards the vertebræ as far as it does in *C. oblonga*, but was more forward in position, and further, that the convex surface for the reception of the pier was continuous with that of the process for the attachment of the vertebral centra, which is not the case in *C. oblonga*; but the position of the pier, and consequently the longitudinal extent of the anterior opening of the test, appears to have been liable to considerable variation, for in the subject of Plate V., Fig. B, a second pleural of the same side, with attachment to the succeeding vertebræ, the pier was inserted on the posterior side of the second rib instead of that of the first. The specific character of the surface graving apparent in its peculiar strength and regularity is well seen in this example. On the vertebral portion of the plate each edge presents a row of long folds or bars while the middle is covered

with a broad band of scale-like folds, which on the costal portion is divided into two by an intercostal groove; the pattern produced on either side of the groove reminds one of a moiety of the skin from the belly of a snake with ventral scutes. Of a third pleural plate a portion is represented by Fig. B, Plate V. This plate being entirely covered by the overlying costal shield, of course, bears upon it no dermal groove. The nearly entire fourth pleural (Plate V., Fig. C) shows in a well-preserved state a slight modification of the surface pattern; the band of scales on either side the groove is wider, and the lateral bands of bar-like folds narrower than in the other fragments referred to the species. At the distal end the sculpture takes the character of long ascending tongues; these are seen again on the distal end of a sixth pleural (Plate V., Fig. D.) The finely-preserved ninth peripheral plate of Plate V., Fig. G, illustrates the pronounced character of the sculpture in this part of the carapace; above the submarginal groove it ascends in bold flame-like tongues, below it reproduces the general pattern of the pleural plates. On peripheral plates that have suffered much from abrasion of the surface the flame-like elevations are reduced to long pointed bract-like etchings. It is with some confidence that the pygal plate seen on Plate V., Fig. H, is thought to pertain to the present turtle, as there are on its distal margin distinct indications, not clearly marked by the artist, of the elongated ridges borne by the distal ends of the pleural plates. In a fragment of a similar plate from the Warburton River all the superficial tubercles are more elongate in form than the generality of those on the entire plate figured. On Plate V. an attempt has been made to reproduce the form of this carapace as nearly as the paucity of material allows, but it must be confessed that all that can be positively said of it is that its lateral edges were moderately broad and revolute (cf. Plate VI., Fig. C.) In addition to the fragments of carapace figured, sixteen others from the Darling Downs and seven from the Warburton River affirm the validity of the species, but do not greatly add to knowledge of it. *Plastron*: In the living species of *Chelodina*, the sutures between the posterior divisions of the plastron pass each through a band of elongate etchings as in contiguous pleural plates. By virtue of this as an almost generic condition and an unusually strong development of superficial graving as a specific, we may reasonably attribute to the plastron of *C. insculpta* the naturally associated mero- and sacro-sternal given on Plate VI. The two other plates included in the conjectural restoration of the plastron on Plate VI. are all the remains of this region of the test which have as yet been met with. *Loc.*: Darling Downs; Eight-mile Plains, near Brisbane; Warburton River.

PELOCOMASTES* (gen. nov.)—Test smooth; no nuchal shield; dermal grooves coarse and irregular; plastron short, broad, depressed; interjugal shields transversely divided, its anterior division marginal; sacro-sternal notch moderate.

PELOCOMASTES AMPLA, n.s.—Remains of the test of this species are easily recognised by the absence of any, or at least of any definite, kind of ornamentation on their surfaces and by the peculiar uncouthness of their broad deep grooves, which run in curved, often rugged, lines and meet in rounded angles.

* Mud-reveller.

Carapace:—An imperfect lophial plate with part of a first peripheral, not figured, is unfortunately not of sufficient extent to show conclusively either the presence or the absence of a nuchal shield, but as the latter seems to be the more probable, it is assumed to be the case in the representation of the fore part of the carapace given on Plate VII. The surface of the anterior peripherals figured shows no system of marking whatever, though something of the kind has been introduced in Fig. A of Plate VII., but in a first right peripheral not figured the surface is obscurely diversified by shallow groovings which here and there form angular loops; like many other fragments of the test of this species, the present one has a glazed semiporcellaneous appearance. In a first left peripheral from a young animal the surface is shallowly but plainly impressed with loop-like groovings. Probably in still younger stages of growth these markings were yet more distinct and general. One of the lateral peripheral plates of the same side, probably the eighth, is rendered half natural size in Fig. D, Plate VII.; its dimensions show that for a fresh-water turtle the species attained to a large size, and the thickness of the plate (30mm. at its anterior edge) indicates that the test was unusually strong. The first pleural of the left side (Plate VII., Fig. C), viewed on its inner aspect, has the vertebral process and the convexity for the reception of the brachioisternal pier forming an uninterrupted curved ridge which separates a deep and continuous fossa behind it from the more level surface in front. *Plastron*: Plate VII., Fig. B, is a half-sized figure of the left brachioisternal minus its ascending pier; it shows a flat plastron passing with a very low arch into the carapace. The surface of this plastron is entirely devoid of ornamental markings. The subject of Fig. B, Plate VIII., indicates a breadth of 290mm. for the whole plastron, but as its thickness is less than half that of the subject of Fig. C, we may fairly estimate the full breadth of this turtle at two English feet. The number of the pieces of plastron and carapace derived from this turtle exceeds that left by any of its contemporaries except *Chelodina uberrima*. *Loc.*: Darling Downs.

Besides the turtles which have left sufficient remains for their specific determination, others were certainly in existence: There is, for example, in evidence a pleural plate ornamented after the manner of a *Trionyx*, but having the rib entirely sunk beneath the inner surface. There is, again, a pygal plate with a very peculiar rippling style of ornament; but isolated traces such as these it is useless to describe further since their utmost value to history can only be for the present *gen. et sp. ind.*

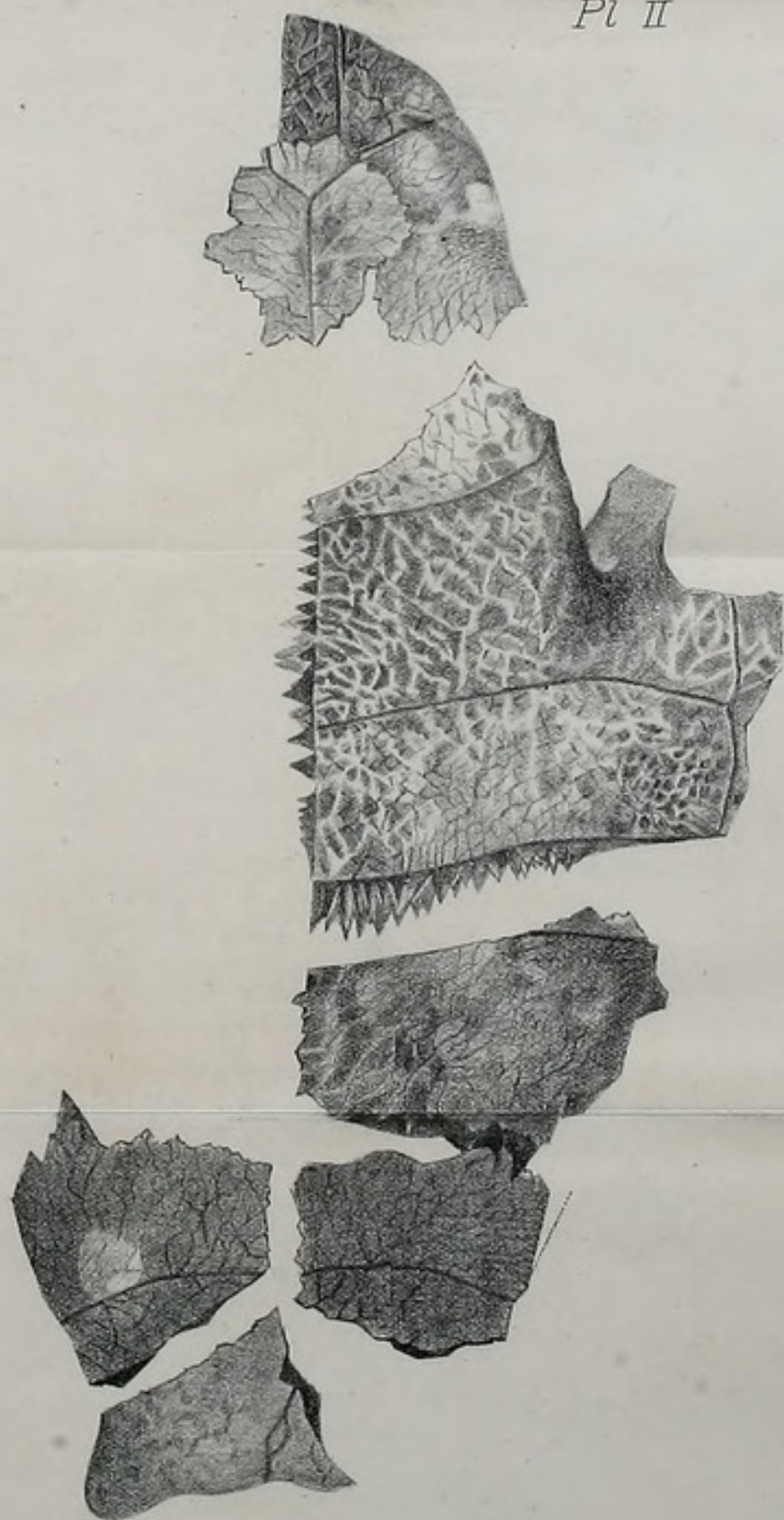
It may be observed that the large amount of material examined for the purposes of these notes has not supplied any ground for suspecting that any existing species was coeval with the forms now disclosed from the Darling Downs. The Chelonian division of the fauna accords with the others in declaring that since its remains were buried a total change has swept over the vertebral life of Australia.

C. W. DE VIS,
Curator.

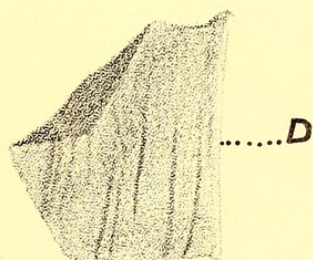
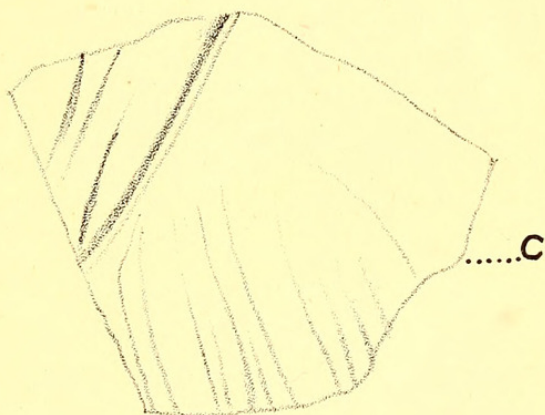
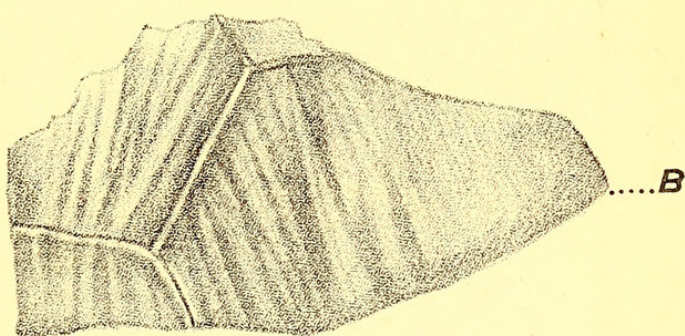
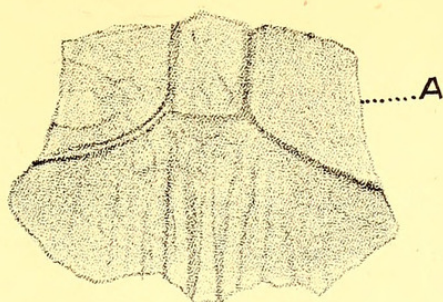
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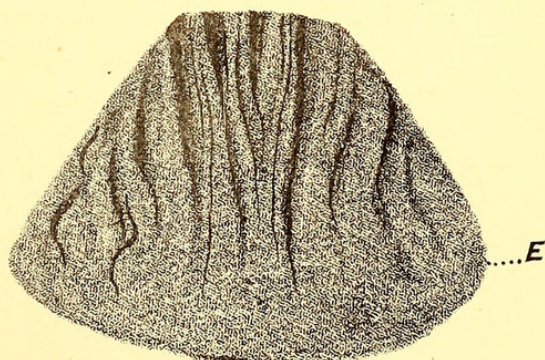
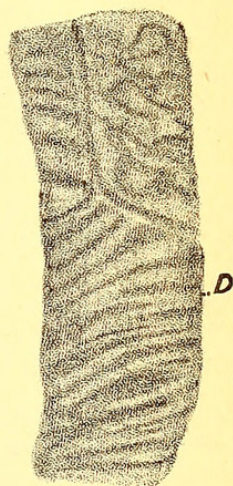
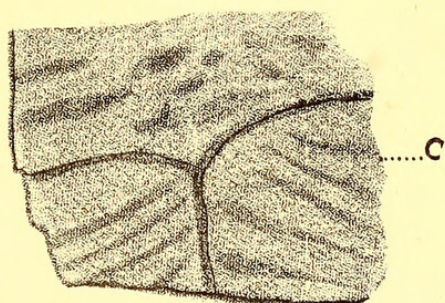
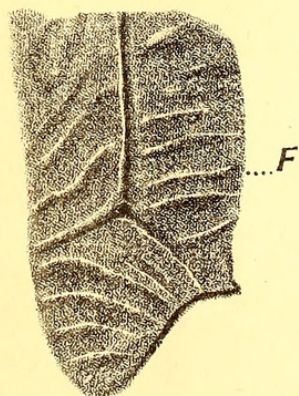
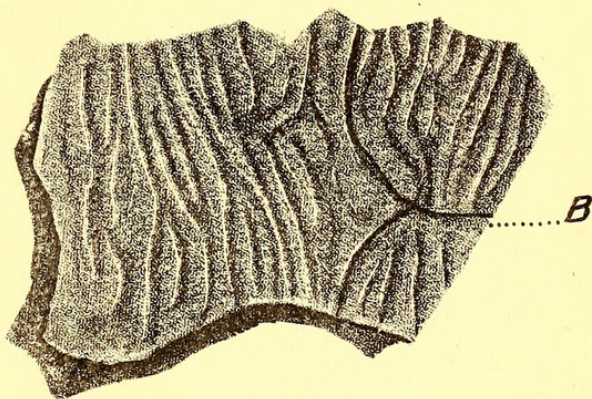
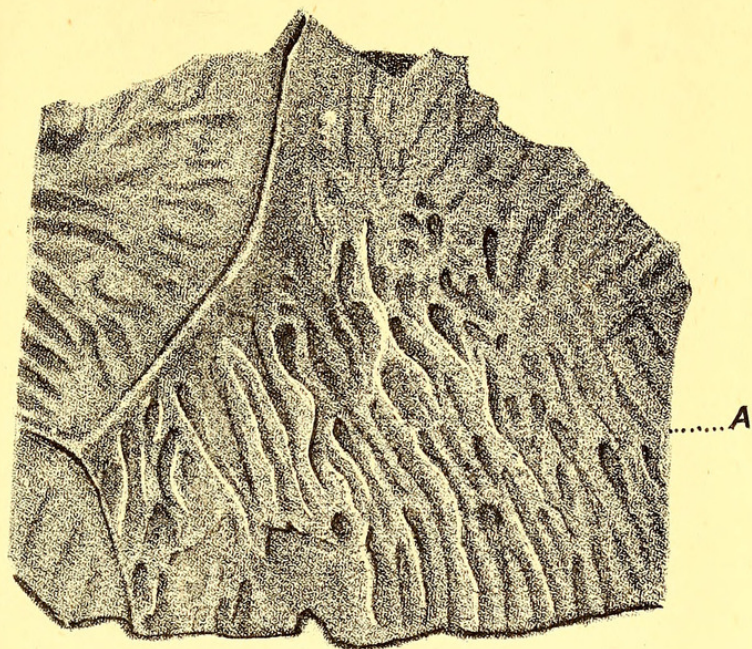
CHELYMYS UBERRIMA
CARAPACE



CHELYMYS UBERRIMA
PLASTRON

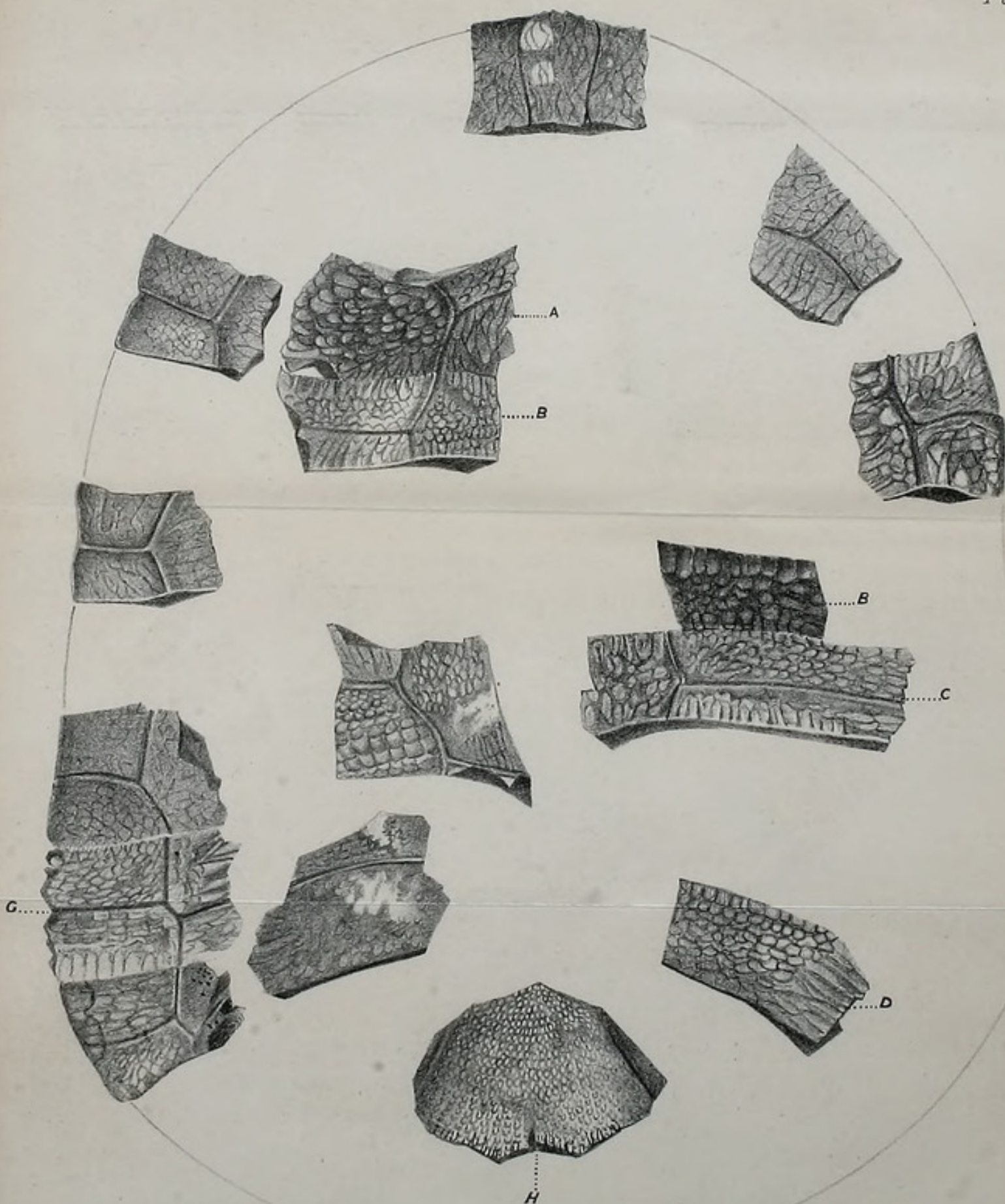


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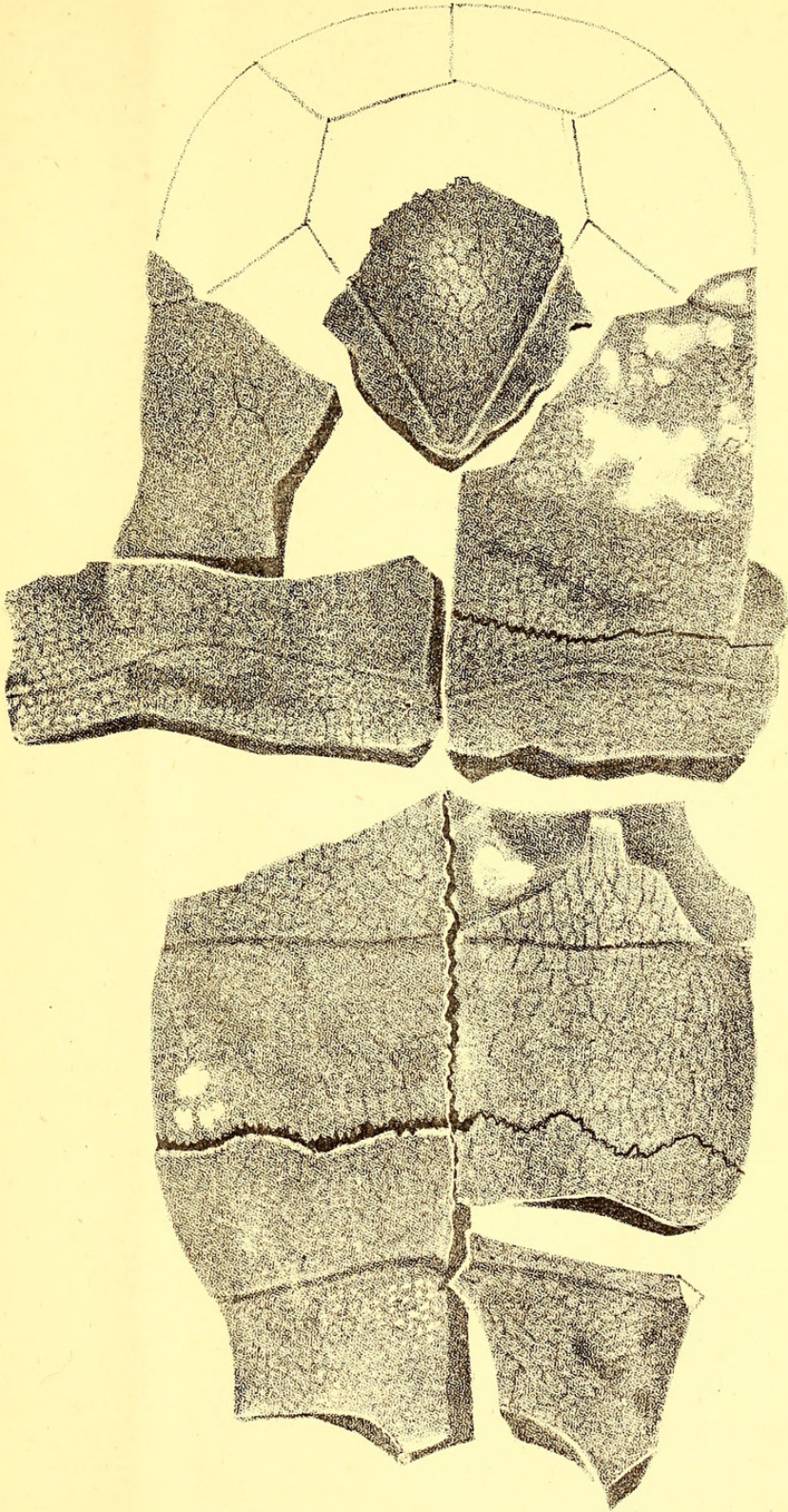


CHELYMYS ARATA

Carapace

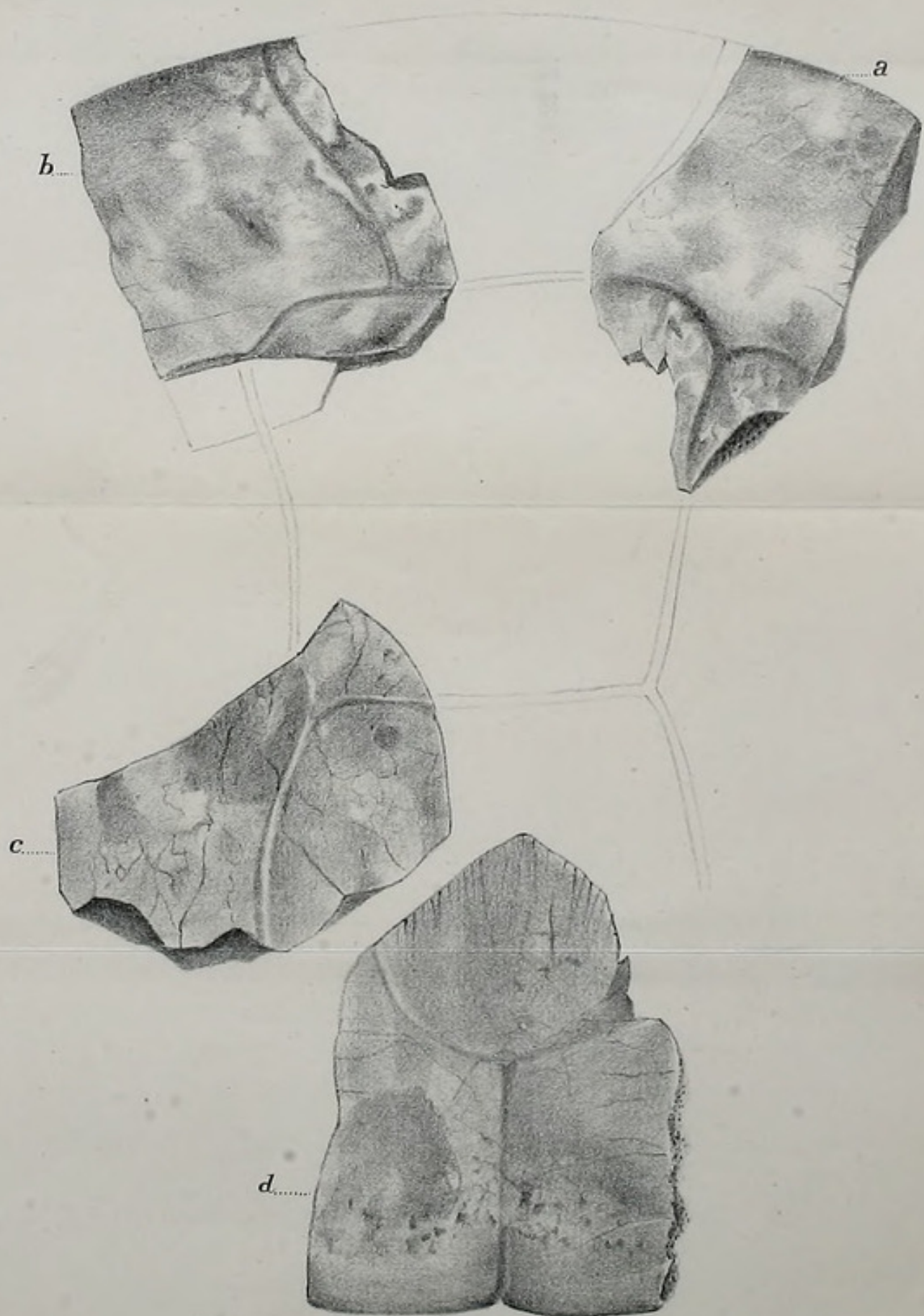


CHELODINA INSCULPTA
CARAPACE

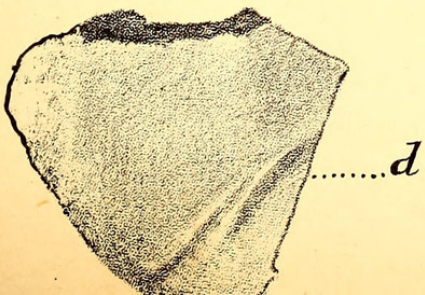
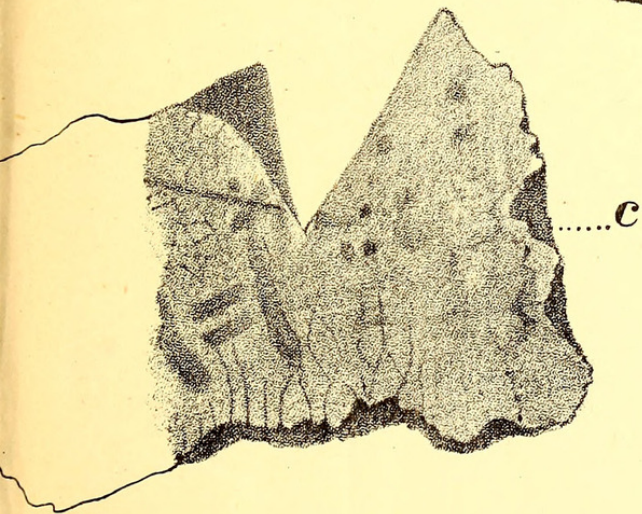
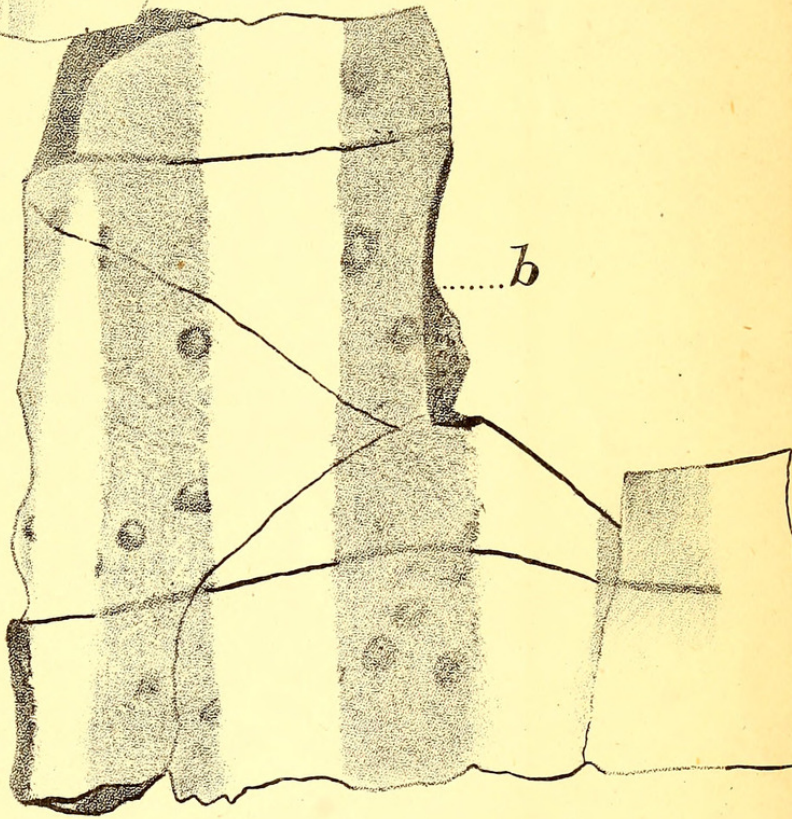
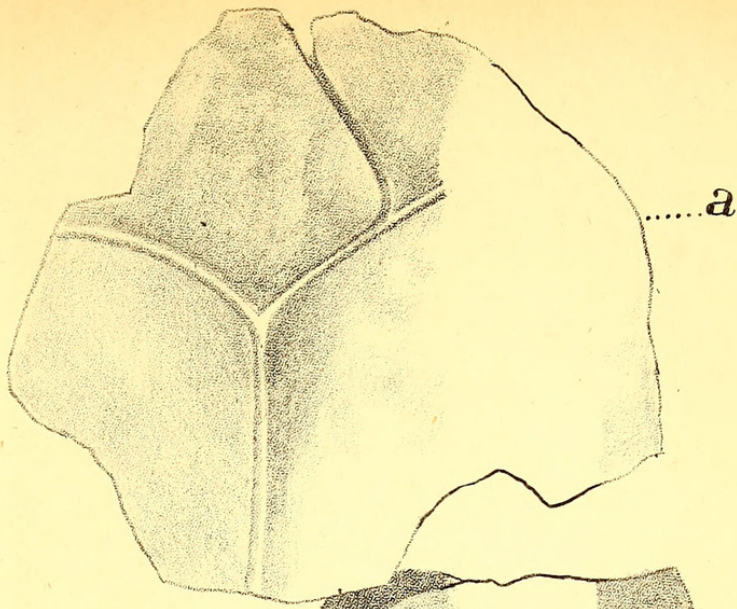


CHELODINA INSCULPTA

Plastron



PELOCOMASTES AMPLA
Front of Carapace & 8th right peripheral



PELOCOMASTES AMPLA

Plastron



De Vis, Charles Walter. 1897. "The extinct fresh-water turtles of Queensland." *Annals of the Queensland Museum* 3, 1–7.

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