

2. On some Chelonian Remains preserved in the Museum of the Royal College of Surgeons. By G. A. BOULENGER.

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In the course of a recent examination of the osteological material preserved in the Museum of the Royal College of Surgeons, I have come across a few interesting specimens of extinct and fossil Chelonians, hitherto overlooked or wrongly interpreted, which Professor Stewart has most kindly placed at my disposal for description.

1. *On the Skull of an extinct Land-Tortoise, probably from Mauritius, indicating a new Species (Testudo microtympanum).*

A skull without mandible, from the Hunterian Collection (no. 1058), differs considerably from that of any of the gigantic Land-Tortoises hitherto described. As it comes nearest to *Testudo triserrata*, Gthr.<sup>1</sup>, an extinct form from Mauritius, we may assume, in the absence of any information as to its origin, that it probably came from that or some neighbouring island. *T. triserrata* is the only species of *Testudo* known to possess two median ridges on the alveolar surface of the maxillary, and this character is shown on the skull for which the name *T. microtympanum* is proposed, in allusion to the very small tympanic cavity, which is one of its principal distinctive features. Another important distinction is to be found in the great backward prolongation of the palatines and vomers, the latter bone forming a suture with the basisphenoid.

The following is a description of this interesting skull:—

	millim.
Total length to extremity of occipital crest . . . .	135
Length to extremity of occipital condyle . . . . .	102
Greatest width . . . . .	98
Diameter of orbit . . . . .	33
Interorbital width . . . . .	45
Greatest diameter of tympanum . . . . .	21

Frontal region convex; interorbital width greater than diameter of orbit; præfronto-frontal suture oblique, extending beyond the middle of the upper border of the orbit; suture between the præfrontals not quite half as long as that between the frontals; only the anterior half of the parietals forms a flat surface, and the sagittal suture is all but obliterated. Postorbital arch rather slender, narrower than the zygomatic, which is formed by the post-frontal, the jugal, and the quadratojugal; postfrontal in contact with quadratojugal. Tympanum small, its greatest (vertical) diameter only about two-thirds the diameter of the orbit. Maxillary with

<sup>1</sup> A. Günther, 'The Gigantic Land-Tortoises (Living and Extinct) in the Collection of the British Museum' (1877), p. 44, pl. xxii. fig. A.



strongly dentate edge, the first cusp strongest and at the junction of the maxillary with the præmaxillary; the broad alveolar surface with two denticulated ridges or series of tubercles, exactly as in *T. triserrata*. Palatal region but moderately concave, and with a

Fig. 1.

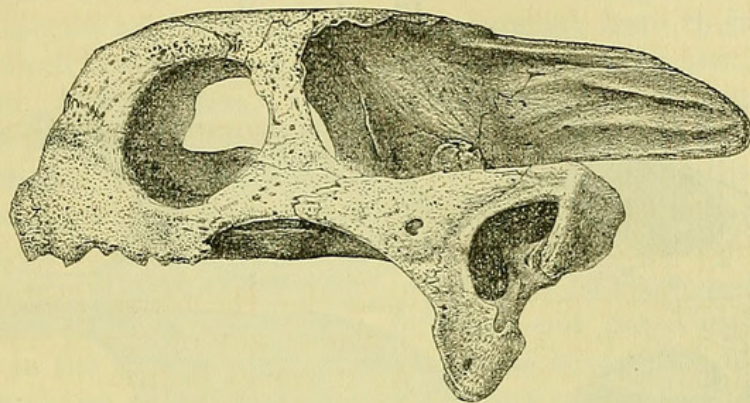


Fig. 2.

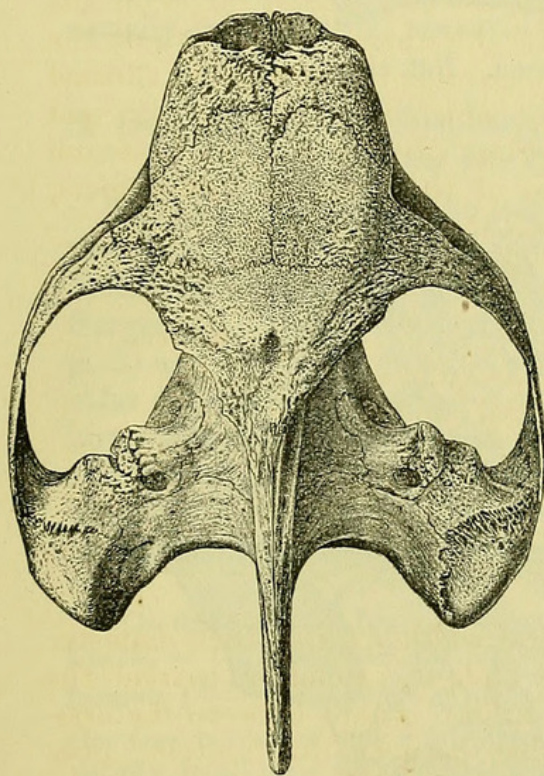
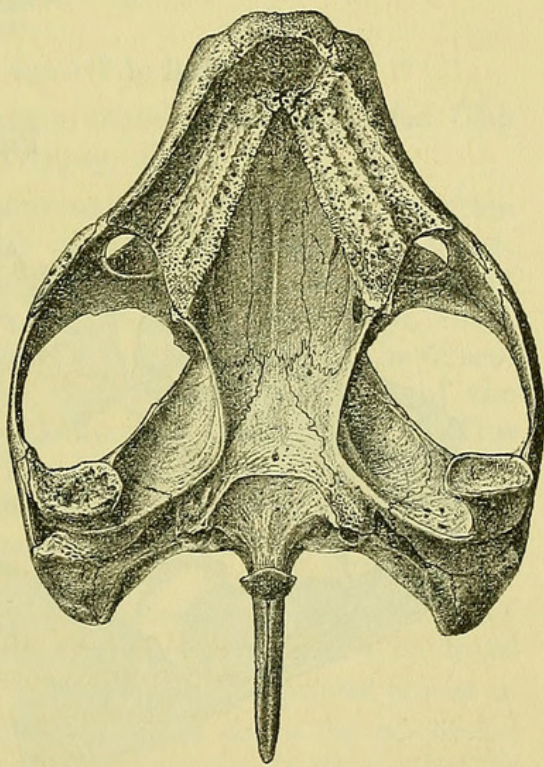


Fig. 3.



Skull of *Testudo microtympanum*.  $\frac{1}{4}$  nat. size.

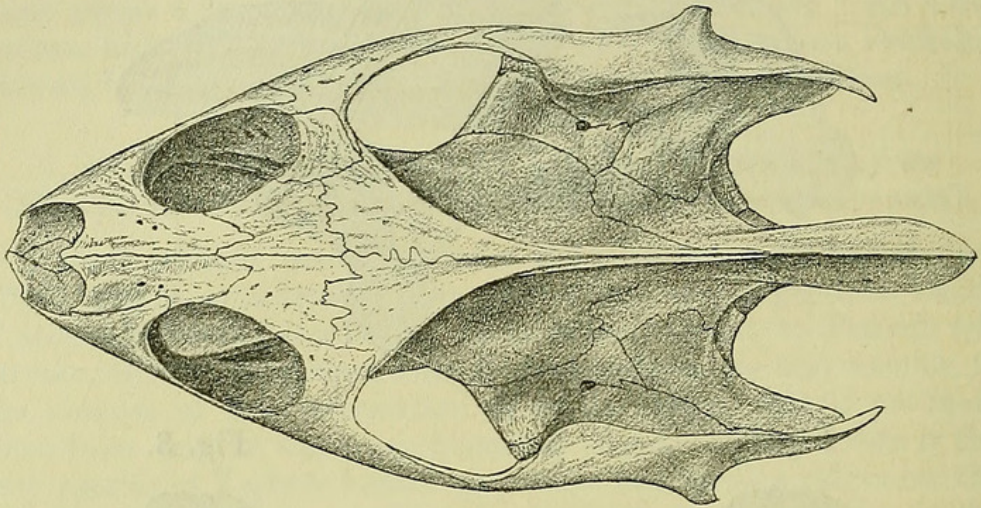
very feeble keel along the anterior two thirds of the vomer; this bone is very much elongate, extending posteriorly as far as the palatines, and forming a suture with the basisphenoid, thus completely separating the pterygoids from each other.



2. On a *Trionyx*-skull from the Upper Eocene of Hordwell,  
Hampshire.

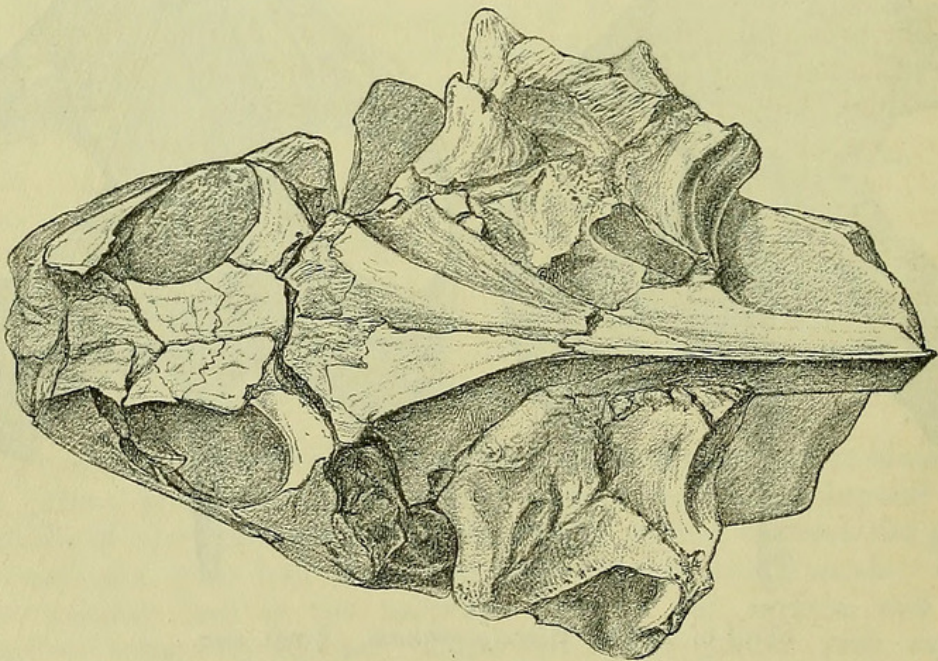
I was very much pleased to find among some unnamed fossils from Hordwell, presented by Alex. Pytts Falconer in 1850, an excellent skull of *Trionyx*, which is the more valuable from the fact that, so far

Fig. 4.



Skull of *Trionyx hurum*. Nat. size.

Fig. 5.



Skull of *Trionyx planus* (?). Nat. size.

as is known to me, no skull of *Trionyx* has yet been described from these beds. It affords conclusive evidence that the English Eocene shells and mandibles referred to *Trionyx* belong to that genus *sensu stricto*, and further corroborates Mr. Lydekker's statement that a mandible from Hordwell in the British Museum (Cat. Foss. Rept. iii.



p. 15, R. 1499) comes nearest the existing *T. hurum*, Gray; for the skull which I now exhibit agrees in almost every respect with that of the Indian *T. hurum*, of which a specimen of the same size (half-grown) is figured for comparison (fig. 4). This is very remarkable, species of Trionychoidea being so well characterized by their skulls; and had the fossil been obtained from the Pleistocene of India, I should have unhesitatingly pronounced it to belong to *T. hurum*.

Four species appear to be well distinguished, from their shells, in the Hordwell beds, viz.:—*T. barbaræ*, Ow., *T. henrici*, Ow., *T. incrasatus*, Ow., and *T. planus*, Ow., the latter species being only known from the posterior portion of the carapace. It is just to this species that I should feel inclined to refer the skull, as it is the only one which, in the coarse sculpture of its dorsal plates, at all approaches the existing *T. hurum*; and I am pleased to find that Mr. Lydekker expresses the view that the mandible alluded to above may possibly be referable to *T. planus*. It is, however, not possible to ascertain whether in the species with very coarse sculpture of the dorsal shield (*T. planus*) two neural plates instead of one are present between the first pair of costals, as in the Indian group to which *T. hurum* belongs; let us hope that future finds may settle this point.

In the meanwhile, this fossil skull (see fig. 5, p. 6), may be provisionally referred to *T. planus*, Owen.

### 3. On a Humerus of *Eosphargis gigas*, Owen, from the London Clay of the Isle of Sheppey, Kent.

The proximal end of the left humerus of an Athecan Turtle from the London Clay (Lower Eocene) of Sheppey, presented by J. Wickham Flower, is preserved in the Museum of the College of Surgeons, and was described by Owen (Descr. Cat. Foss. Rept. 1854, p. 3) as "the lower or distal end of the tympanic bone of the *Crocodylus toliapicus*<sup>1</sup>; it exceeds in size the corresponding part of the largest recent Crocodiles in the Hunterian Collection"<sup>2</sup>. This specimen may be safely referred to Lydekker's *Eosphargis gigas*, Ow., but belongs to an individual considerably smaller than any on record, the greatest diameter of the proximal end of the humerus being only

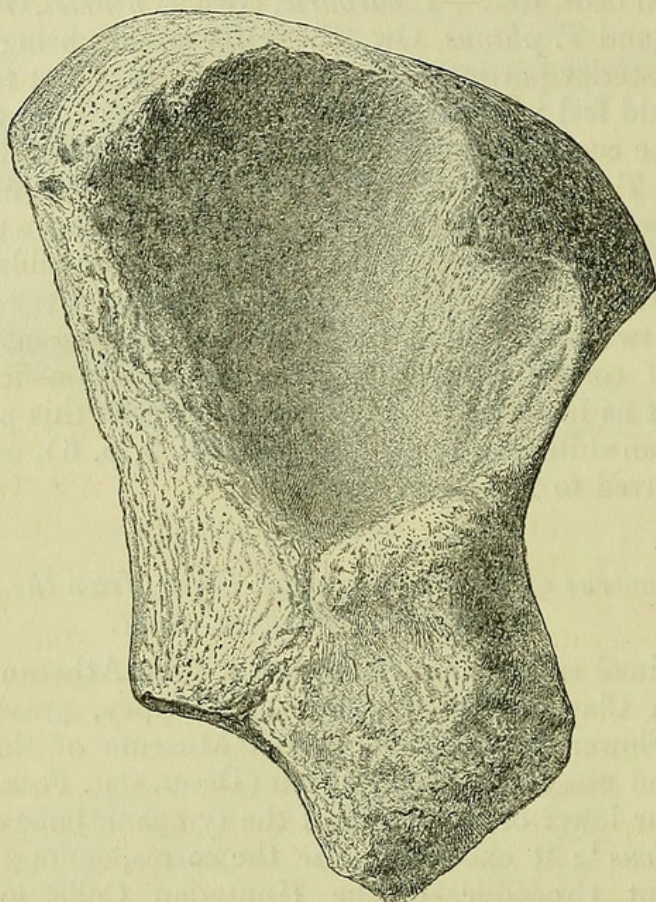
<sup>1</sup> On this occasion, I would observe that *C. toliapicus*, Ow. (= *C. spenceri*, Buckl., = *C. champsoides*, Ow.), is no true *Crocodylus*, as it differs in its dental formula ( $\frac{21-22}{19-20}$ , *Crocodylus* having  $\frac{17-19}{15}$ ), the absence of a pointed process on the free border of the quadratojugal, and the large size of the mandibular vacuity, in all these characters agreeing with *Diplocynodon*, to which genus the British Upper Eocene and Oligocene Crocodile *Alligator hantoniensis*, Wood (= *Crocodylus hastingsiæ*, Ow.), belongs. I regard *Diplocynodon spenceri* and *D. hantoniensis* as standing in the same relation to each other as the recent *Crocodylus intermedius* and *C. palustris*. We therefore know of no British Eocene or Oligocene *Crocodylus*, the remains hitherto referred to that genus belonging to *Diplocynodon*.

<sup>2</sup> Two other fossils are referred by Owen (*l. c.*) to the same Crocodile. His "portion of the left ramus of the lower jaw" I regard as a portion of scapula of *Eosphargis*; and his "another portion of the right ramus of the lower jaw" belongs to a Liassic Plesiosaurian.



88 millimetres. Owing to the less advanced age of the specimen, the notch between the head and the external tuberosity does not exist; this notch I also find feebly marked in the skeleton of the not full-grown *Dermochelys coriacea* preserved in the British Museum. The fossil specimen is broken just above the radial process, but the outer posterior tubercular prolongation of this process, so characteristic of

Fig. 6.



Proximal portion of left humerus of *Eosphargis gigas*.  $\frac{1}{2}$  nat. size.

the Athecæ, is well preserved, and agrees strikingly with the figure of *Psephophorus rupeliensis* given by Dollo<sup>1</sup>, with which the type-specimen of *Eosphargis gigas* also agrees, as stated by Lydekker<sup>2</sup>.

In *Eosphargis*, as in *Psephophorus rupeliensis*, the intertubercular pit is close to the radial border of the humerus, whilst in *Psephophorus scaldii* and in *Dermochelys* it is nearly equally distant from either border. The whole shape of the humerus of *Psephophorus scaldii* approaches so much nearer to *Dermochelys* that it appears to me questionable whether it is correct to refer *P. scaldii*, in the absence of any information as to the cranial and exoskeletal characters, to the genus *Psephophorus* rather than to *Dermochelys*.

<sup>1</sup> Bull. Mus. Belg. v. 1888, pl. iv. fig. 7.

<sup>2</sup> Cat. Foss. Rept. iii. p. 220.



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