

thick and leathery on the back. Brown (coloration badly preserved); groin and sides of hind limb yellowish, with a wide-meshed blackish network.

From snout to vent 75 millim.

A single female specimen. Milne Gulf.

Named in honour of the Marquis Giacomo Doria, who has so largely contributed to our knowledge of Papuanian herpetology.

XLIII.—*On the Characters of the Chelonian Families Pelomedusidæ and Chelydidæ.* By G. A. BOULENGER.

THERE is probably not in the whole classification of Reptiles a more natural division than that of the typical Chelonians (*i. e.* excluding the Athecæ and Trionychoidea) into Cryptodira and Pleurodira. In addition to the two well-known characters, viz. the lateral bending of the neck and the ankylosis of the pelvis, the latter group differs in the following points:—

The mandible articulates with the skull by a condyle fitting into a concavity of the quadrate; the outer border of the tympanic cavity is completely encircled by the quadrate; the pterygoids are extremely broad throughout and form wing-like lateral expansions; the cervical vertebræ have strong transverse processes, and their cup-and-ball articulations are single throughout.

The existing Pleurodira may be divided into three families:—1. Pelomedusidæ (=Pelomedusidæ + Peltoccephalidæ, Gray); 2. Chelydidæ (=Chelydidæ + Hydraspididæ, Gray); 3. Carettochelydidæ*. The latter family, characterized by the absence of dermal shields on the shell and the paddle-shaped limbs, is at present known from external characters only, but is apparently closely related to the Chelydidæ. Considering how widely the first two families differ, it is surprising that their recognition should have been delayed

* [I have asked Mr. Boulenger, who for some time past has been engaged in the study and arrangement of Chelonians, to publish this note in the 'Annals,' in order to preclude any misapprehension as to the authorship of this division of the Pleurodira. This division has been adopted in the article "Tortoise" of the 'Encyclopædia Britannica,' which bears the signature A. C. G. usually affixed by the publishers to my articles, but which, in fact, is the joint production of Mr. Boulenger and myself. More especially he supplied me in manuscript with the systematic synopsis as inserted in the article.—A. GÜNTHER.]

so long. Baur *, it is true, has recently expressed the correct view ; but the characters pointed out by him are by no means the only ones which separate the two families, as may be seen from the following diagnoses :—

PELOMEDUSIDÆ.

Plastral bones eleven, mesoplastrals being present. A bony temporal arch ; quadrato-jugal present ; præfrontals in contact ; no nasals ; palatines in contact ; dentary single. Second cervical vertebra biconvex. *Neck completely retractile within the shell.*

Africa, Madagascar, South America.

- A. No bony temporal roof ; mesoplastra extending right across the plastron : *Sternothærus*.
- B. No bony temporal roof ; mesoplastra small and lateral : *Pelomedusa*.
- C. A bony temporal roof, the quadrato-jugal forming a suture with the parietal ; mesoplastra small and lateral : *Podocnemis* (= *Dumerilia*) and *Peltocephalus*.

CHELYDIDÆ.

Plastral bones nine. No bony temporal arch, the quadrato-jugal being absent ; præfrontals separated throughout ; nasals present, except in *Chelys* ; palatines separated by the vomer ; dentary bones distinct †. Fifth and eighth cervical vertebræ biconvex. *Neck bending under the margin of the carapace, always exposed.*

South America, Australia, and Papuasias.

- A. Neck longer than the dorsal vertebral column : *Chelys*, *Hydromedusa*, *Chelodina*.
- B. Neck shorter than the dorsal vertebral column : *Hydraspis*, *Platemys*, *Elseya*, *Chelymys*.

It will be observed that, owing to the structure of the Pelomedusidæ, the term Cryptodiran, as opposed to that of Pleurodiran, no longer expresses a distinguishing character. The Pelomedusidæ are in fact "Cryptodiran," and the Chelydidæ "Phanerodiran." The term "Orthodira" as opposed to that of Pleurodira would convey the correct idea. But I do not suggest such an alteration, for it seems to me the names of higher groups should, whenever practicable, be retained in virtue of the law of priority, like those of genera and species.

* Zool. Anz. 1887, p. 101.

† The symphysial suture disappears in adult specimens of *Elseya* and *Chelymys*, but is perfectly distinct in younger specimens of these genera.



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