

Figure 21.—Male pleopod 1 of *K. rastripes*, NMS.1969.11.20.4 of cl:9, cb:10.

Measurements taken on the carapace of largest males of *integra* (1), *bongensis* (2) and *rastripes* (3) give the following ratios:

	1	2	3
carapace breadth/carapace length	1.13	1.14	1.14
frontal breadth/carapace length	0.33	0.33	0.44
frontal breadth/carapace breadth	0.29	0.29	0.38
fronto-orbital breadth/carapace breadth	0.54	0.50	0.58

This demonstrates that only *rastripes* has a front clearly broader than *bongensis* and *integra*. The comparison of the present ratio with those given before for the *aff. nitida-marquesa* group confirm that the specimen of *marquesa* from Puerto Galera has a carapace broader than any other.

#### *Kraussia rastripes* Muller 1887

(Figs. 21, 22, 23K)

*Kraussia rastripes*, Muller, 1887, p. 480, pl. 4, fig. 5.—Borradaile, 1900, p. 576.—Balss, 1938, p. 28, fig. 13.

*Kraussia integra*, Alcock, 1899, p. 97.—Tweedie, 1950, p. 108. Not *integra* (De Haan).

Type locality: Ceylon (Trincomale).

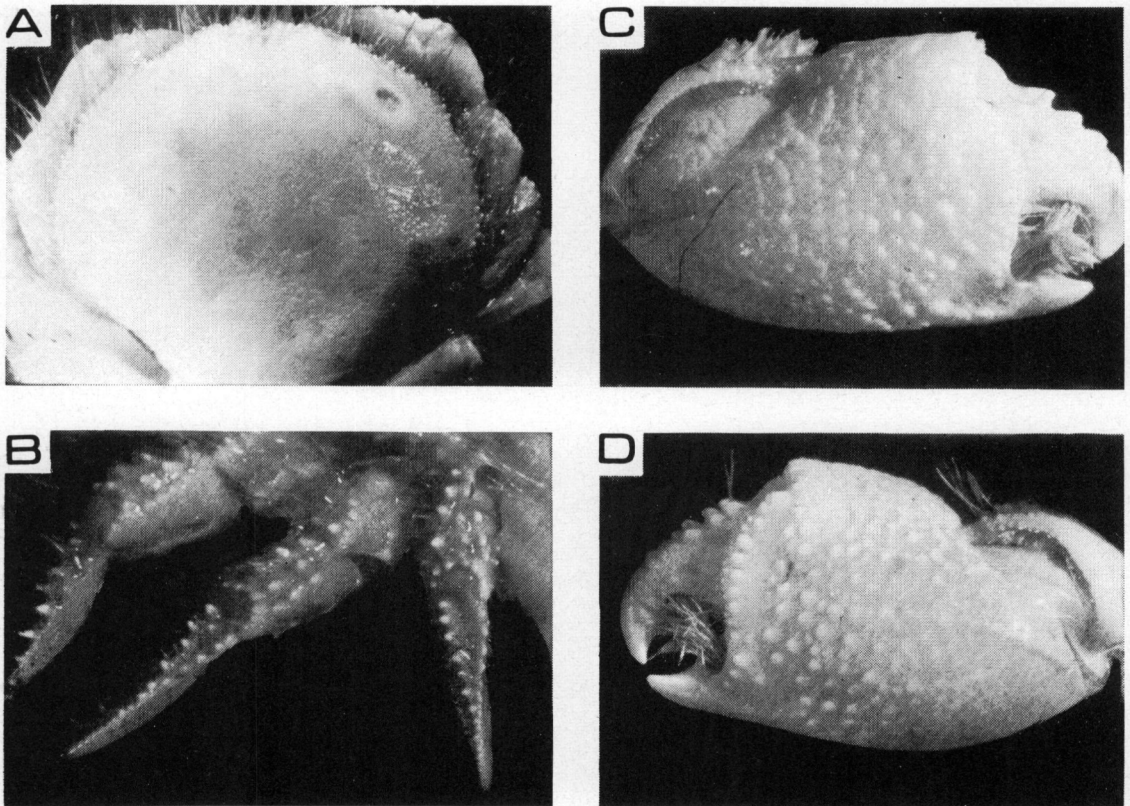


Figure 22.—*Kraussia rastripes*, NMS.1969.11.20.4, female of cl:10, cb:12.40. A, dorsal view.—B, pereopods 3, 4, 5.—C, right cheliped.—D, left cheliped.

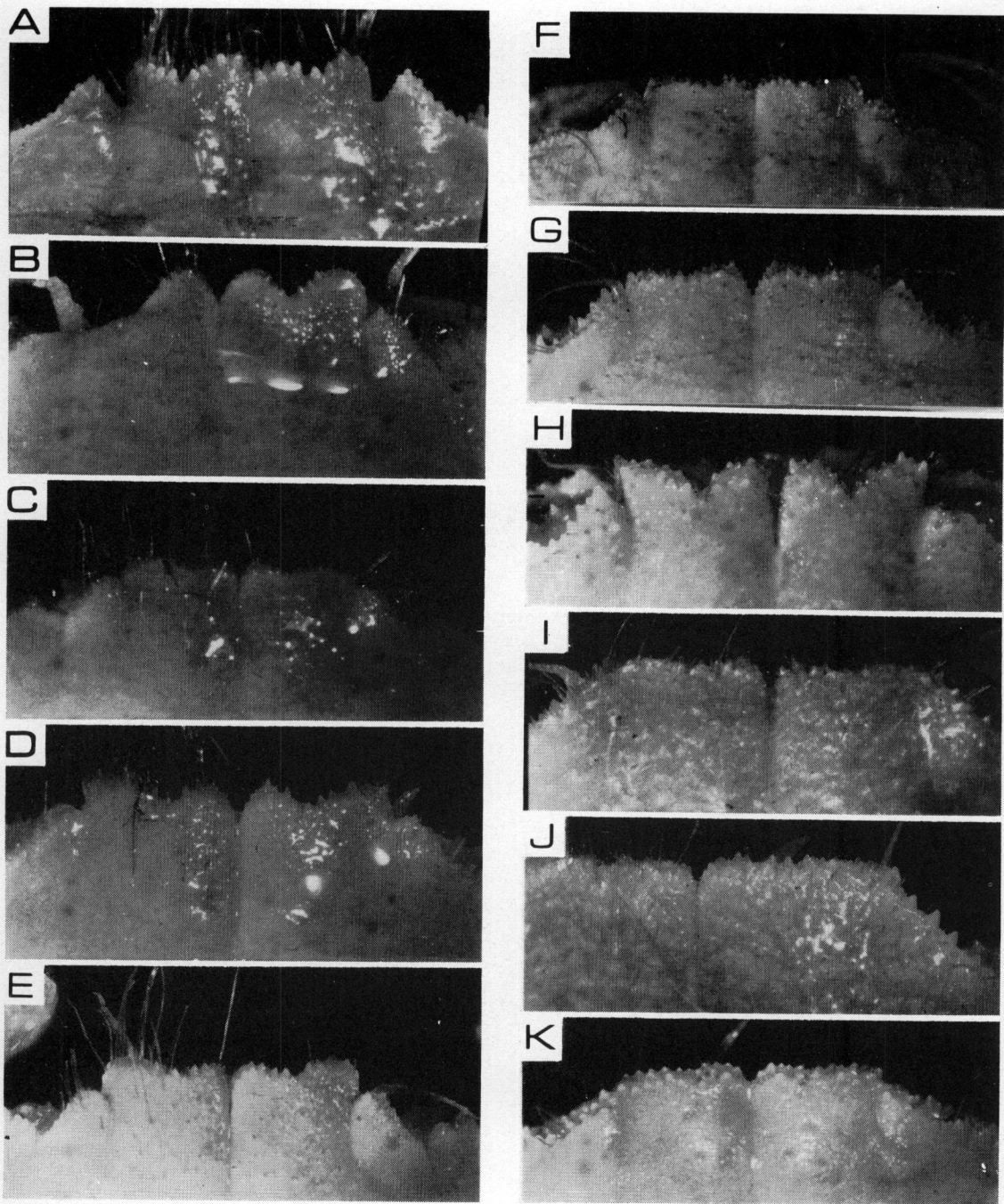


Figure 23.—Frontal border of *Kraussia*: A, *rugulosa*.—B, *quadriceps*.—C, *wilsoni*.—D, *pelsartensis*.—E, *roycei*.—F, *aff. nitida*.—G, H, *marquesa*.—I, *integra*.—J, *bongensis*.—K, *rastripes*. Save for H, male of cl:15.3, cb:18.6 of *marquesa*; all specimens are those illustrated in the previous photographs. All photographs with magnification approximately x 10.

*Material*.—NMS.1969.11.20.4, male of cl:9, cb:10; NMS.1969.10.10.4, female of cl:10.8, cb:12.40; NMS.1969.10.10.5, female a little smaller, Loc: Cocos Keeling, Coll. Gibson Hill 1941, Det: as *integra*? by Tweedie, 1950, p. 108.

*Remarks*.—Tweedie (1950) expressed reserve in his identification by placing a ? on the label of the jar; the reserve is not indicated on his paper. The specimen agrees accurately with the description of Alcock (1899) for *nitida* but clearly differs from *integra*. Tweedie (1950), referring for his identification as *integra* to Balss (1938), who does not give any illustration nor any comments on *integra*, was probably referring to the description of Alcock (1899).

Muller (1886) mentions the close relation between his species and *integra* but among the characters of *rastripes* he states that the pereopods 2-5 have on the anterior border of the propodi two or three rows and on that of the dactyli one row of acute tubercle-like saw-teeth (Sagezähne). In the description of *integra* by Alcock (1899) the dorsal surface of the dactyli of ambulatory legs "abundantly and elegantly denticulate" correspond to *rastripes* and not to *integra*, which according to Sakai (1939) has those dactyli "blade shaped and recurved".

The name *rastripes* given to a single male of 13 x 15 has been correctly used by Borradaile (1900) for a female from Rotuma, and by Balss (1938), who examined 4 females and 1 male from the Hamburg Museum and one female from the Berlin Museum but gave the size of only one female of 12 x 14. I correct as *rastripes* the identifications of the *integra* specimens of Alcock (1899) and Tweedie (1950).

*Observations*.—The species can be identified at first view by its subcircular carapace ("Panzer subcycloid", Muller) and strongly denticulate ambulatory legs. The material of Tweedie (1950) was examined and found in full agreement with the descriptions and illustrations of Muller (1886) and Balss (1938). *K. rastripes* differs from *integra* and *bongensis* by: (1) the dorsal surface of the carapace more convex and nearly smooth.—(2) the frontal border less salient beyond the orbit and forming a hemispherical curve with the antero-lateral border, which are without indication of any notch.—(3) the absence of sinus on the upper orbital border.—(4) both chelipeds equal and identically shaped; the length and height of the palm, the length and shape of the fingers are the same in the two chelipeds.—(5) the palm of the cheliped higher with granules larger but less numerous and more separated; similarly the granules in the dactyli are larger and more separated.—(6) the anterior border of the dactyli of the pereopod 2-5 nearly straight, all along flattened with on each side of the flattening a row of acute teeth.—(7) the male pleopod.

As indicated before in the observations on *bongensis*, also the front of *rastripes* is broader than on these two species.

*K. rastripes* is recorded from Ceylon (Muller), Rotuma (Borradaile), Gilbert Island, Pulau Island, Carolines Island, New Guinea (Balss), Andamans (Alcock), Cocos Keeling Island (Tweedie).

#### Remarks on the ecology, the ethology and the relationship of *Kraussia*

I myself have never seen a living specimen of *Kraussia*; the present remarks only refer for ecology to the data of the present collection and some few authors; for the ethology to personal observations made on other groups of Brachyura.

The species of *Kraussia* live on bottom of coarse sand around the rocky and coral area extending from the shores to the depth of 100m. They are digging crabs like the other Corystidea, the Gymnopleura, some Oxystomata, some Xanthidae, Goneplacidae and Pinnotheridae. Observations on the behaviour of these forms and on the ecological condition of their habitat (nature of the bottom, composition of the sand or mud by granulometry) will help to understand the function of their morphological structures.

The vaulted carapace of *Kraussia* with the pereopods (when folded) partly fitted below the margins is somewhat similar to that of *Calappa* for example. It suggests that, like *Calappa* when it has dug, *Kraussia* hides its body under the sand in a oblique position, its anterior part at the level of the surface of the sand and the posterior part a little lower.

During the examination of the present material in order to find morphological structure which could provide characters for specific differentiation, I noticed on the ventral side of the posterior half of the lateral border of the carapace of *integra* and *bongensis* a shallow, elongate and smooth depression. Situated between the pterygostomial line and the edge of the border, this structure reminds me of a similar but more developed one which I recently observed on *Guinotellus* Serene 1971, a new genus of Xanthidae. This genus is briefly described from type material consisting of only one carapace without pereopod which was then the only available material; its relationship to *Hypocolpus* and *Euxanthus* is briefly mentioned by Serene (1971).

The comparison of *Kraussia* (mainly *integra*) with large specimens of *Guinotellus* in good condition presently in hand demonstrates several close relationships between the two genera, and suggest that *Guinotellus* could be a morphological link between the Euxanthoidea (*Hypocolpus-Euxanthus*) and the Thiidae (*Kraussia*), two groups with probably the same ethology.

The relationship between *Kraussia*, *Guinotellus* and *Euxanthus* are supported by several morphological structures, such as the lateral border of the carapace vaulted with the ambulatory legs when folded at least partly concealed; the chelipeds strongly fitted against the pterygostomial region; the third maxilliped, sternum and abdomen narrow; and the male pleopod 1 elongate and slim. But *Euxanthus* and *Guinotellus* clearly differ from *Kraussia* by the orbito-antennal region and the presence at the anterior limit of the buccal cavern of a small but clearly marked margin, which does not exist on *Kraussia*.

Other common characters like the occasional presence on the carapace of small, flattened (squamiform) granules arranged in transverse