

STUDIES ON THE FAUNA OF CURAÇAO AND OTHER
CARIBBEAN ISLANDS: No. 103.

**FLORARCTUS ANTILLENSIS, A NEW TARDIGRADE
FROM THE CORAL SAND OF CURAÇAO**

by

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Recently DELAMARE DEBOUTTEVILLE & RENAUD-MORNANT (1965) described two new species of marine tardigrades, *Florarctus heimi* and *F. salvati*, for which they erected a new genus. The representatives of this remarkable genus are characterized by the possession of large, aliform expansions of the body, structures which were unknown among the Tardigrada. The two species were taken from coral sand from New Caledonia.

Two specimens of an undescribed species, which undoubtedly belongs to the genus *Florarctus*, have now been found in a sample of coral sand from Curaçao. The sample, preserved in alcohol, was kindly put at the author's disposal by Dr. P. WAGENAAR HUMMELINCK, who collected it during his investigations of the Piscadera Baai in 1964.

The sample contained a rich fauna in which Foraminifera, Polychaeta, Copepoda and Acari abounded, while Turbellaria, Nematoda, Ostracoda, Tanaidacea, Cumacea, Isopoda, juvenile Mollusca and juvenile Echinodermata were also present but less abundant. No tardigrades were found in other samples collected in neighbouring localities in the outer Piscadera bay.

***Florarctus antillensis* n. sp.**

(Fig. 104–115)

MATERIAL: 2 specimens, Curaçao, Piscadera Baai, Boca, depth 3 m, coral sand, leg. P. Wagenaar Hummelinck (Sta. no. 1456), 2.I.1964. – The holotype a whole mount in ethylene glycol, is deposited in the Rijksmuseum van Natuurlijke Historie, Leiden (coll. no. 5940); the paratype was lost.

DIFFERENTIAL DIAGNOSIS. — Length of the body proper up to 300 μ . Caudal region of the body truncate, with latero-posterior hooks. Ala anterior and alae antero-laterales present. Two pairs of lateral alae, each corresponding to two body segments. Ala posterior with four lobes. Uncus of digitus internus without accessory spines.

DESCRIPTION. — Both specimens measure about 300 μ in length, their maximum body width being about 200 μ .

Head (Fig. 113): The five cirri mediales each consist of three joints: a bulbous base (cirrophorus), a trumpet-shaped scapus, and a hair-like flagellum. Their measurements are: cirrus medianus, scapus, 15 μ , flagellum, 35 μ ; cirrus medianus internus, scapus, 25 μ , flagellum, 45 μ ; cirrus medianus externus, scapus, 13 μ , flagellum, 20 μ . The large clava (130 μ long) and the cirrus lateralis (scapus, 15 μ , flagellum, 40 μ) have a broad, common cirrophorus. A refractive structure is present in this cirrophorus, and a similar organ can be observed in the scapus of the cirrus medianus internus. The ala anterior (20 μ) is attached to the cirri mediales interni, up to halfway the scapus. Each ala antero-lateralis is attached to a cirrus medianus internus and a lateral cirrophorus. The buccal cone is situated just anterior to the level of the first pair of legs. The structure of the buccal organs could not properly be studied. The subglobular bulbus has a diameter of about 30 μ .

Body (Fig. 104–105): The body is flattened ventrally and arched dorsally; its height is much smaller than its width. It is narrowest just behind the head and widest just before the third pair of legs. The caudal region is very broad and truncate, and provided with two hooks. The gonoporus is situated just behind the level of the third pair of legs. It is surrounded by six cuticular plates (Fig. 115), of which the anterior pair is largest. The anus is situated between legs IV as is usual in marine tardigrades. The alae are transparent, but very finely punctate upon closer examination. The lateral alae have a width of up to 70 μ , the posterior one of up to 100 μ . The two pairs of lateral alae each correspond to two body segments. In the alae of the first pair one small and four larger sectors can be recognized. The two-lobed alae of the second pair partly overlap those of the first pair. They are attached to the posterior hooks. The four-lobed

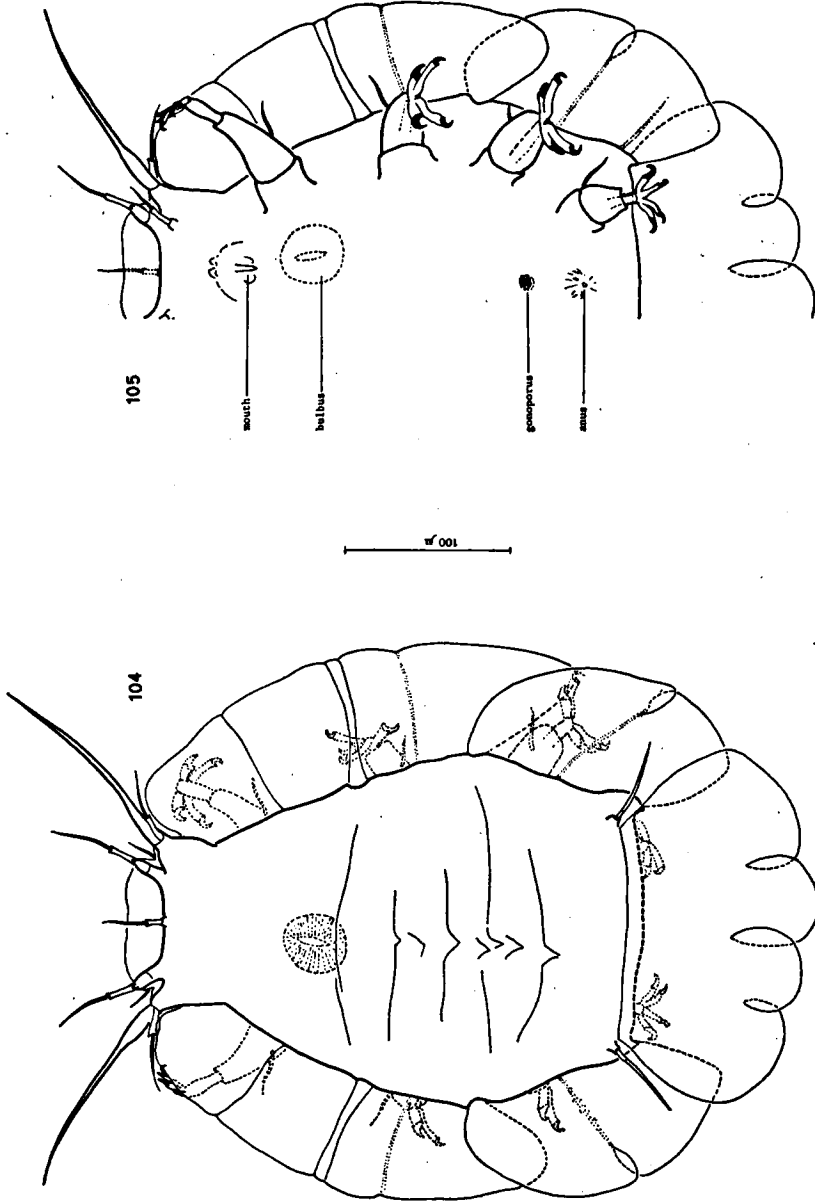


Fig. 104-105. *Floracetus antillensis* n.sp. from Curaçao: 104, habitus in dorsal view; 105, ventral view. [Paratype].

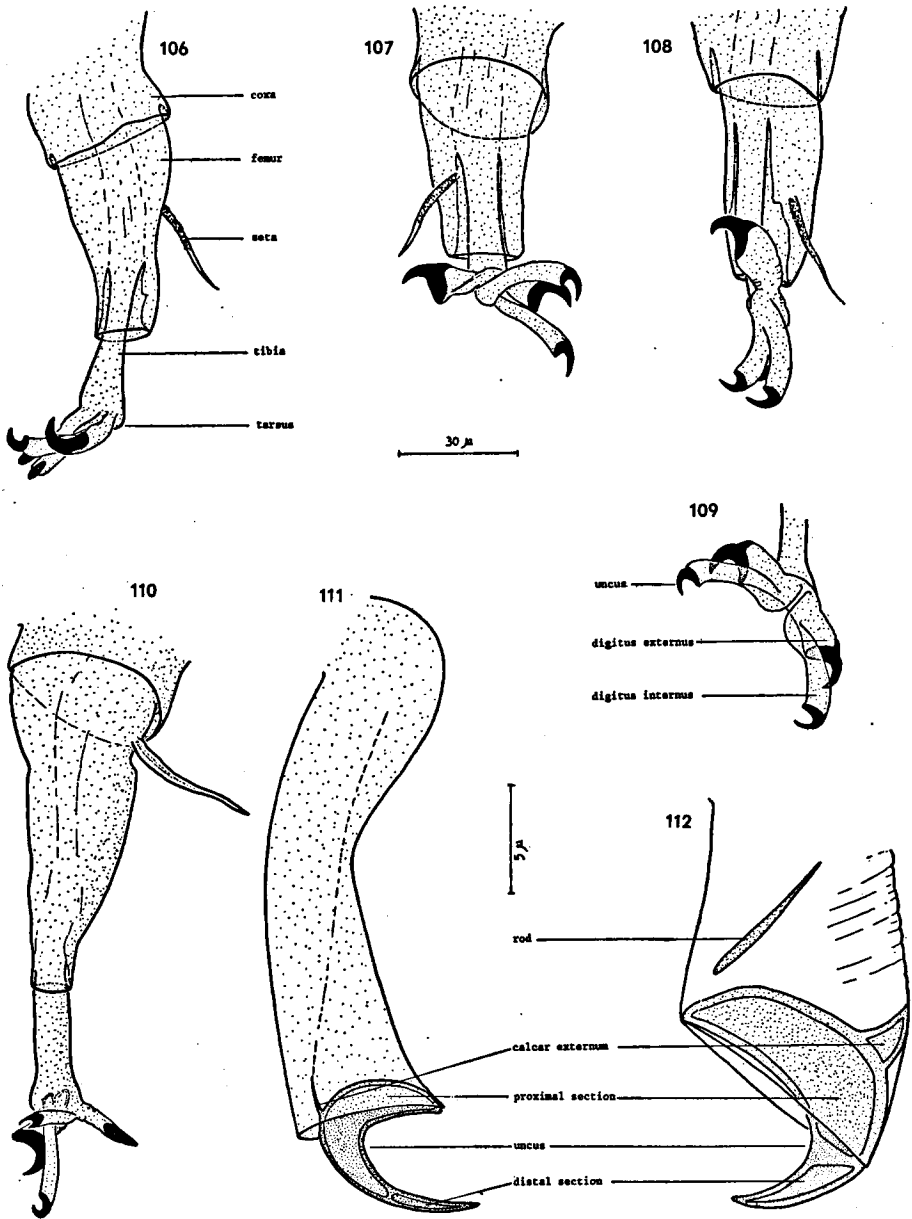


Fig. 106-112. *Florarctus antillensis* n.sp. from Curaçao: 106, leg I; 107, leg II; 108, leg III; 109, tarsus leg III; 110, leg IV; 111, digitus internum leg II; 112, digitus externum leg II. [Paratype].

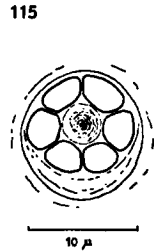
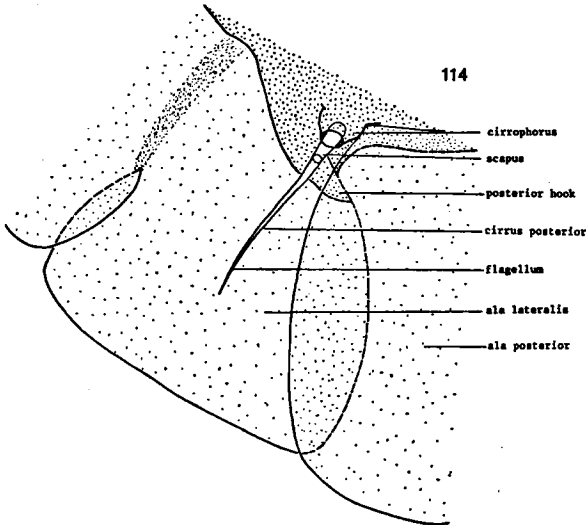
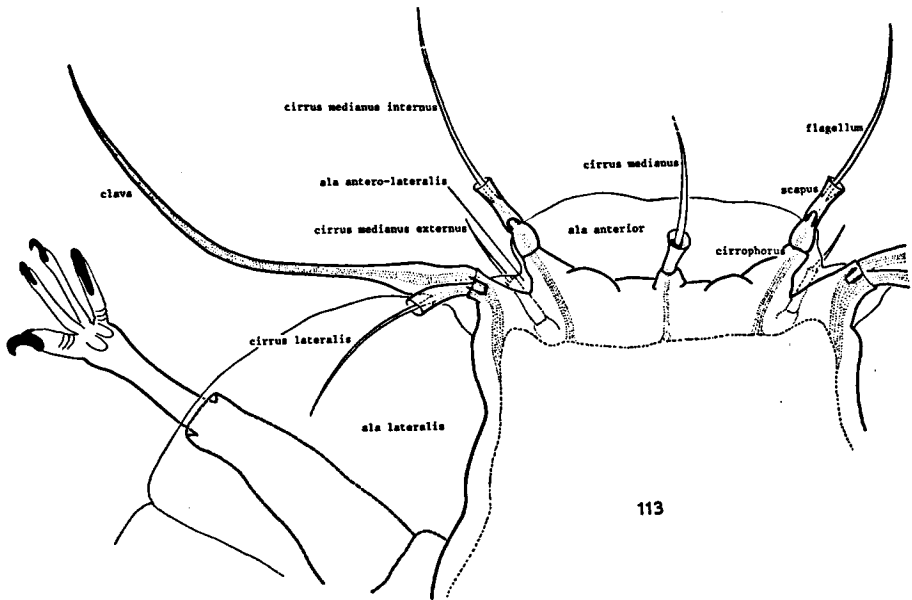


Fig. 113-116. *Florarctus antillensis* n.sp. from Curaçao: 113, head region in dorsal view; 114, left part of caudal region in dorsal view; 115, gonoporus. [Holotype].

ala posterior arises more dorsally from the body between the posterior cirri. A cirrus posterior does not differ basically from an anterior cirrus, but here the scapus is very small and the main articulation is between scapus and cirrophorus (Fig. 114).

Legs (Fig. 106–112): Each leg consists of a short, broad coxa (up to 20 μ long), a femur (up to 85 μ long in a stretched position), a slender tibia (up to 35 μ long), that can completely be telescoped into the femur, and a tarsus. Each femur has a seta, but there is some difference between setae IV and setae I–III. The setae of legs IV (Fig. 110) measure about 35 μ in length and about 3 μ in width, and they are situated close to the coxae. The other setae are slightly smaller (about 30 μ long and about 2 μ wide), and they have a rugose appearance, at least in their proximal parts. The digiti interni (Fig. 111) are slender, up to 30 μ long, bearing a small uncus with a maximum length of about 8 μ ; a small spur (calcar externum) is present. A thin thread-like structure runs from the spur to the proximal part of the toe. The digiti externi (Fig. 112) are not so long, up to 20 μ , but they are wider and bear a much larger uncus with a maximum length of about 12 μ . The massive uncus has a large calcar externum. One rod, about 7 μ long, is present in the toe.

DISCUSSION. – The new species is about the same size as the previously described *Florarctus heimi*. Both of these represent rather large forms about the marine Tardigrada. *Batillipes mirus* is the only species known to be larger. The structure of the cirri and the legs could be studied quite well owing to their relatively large dimensions. Some new names have been introduced for parts of these organs in order to facilitate discussions on the morphology and to promote a more detailed study of other Arthrotardigrada. A further comparative morphological study of the various body appendages is certainly promising. Of course the new terms are only used in a descriptive sense, to replace terms in national languages.

It may be concluded from the above descriptions that the legs of *Florarctus* can rightly be called “arthropoda”, and that the cirri are also segmented organs. The question remains whether this situation is original or derived.

LITERATURE

- DELAMARE DEBOUTTEVILLE, C., & RENAUD-MORNANT, J., 1965. Un remarquable genre de Tardigrades des sables coralliens de Nouvelle-Calédonie. *C.R. Acad. Sc. Paris* 260: 2581-2583.
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