

ZOOLOGISCHE MEDEDELINGEN

UITGEGEVEN DOOR HET

RIJKSMUSEUM VAN NATUURLIJKE HISTORIE TE LEIDEN
(MINISTERIE VAN CULTUUR, RECREATIE EN MAATSCHAPPELIJK WERK)

Deel 52 no. 27

22 juni 1978

REDESCRIPTION OF *COUTIEREA AGASSIZI* (COUTIÈRE, 1901) (CRUSTACEA DECAPODA, PALAEMONIDAE)

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With 2 text-figures

Since Coutière (1901) published the original description of his new species *Coralliocaris Agassizi*, no new finds of this species have been reported anymore. Recently a second specimen was collected by the University of Miami's R.V. "John Elliott Pillsbury", which makes it possible to give additional details of this peculiar species, which is so aberrant that it was made the type of a separate genus, of which it still is the only species known. Coutière's only specimen was a male and it is therefore most gratifying that the present second specimen is an ovigerous female. Unfortunately the exact locality where this second specimen was collected is not known.

I am most grateful to Dr. Gilbert L. Voss, Institute of Marine and Atmospheric Science, University of Miami, Florida, for his kindness to allow me to study this very interesting specimen.

Coutierea agassizi (Coutière)

Coralliocaris Agassizi Coutière, 1901: 115, fig.; Holthuis, 1955: 75.

Coralliocaris Agassizii - Nobili, 1901: 4 (genus *Coutierea* proposed).

Coutierea agassizi - Borradaile, 1917: 386; Holthuis, 1951: 179, pl. 56; Holthuis, 1952: 19; Holthuis, 1955: 74, fig. 47b.

Coralliocaris agassizi - Kemp, 1922: 267; Holthuis, 1955a: 210; Hemming, 1957: 135.

Material. — One ovigerous female was taken during the 1971 cruise of R.V. "John Elliott Pillsbury" in West Indian waters. The label with the specimen indicated the station number 1384, but this certainly is incorrect, as station 1384 was in the Puerto Rico Trench (19° 49'N 67° 00'W, depth 7956-7919 m) and it is certain that among the few specimens collected at that station there were no shrimps. A number of other organisms carried the in-

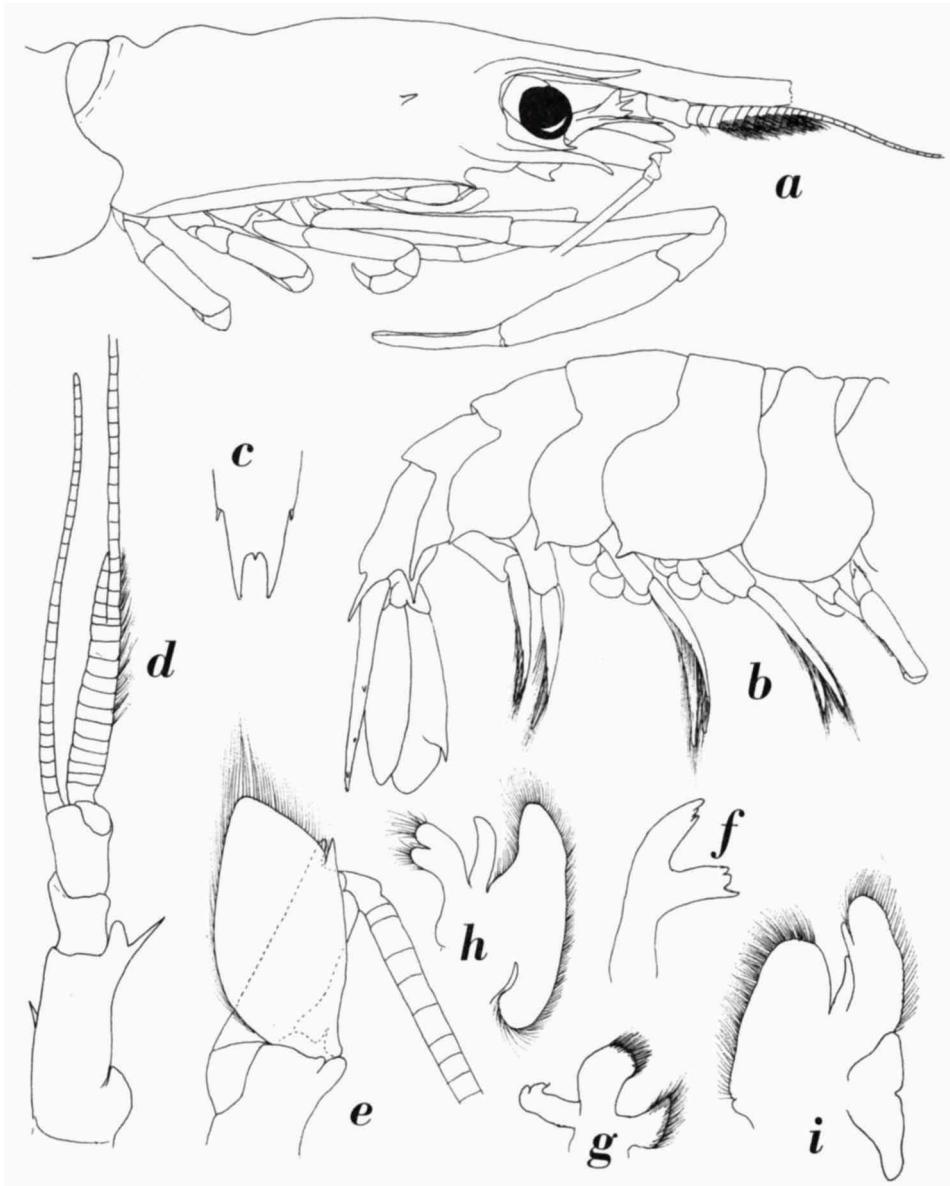


Fig. 1. *Coutierca agassizi* (Coutière), female. a, anterior part of body in lateral view; b, posterior part of body in lateral view; c, tip of telson; d, antennula; e, antenna; f, mandible; g, maxillula; h, maxilla; i, first maxilliped. a, b, $\times 7$; c, $\times 14$; d, e, $\times 12.5$; f-i, $\times 25$.

correct station number, and it is most likely that the material was collected at the south coast of the Dominican Republic at either Station 1386 (9 July 1971, 18° 21.4'N 69° 06.0'W - 18° 22.8'N 69° 06.6'W, depth 148 m) or Sta. 1387 (9 July 1971, 18° 21.4'N 69° 08.7'W, depth 165 m). The specimen is now preserved in the Rijksmuseum van Natuurlijke Historie, Leiden, under reg.no. Crust. D. 30543.

Description. — The rostrum of this specimen has the tip broken, but it must have reached about to the end of the upper antennular flagellum, as the broken part attains the end of the fused part of this flagellum. The rostrum is strong, sabre-shaped in lateral view, and totally unarmed. In dorsal view it shows a basal widening at each side, forming an eave over either eye. This widened part is about quadrangular in outline and narrows abruptly anteriorly into the narrow distal part of the rostrum. Each outer anterolateral angle of the widened part is produced into a large sharply pointed tooth. The lateral margin of the widened basal part continues on the carapace as a carina which curves somewhat down and forms the upper part of a pseudo-orbital margin. The actual orbital margin, formed by the anterior border of the carapace, very gradually merges with the rest of the anterior margin, the lower angle of the orbit is only vaguely indicated. The antennal spine, on the other hand, is very strong; it reaches forward beyond the orbital eave and almost attains the end of the first segment of the antennular peduncle. It shows as a long and narrow sharp dagger-like process, with the apex curved slightly down; no accessory spine as described by Coutière is visible in the present specimen. Posteriorly the antennal spine is continued on the carapace as a distinct carina, which forms the lower part of the pseudo-orbit. This pseudo-orbit is far from complete as there is a wide gap between the ends of the dorsal and ventral carinae forming it. Below the antennal spine the anterior margin of the carapace forms a narrow and deep sinus, which at its ventral limit is formed by the strong pterygostomial spine. A very short distance behind the pterygostomial spine a low but sharply marked carina starts from the lateral margin of the carapace and extends backward, practically parallel to the lateral margin, which it rejoins slightly before the posterolateral angle. A strong postorbital spine is placed in the posterior part of the anterior third of the carapace at the level of the orbit. No other spines are present on the carapace. The two additional spines shown on the right side of the carapace in Coutière's figure of the anterior part of the carapace in dorsal view (but lacking on the left side and neither shown in his figure of the animal in lateral view, nor mentioned in his description), evidently do not exist and must be due to an incorrect interpretation by the artist. The carapace shows various regions quite clearly. Two distinct, but broad and

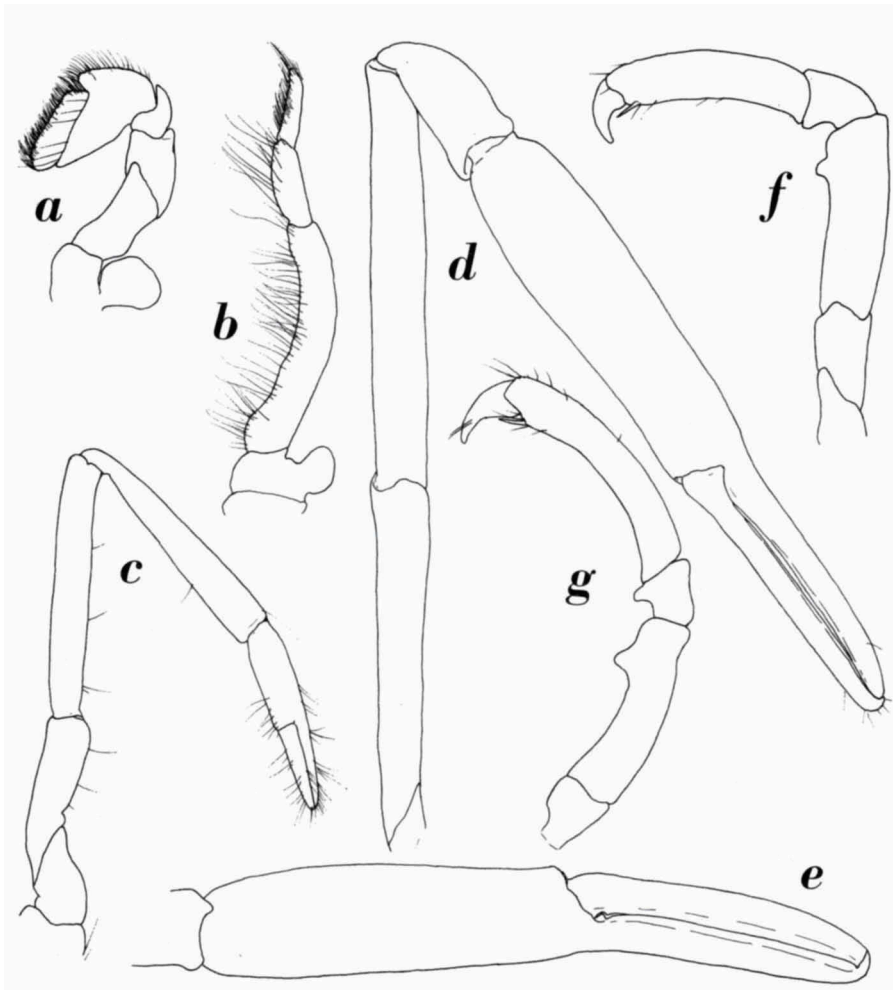


Fig. 2. *Coutierea agassizi* (Coutière), female. a, second maxilliped; b, third maxilliped; c, first pereopod; d, second pereopod; e, chela of second pereopod; f, third pereopod; g, fifth pereopod. a, $\times 25$; b-g, $\times 12.5$.

shallow transverse grooves are present in the posterior half of the carapace, possibly representing the cervical and intestinal grooves; a curved branchio-cardiac groove connects these intestinal and cervical grooves and curves down anteriorly before it stops. Between the anterior end of the branchio-cardiac groove and the postorbital spine there is a depressed area. The posterior margin of the carapace is thickened.

The first abdominal somite shows a shallow and wide transverse groove in the middle; this groove bifurcates on the pleuron. The pleuron of the first

abdominal somite is roughly quadrangular with rounded angles and no teeth; an oblique carina is visible in its anterolateral part. The second to fifth pleura show a much shallower and less distinct transverse median groove in the posterior part. The pleuron of the second somite is widely rounded, those of the following somites become narrower. The pleura of the second to fifth somites all end in a sharp distal tooth, the tooth of the fifth somite being especially long and slender. From the tooth a low carina extends over the full length of the pleuron. The sixth somite is slightly longer than the fifth and somewhat more than half as long as the telson. The pleuron of the sixth somite is a triangular sharp tooth; the posterolateral angle of this somite is provided with a tooth which is longer and narrower than the pleural tooth. The telson is elongate and shows a shallow median groove flanked by two low longitudinal submedian ridges. The posterior margin ends into two strong fixed teeth, between which there is a very small median denticle. The lateral margin of the telson bears three movable spinules, one placed slightly before the middle of the telson, the second at about $3/4$ of its length and the third just before the teeth of the posterior margin. The third of these spinules is the larger of the three.

The eyes have a well developed rounded cornea.

The basal segment of the antennular peduncle is about as long as, or somewhat longer and distinctly wider than the other two segments. The stylocerite shows as a bluntly topped lobe at the outer part of the base of the segment. The anterolateral angle of the segment ends in a strong and heavy spine; the anterior margin of the segment is strongly forwards produced but fails to overreach the anterolateral spine. A strong spine is furthermore present in the middle of the lower inner margin of the segment. The second segment is about as wide as the third but is somewhat shorter. The shorter ramus of the bifid flagellum has the 12 basal segments fused with those of the longer flagellum, and the five or six distal segments free; the free part is about half as long as the fused.

The scaphocerite is short and relatively wide, it is about twice as long as wide. The outer margin is sinuous and ends in a distinct tooth, which is far overreached by the lamella. The latter is somewhat triangularly produced anteriorly. A sharp spine is placed on the antennal peduncle below the outer part of the base of the scaphocerite. A second spine is present on the lower surface of the peduncle somewhat proximal of the base of the scaphocerite. The ultimate segment of the antennal peduncle almost reaches the end of the scaphocerite; it has a long bluntly topped tooth at its inner distal margin.

The mandible lacks a palp altogether; the incisor process is well developed and ends in four teeth, the outer of which are the longer; the molar process

ends in some blunt teeth. The maxillula has the palp distinctly bilobed; the two laciniae are of normal shape and not much broadened. The maxilla has the scaphognathite large, the palp well developed and the endite bilobed. The first maxilliped has the endites not separated by a notch; the palp is distinct; the exopod has a large caridean lobe, but the flagellum is reduced to a small process which fails to reach beyond the caridean lobe; the epipod is bilobed. The second maxilliped is of a normal shape and is provided with an epipod, but without a trace of an exopod or podobranch. The third maxilliped is slender and reaches the base of the scaphocerite. It bears an epipod, but no exopod or any other gills. The distal segment is almost as long as, but less wide than the penultimate, and measures about $1/3$ of the length of the penultimate segment. The branchial formula is as follows:

	maxillipeds			pereiopods				
	1	2	3	1	2	3	4	5
pleurobranchs	—	--	—	1	1	1	1	1
arthrobranchs	—	--	—	—	—	—	—	—
podobranchs	—	--	—	—	—	—	—	—
epipods	1	1	1	—	—	—	—	—
exopods	rud.	--	—	—	—	—	—	—

The first pereiopods are equal, they reach with the top of the merus slightly beyond the base of the scaphocerite. The chela is slender and the fingers unarmed. The palm is slightly longer than the fingers. The chela is $3/4$ as long as the carpus, the latter being about of the same length as the merus. In the present specimen only the right second leg is present. It is carried with the basal half (coxa, basis, ischium and merus) directed forwards, the carpus and chela being folded back. The chela is slender with the palm slightly swollen. The fingers are slightly shorter than the palm and have the tips curved inward. The cutting edges close over their full length and are unarmed except for a small tooth in the extreme basal part. The carpus is elongate cup-shaped and about half as long as the fingers. The merus is somewhat longer than the palm, and the ischium is slightly longer than the fingers. None of the segments shows any spines or teeth. The third to fifth legs are quite similar in shape; they are rather short. The third leg reaches about to the base of the eye. The dactylus is simple, curved, with the basal part somewhat swollen, but without a true basal process. The propodus is somewhat curved, with a distinct movable spine in the distal part of the posterior margin. The propodus is about three times as long as the dactylus and distinctly wider than it. The carpus is less than half as long as the propodus, and is somewhat knob-like produced in the distal part of the posterior margin. The merus is wider than either carpus or propodus, and about as long as the

propodus; it has a very conspicuous knob-like process in the distal third of the posterior margin. The fourth leg is similar to the third. The fifth leg is slightly more slender; it has the propodus more curved, the knob-like process on the carpus more distinct and the merus shorter relative to the propodus, but otherwise very similar to the third leg.

The uropod has the protopod ending dorsally in two lobes without teeth. The endopod is oval, the exopod has the outer margin straight and ending in a simple tooth.

Size. — The specimen has the carapace length (the rostrum not included) 7.5 mm. The total length (from the broken end of the rostrum to the tip of the telson) is 28 mm. The eggs have a diameter of 0.5 to 0.7 mm. The total length of Coutière's male type specimen was 25 mm.

Remarks. — The specimen agrees well with Coutière's original description and the few points of difference are probably either due to sex (Coutière's specimen being a male and the present an ovigerous female) or to individual variation. These differences are the following:

1. The antennal spine in the type bears laterally an accessory spine. Such an accessory spine is not present in the female examined here.

2. Coutière stated that the fingers of the second leg are unarmed. He may have overlooked the two very small basal teeth of the cutting edge; such teeth are present in the female just described.

3. As already stated above the spines on the anterior part of the right half of the carapace shown in Coutière's figure, may be due to an incorrect interpretation of the artist, as these spines are not shown on the left side, are not mentioned in Coutière's description and are entirely absent in the present female.

A peculiar feature of the present species is the shape of the posterior margin of the telson. Kemp (1922) was doubtful whether a species with this type of telson could still be considered to belong to the subfamily Pontoniinae, in the species of which the posterior margin of the telson as a rule carries six movable spines: two short outer ones, two long and robust intermediate, and two rather long and slender inner spines. The posterior pair of movable lateral spinules found on the telson in the present species possibly is homologous with the outer pair of posterior spines found in most genera of Pontoniinae. The two long posterior teeth of *Coutierea*, not being movably connected to the telson, perhaps should be considered part of the telson and not homologous with one of the pairs of posterior spines found in normal Pontoniinae. Then evidently the inner and intermediate spines are absent in this genus. Since Kemp's (1922) publication on the Pontoniinae some new genera of this subfamily have been discovered, which likewise have a reduced

number of posterior spines on the telson, so the tip of the telson in *Hamopontonia* Bruce, 1970, shows some resemblance to that in *Coutierea*. There seems therefore no good reason not to assign *Coutierea* to the Pontoniinae.

Distribution. — The type locality of the species is off Barbados, West Indies, 13° 03'50"N 59° 37'05"W, depth 94 fathoms (= 172 m), bottom coral and broken shell. The type was collected there on 5 March 1879 by the "Blake" (Sta. 276). The present specimen was also collected in the Caribbean area (probably off the south coast of the Dominican Republic), but farther to the north; it probably was taken from a depth of 148 or 165 m, thus in one not very different from that of the type.

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