

II

CRUSTACEA PARASITICA

BY

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I. — PARASITICA COPEPODA

During the last cruise of the « *Mercator* » 1935-1936, Dr. W. Adam, Zoologist of the « Musée royal d'Histoire Naturelle de Belgique », at Brussels, as well as the physician of the « *Meractor* », V. Zaslavsky, who was very interested in the collecting of zoological material brought home a few specimens only of parasitic Copepoda, which however proved to be very interesting. Moreover Dr. L. Giltay handled over to me a fish belonging to the Genus *Myctophum*, collected during one of the former Cruises of the *Mercator* to the Marquesas, infested with a new species of *Cardiodectes*. Apart from this interesting new species, the present material contained 4 other species, 2 Argulids and 2 Caligids. From the Argulids one *Argulus multicolor* proved to be new to science. It was a gift to the Museum done by Dr. Hagmann (Para) tho whom the Museum also has to thank for the second Argulid *Dolops discoidalis* Bouvier. A thorough study of the last species and its relations with *Dolops striata* Bouvier, with which its was confounded by Cunningham was made. A similar gift of *Argulus multicolor* was made to the Museum by Mr. le Marquis de Wavrin (Caracas).

The Caligids were *Pandarus cranchii* Leach and *Perissopus communis* Rathbun var. *stimpsoni* Wilson, which I think sould better be considered as a valid species. So the collection of parasitic copepods although small turned out as a very important one.

FAMILY CALIGIDAE

Pandarus cranchii LEACH

10 ♀♀ from the skin of an undetermined shark. *Mercator*, 1-III-1936, 15 h. (11°08'N.-77°50'W.), off Columbian Coast.

Perissopus communis RATHBUN var. *stimpsoni* WILSON

2 ♀♀ on the pectoral of *Mustelus mustelus* (L) from South of Garnet Head, Pulpito-Bay (24°41'N.-14°51'W.), Rio de Oro.

There is some confusion I think in the naming of this species, which is far from seldom in the atlantic Coast of the United States and does occur likewise in California, whereas it was found to be common by Brian in Mauritania on *Mustelus asterias*.

In his revision of the *Pandarinae* and *Cecropinae* Wilson gives a very good figure of both female specimens of the *communis* type and the variety *stimpsoni*. One of the most obvious differences between type and variety is the incision of the genital segment. In the type it is rounded and rather broad, in the variety it is notched and more or less bifurcate.

In his book of the parasitic copepods of the Woods Hole region Wilson depicts the variety *stimpsoni*, which here he treats as if it were the type species. A closer examination of his description proves however undoubtedly that he had before him the variety.

In the revision of the *Pandarinae* Wilson emphasizes that type and variety differ in that the posterior borders of the dorsal plates are distinctly armed with spines in the type, whereas they should be smooth in the variety and in his paper on the Woods Hole Copepods we find that the dorsal plates of 2d and 4th segments of what was undoubtedly the variety are dentated, whereas the dorsal plates of the third segment are smooth. Brian gives no particulars that would allow us to say anything about the true nature of his specimens.

The present specimens undoubtedly belong to the variety and here as in Wilson's female of the Woods Hole vicinity the dorsal plates of the 2d and 4th segments are dentated, this dentition being only clearly visible under high magnification, so that it does not wonder that this dentition escaped Wilson during his first study.

The specimens at hand were rather large. One of the females was 5 mm long and 2,5 mm broad. The colour was creamyyellow. The shape of the flaps at each side of the incision was quite identical to that in the variety. I am however convinced, that a thorough comparison of type and variety will prove the variety to be a valid species.

FAMILY LERNAEIDAE

Cardiodectes frondosus nov. sp.

(Pl. I.)

1 ♀ on *Myctophum spinosum* (Steind.) Bay of Tui o Hué, Nukahiva (140°W.-8°58'S.).
Marquesas, Pacific.

Dimensions of the female in question: Cephalothorax, 2 mm; neck, 5 mm; trunk, 7,5 mm; Postabdomen or anal process, 1 mm. Total length of animal from tip to head till end of postabdomen about 15 mm.

In total until now 3 species of this Genus erected by Wilson have been described: 1 *Cardiodectes medusaeus* (Wilson); 2 *Cardiodectes bellotii* (Richiardi) and 3 *Cardiodectes rubosus* Leigh-Sharpe.

Cardiodectes medusaeus is best known of all and seems to have a rather wide geographical distribution if the identifications of the different authors are correct, which I have reason to doubt. Wilson found 2 females attached to the throat of *Nannobranchium leucopsarum* on the Pacific Coast. A third specimen was found in the throat of *Diaphus glanduliferus*.

Brian found a specimen of the same species in the mediterranean not so far from the street of Gibraltar on the throat of a specimen of *Myctophum affine* Luetken.

Finally Pesta says to have found a specimen of this species on *Scopelus mauritii* Steindacher in the neighbourhood of Mauritius, Indic.

Wilson as well as Brian have made a study of the head end of their specimens and from their figures as well as from their descriptions we may be rather sure that their identifications were correct. This cannot be said from the rather poor notices Pesta gives. He has not studied the head end and, leaving the parasite *in situ*, he was only able to measure the trunk which was 8 mm long.

The trunk of Wilson's female measured 7 mm, that of Brian's female 4,65 mm. Pesta's female missed the egg strings. About the finer structure of the postabdomen and of the surroundings of the egg strings nothing is known in respect with Pesta's female

So we remain in doubt of Pesta's female really belongs to the said species, which could only be concluded by renewed study of the excised animal. Then we likewise should be informed about the length of the neck, the structure of the frontal processes and so many other details which are essential for a correct identification.

Cardiodectes bellotii (Richiardi) was first found by Richiardi in the mediterranean, inserted in the branchial arterial stem of *Scopelus benoiti*. Jungersten says to have found numerous adult specimens of the same species on *Scopelus glacialis* and *Scopelus rafinesquii* in and close to the straits of Gibraltar. An excellent redescription of this species was given by Wilson after two of

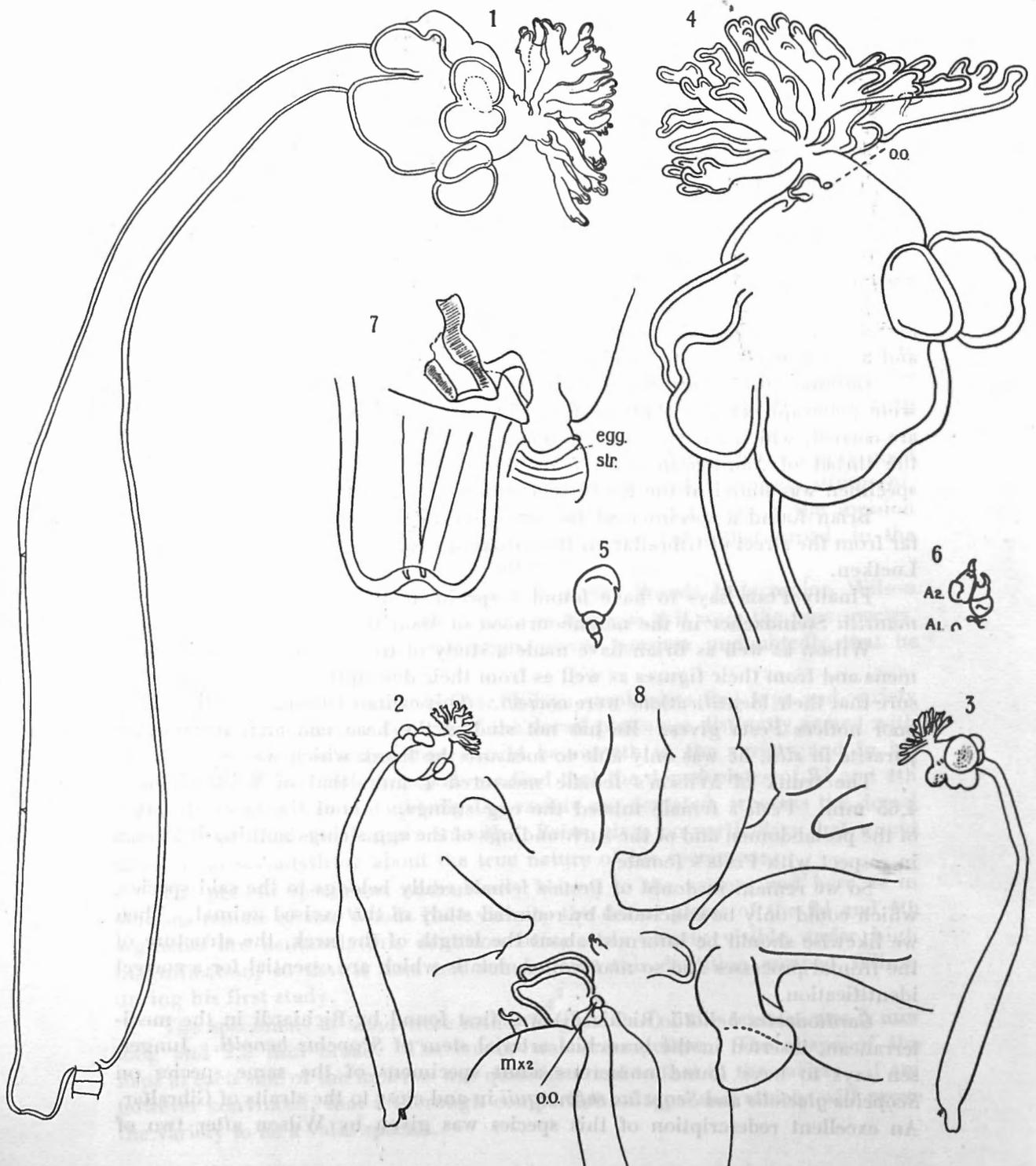
FIG. 1-8. — *Cardiodesmus frondosus* nov. sp.

FIG. 1. — Total view.

FIG. 2. — Total view.

FIG. 3. — Total view from the other side.

FIG. 4. — Headend of the same with oral opening (o.o.).

FIG. 5. — Maxilla II of the same.

FIG. 6. — Antennula (A₁) and Antenna (A₂) of the same.

FIG. 7. — Anal cone and basis of egg strings.

FIG. 8. — Situation of oral Cone (o.o.), oral flaps and maxillae.

Jungersen's females. The size of *C. bellotii* is not unlike that of *medusaeus*. Length of trunk 5 mm, length of head 2 mm. Total length not estimating the curves 6 mm, neck short. Postabdomen wanting. Frontal processes not in the shape of numerous short warts, but consisting of 2 sets of long and manifold bifurcated branches, projecting far in front of the head and like Wilson says resembling the fronds of *Fucus*.

The third species *C. rubosus* Leigh-Sharpe from an *Apogon* spec. collected on the Salamakië anchorage reef, by the *Siboga* expedition may at once be distinguished from the other species by its short cylindrical trunk, being 3 mm in length and 1 mm wide, its short, distinctly swollen neck and its 1 mm long head with two distinctly separated sets of rather short and branched frontal processes, leaving the ventral surface of the cephalothorax uncovered, thus giving a good opportunity to study the pereopods. At the posterior end of the trunk there the two small processes, of which the significance has not been discussed by Leigh-Sharpe.

I am not sure if I am able to read Leigh-Sharpe's figure correctly but after his figure it would seem to me that the oral opening is to be found just anteriorly to the neck, which would mean, that the oesophagus makes a bend, just like in representants of the Genus *Lernaeocera*, whereas the oral opening uses to be in the representants of the Genus *Cardiodectes* at the anterior end of the cephalothorax.

This point wants further elucidation, then if this should not be the case in the present species I doubt if we are allowed to bring the species of Leigh-Sharpe to the said genus.

The specimen studied by me most resembles *Cardiodectes bellotii* (Richiardi) when the frontal processes are considered, of which two sets are present, which together surround the oral cone. In figure 1 and 4 one of both sets has been removed. Here the oral cone is thus to be found in the anterior end of the cephalothorax. The shape of the cephalothorax and especially the balloon-shaped divided soft lateral horns remember of the figures Wilson gives from the corresponding parts of his *C. medusaeus*. Here they surround the cephalothorax like an absurdly shaped swimming girdle.

The same fits for the postabdomen, which is not almost wanting like in *bellotti*, but distinct in our species like in *medusaeus*. As for *C. bellotii* Wilson especially mentions that there are no lobes at the bases of the eggstrings, which are according to his figures present in *C. medusaeus* as well as in the present species (Fig. 7). As for the internal structure the ovaries proved to be much longer than in *medusaeus* and begin about at $1/3$ of the length of the trunk from the base of the egg strings. Thus here they are almost twice as long as in *C. medusaeus*. The post abdomen has the same shape as in *medusaeus* but is not curved backwards in the present species like in *medusaeus*. The very long neck as well as the much greater size of the animal separates the present form from all three other species known.

So the present species seems to be intermediate between *bellotii* and *medusaeus* having with both some features in common. It had penetrated the skin at the right side of its trunk, at the brink of the branchial cavity and found its way to the heart of the fish, and by the way of the throat like in *medusaeus*.

From the other details I have to mention that the oral cone is embraced by two minute flaps, which point backwards, which as far as I know does not occur in the other species (Fig. 5). The minute clawbearing maxillae (Fig. 5) were observed, like also the first and second antennae (Fig. 6) of which the latter are typical and bear distinct claws. The skin presents the usual pores especially distinctly to be seen in the region of the neck. The neck passes gradually towards the trunk, the latter being cylindrical elongate. Width of trunk 1,5 mm. Small furcal appendages to be seen near the anal opening (Fig. 7). Swimming legs could not be located with certainty.

The host in question was one of those deepsea fishes, which go in nighttime to more superficial layers of the sea and was captured meanwhile. I wonder which kind of intermediate host serves the development of the species of *Cardiodectes*, as well as the related *Lernaeenicus*. One should pay especially attention to the tropical flatfishes in research of the young of *Lernaeidae*. It certainly will be a promising attempt.

FAMILY ARGULIDAE

Argulus multicolor nov. sp.

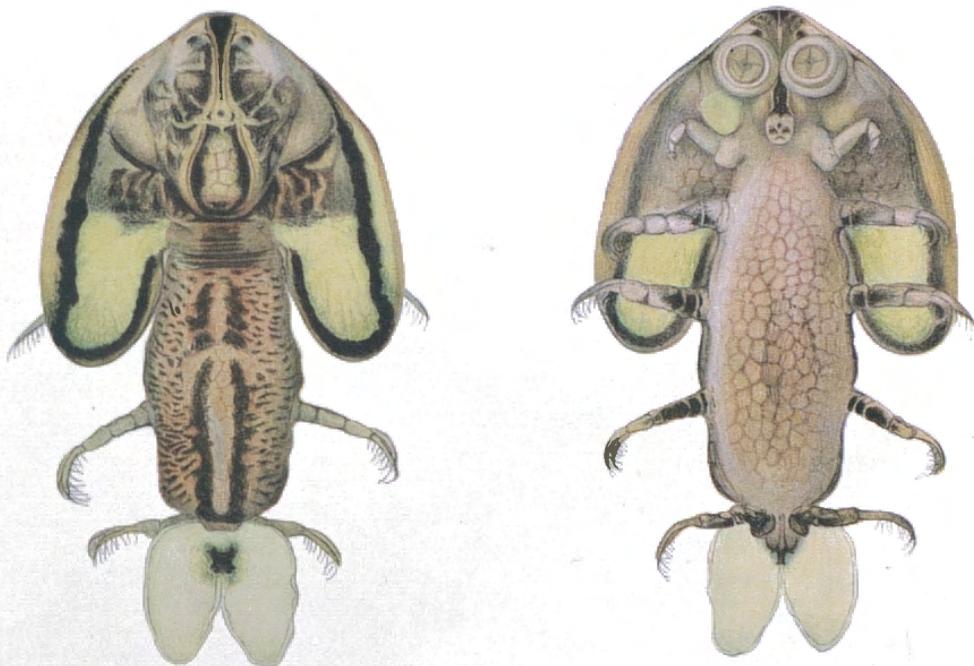
(Pl. II, textfig. 9-14.)

- 1 ♀ from unknown host Taperinha (Brazil), 14-XI-1935, Gift Dr. Hagmann (Para).
1 ♀ from unknown host Caracas (Venezuela), Gift by Mr. le Marquis de Wavrin.

The present species is a beautifully coloured animal (Plate II, fig. 1 and 2), the carapace of which is tinged pale green with a complicate pattern of velvety black stripes and patches. The free thorax is rustybrown with 2 submedian longitudinal black stripes and quite a system of marconigram-like stripes and points on the lateral borders of the dorsum. In *A. carteri* these longitudinal stripes are more widely separated. Abdomen snowwhite with a black patch round the anus. Total length of the female in question 10 mm, length of carapace 5 mm, width of carapace slightly surpassing 5 mm, length of abdomen 4 mm.

Carapace showing in its pattern rather great similarity to *Argulus carteri* Cunningham, shape almost orbicular, only slightly broader than it is long. Anterolateral depressions rather distinctly demarcated.

The area enclosed by the dorsal chitinous ribs is rather narrow and deep velvety black till just in front of the nauplius eye, which is situated in the centre of a whitish triangular area faintly tinged along the sides by black



Argulus multicolor nov. sp. × 10.

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outwardly curved bands along the sides, connected in front by a faint fine black stripe, behind by a broader stripe of black. Compound eyes comparatively small, situated near the foreborder of the carapace in the centre of whitish areas. Cephalic area of the carapace demarcated by a broken line, which runs transverse and is straight along the hindborder of the cephalon, whereas the course is slanting to the lateral borders of the carapace, the latter stripe being interrupted halfway by an inwardly pointing notch, which embraces an angle of almost 135 degrees, the latter filled up by black mottling. Not far from the lateral borders of the carapace each branch of this demarcationline meets the black band which surrounds the posterior lobes as well as a part of the frontal area of the carapace. The latter band ends halfway in front of the demarcationline of the cephalic area of the carapace. Thin areas of the cephalic portion of the carapace faintly tinged with irregular black spots.

The limit between the cephalothorax and the free thorax is not very sharp.

Posterior lobes of carapace connected with the thorax at a spot, which is demarcated by two distinct although rather narrow transverse lines of which the cephalic one of both only traverses the whole thorax, whereas the caudal is limited to the central portion of the dorsum. Apical from this transverse black stripe which connects the black bands running parallel to the posterior borders of the posterior lobes, there is a rather small portion of the thorax which is distinctly rustybrown and also possesses the same colour as the free thorax. In the centre of this region, to which on the ventral side the swimming legs of the second pair are attached two pairs of short transverse black parallel approaching stripes are to be found apart from quite a number of similar stripelets and dots as were said to be present on the free thorax.

Posterior lobes of carapace, rounded, slightly narrower to their tips, covering bases of first and second swimming legs, the latter pair being only slightly longer than the carapace is wide. Third and fourth pair of swimming legs uncovered and attached to the free thorax. Thus the lobes in this new species are shorter than in the allied species *carteri*. They are separated by a wide sinus — $\frac{2}{7}$ of the width of the carapace at the same level — with straight border.

Free thorax elongate rectangular, without distinct segmentation. An indication of segmentation may be seen in the interruption of the longitudinal black stripes, just in front of the legs of the third pair. Ova distinctly visible through the chitinous skin.

Abdomen almost orbicular, deeply incised posteriorly, this incision splitting up 0,27 of total length of the abdomen, surrounded at its apex by a black spot in the centre of which the anal furca, with its very short rounded appendages on the margin of the anal sinus is to be found.

The ventral side of the animal presents the following peculiarities.

There are no spines present on the ventral side of the carapace. Colour of ventral side mostly whitish except at the dorsal side of the oral cone and on

the bases of the swimming legs, which being whitish on the dorsum are tinged blackish on the ventral surface.

Suckers large, almost contiguous, whereas they are distinctly separated in *carteri*. Chitinous ribs of the suckers show a system of small and curved transverse lines (Fig. 10), alternating with short chitinous bars, the latter being pointed at their tips.

Antennulae comparatively large (Fig. 9, 13), their basal joint armed with spines, their apical joint of the same with a recurved spine at the tip and two short spines near the base. Palp of the antennulae 2-jointed. Antennae

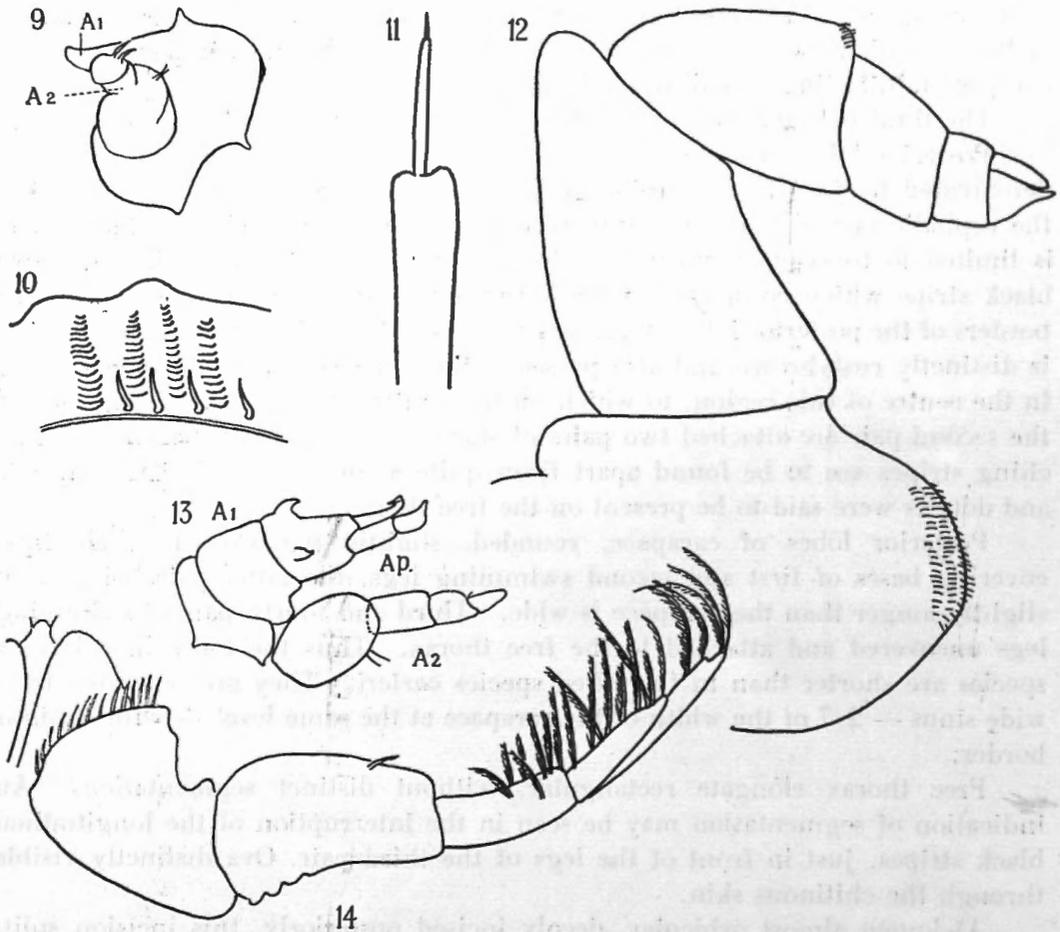


FIG. 9-14. — *Argulus multicolor* nov. sp.

FIG. 9. — Antennula and Antenna.

FIG. 10. — Internal border of sucker.

FIG. 11. — Oral stilet.

FIG. 12. — Maxillipeds II.

FIG. 13. — Antennula with palp (A₁, Ap) and Antenna (A₂).

FIG. 14. — Swimming leg of fourth pair.

4-jointed, with a couple of small setae at the distal side of the basal segment. Maxillipeds of the second pair (Fig. 12) not armed with spines of their basal joint. Dactylus of the same with claw.

Flagella present on the first two pairs of swimming legs. Basal segment of the 4th pair of legs with large median flaps almost meeting in the median line of ventral surface, these flaps tinged blackish (Fig. 19).

The black tinge on the ventral surface on the basal segments of the other legs is most developed on the basipods of the third pair of swimming legs, less so on those of the second pair and the least on the same parts of the first pair.

Discussion.

The present species is closely related with four other species of the same Genus, of which 3 are south american, whereas the fourth belongs to the african region. 1 *Argulus carteri* Cunningham (from Paraguay, 2 *Argulus ichesi* Bouvier (from Buenos Ayres, Argentina), 3 *Argulus violaceus* Thomsen (from Montevideo, Uruguay) and 4 *Argulus schoutedeni* Monod (from the belgian Congo). Further *A. elongatus* Heller, although not in the possession of posterior lobes to the carapace belongs as to my opinion to the same systematic group of species.

In order to avoid long and tiresome comparisons it seems to me the most easy to give the main characters of all species in question in a synoptic table.

TABLE I. — Group of species related to *Argulus multicolor*.

Species particulars	<i>multicolor</i>	<i>ichesi</i>	<i>carteri</i>	<i>violaceus</i>	<i>schoutedeni</i>	<i>elongatus</i>
Carapax.	Almost as wide as long, orbicular without spines on ventral surface.	Oval, longer than wide, spines on ventral surface.	Oval.	Oval, much longer than wide.	Orbicular, no spines on ventral surface.	Orbicular.
Posterior lobes of carapax.	Not reaching 3d pair of swimming legs, separated by a wide sinus with straight posterior border.	Not reaching 3d pair of legs sinus bordered by straight line.	Not reaching 3d legs, sinus narrow, basal line not straight.	Not reaching 3d legs, sinus narrow, basal line rounded.	Not reaching 3d pair of legs, separated by wide sinus with straight border.	None.
Suckers.	Large, contiguous.	Widely separated.	Distinctly separated.	Distinctly separated.	Distinctly separated.	Apparently separated.
Maxillipeds.	Without spines on basal segment.	With 3 teeth.	With 3 teeth.	With 3 teeth.	With 2 teeth.	Unarmed.
Flagella on first 2 pairs of swimming legs.	Present.	Absent.	Present.	Present.	Absent.	Absent.
Abdomen.	Almost as wide as long, deeply incised.	About 2 times as long as wide, incision shallow.	Longer than wide. Incision halfway.	Twice as long as wide, incision shallow.	Almost twice as long as wide, incision till half ways the base.	Split into 2 slips.

By the described particulars the new species is placed I think in the group of related species to which it belongs, whereas it is possible to demarcate it distinctly from its relatives.

Dolops discoidalis (BOUVIER)

(Fig. 15-18.)

2 ♂♂ and 2 ♀♀, ectoparasites from *Arapaima gigas* Cuv., Taperinha (Amazon, Brazil), 1-II-1934.

Like mentioned before the literature on the Genus *Dolops* is rather confusing, not only in respect to the species *Dolops discoidalis* and *D. striata* but also in respect with *D. kollari* Heller. Unfortunately most of the authors which have published their figures, either accompanied by a piece of text or not have not given themselves sufficient trouble to redescribe the species, on a morphological base, in order that future authors most of which have not types or meta-types to their disposition, should have more arguments for a correct identification than the former literature contains.

A critical comparison of Cunnington's beautiful photographs of the species this author considered to be *Dolops striata*, the fine sketches made by Bouvier in 1897 from the species he considered at that time to be identical with Hellers *Dolops kollari* with the specimens at hand makes it clear that all the specimens mentioned are conspecific. This may be concluded as well from the bodyshape as from the dorsal pattern of the carapace.

At the moment Bouvier compared his specimens for the first time with Hellers *Dolops kollari* and thought his specimens identical with that species, he made a very evident error, describing his specimens as in the possession of a carapace being longer than broad, whereas his figure distinctly shows that the reverse was true. Fortunately he gave himself the trouble of making a figure not only from the carapace with its pattern but, which proved to be of still greater importance of the antennae and antennulae.

In 1899 Bouvier himself recognised his error and in a footnote, which has evidently escaped the attention of Wilson, since we do not find this quoted in his revision of the *Argulidae*. Bouvier states that a new comparison of his specimens with those of Heller brought him to the conviction, that his specimens ought to be considered as to belong to a new species which he then calls *D. discoidalis*, whereas he remarks at the same time that he was in error describing the carapace of his specimens as longer than broad, whereas it was in reality broader than long, like a view on his figure distinctly proves. Now it is also clear that the figures Bouvier gave were not taken after the original specimens of Heller, which until now was not certain as for the antennae, the comparative length of which gives us the clue for the identification of the species in question.

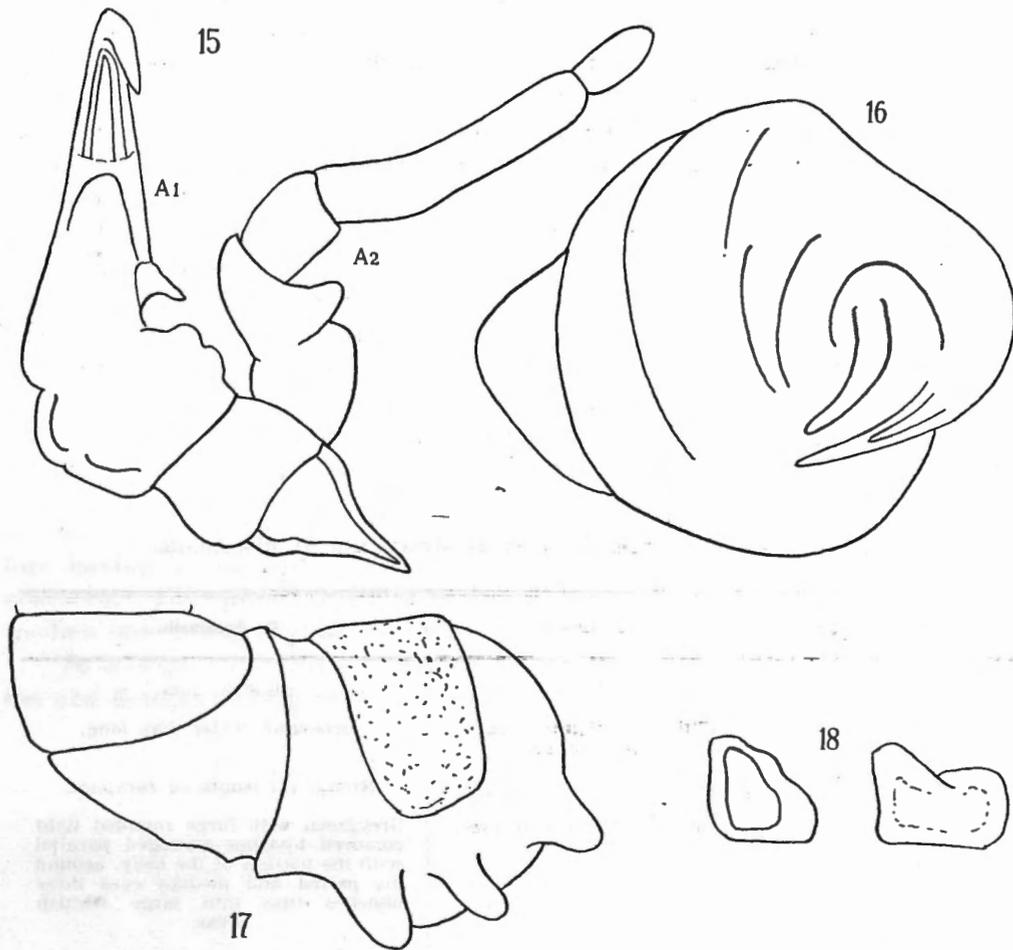


FIG. 15-18. — *Dolops discoidalis* (BOUVIER)

FIG. 15. — Antennula (A₁) and Antenna (A₂).

FIG. 16. — Chela of maxillipeds I.

FIG. 17. — Basal portion of maxilliped II.

FIG. 18. — Set of spines on ventral surface of thorax.

Now Moreira. His figure of a specimen *in toto* (of which nothing is stated as to the sex to which it belongs) is rather inadequate and far from beautiful. When the bodyshape alone is taken into consideration it seems not improbable that Moreira's specimen should belong to the same species as that of Bouvier, Cunningham and my own specimens. Moreira is of the opinion that Bouvier's *Dolops kollari* is identical with his species and again his species with *D. discoidalis*. The latter conclusion however must be taken in doubt like a comparison of the antennae and antennulae of Moreira's specimens with those of Bouvier

learns. In Bouvier's female like in the males and females I had to my disposition the penultimate antennal joint is much longer, almost 4 times as long, as the ultimate joint whereas the penultimate joint in Moreira's specimen, — we again are in doubt if he had depicted the antennae of a female or a male —, is at the utmost twice as long as the ultimate joint, Moreover the tooth at the base of the antenna of Moreira's specimen bears a blunt mamillated tooth, whereas it is sharply pointed as well in the female of Bouvier as in our specimen, and thirdly both basal antennal joints in Bouvier's specimens and ours are comparatively short and thick, much shorter than the same joints in Moreira's specimen. So it is rather sure that Bouvier's, Cunningham's specimens, of which however nothing is known as to the comparative length of the antennal joints, as well as the present specimens belong to *Dolops discoidalis*, whereas the true position of Moreira's *Dolops discoidalis* remains uncertain. That Cunningham's specimens have nothing to do with *Dolops striata* is at once obvious if we bring together the features of both *D. striata* and *D. discoidalis* in a synoptic table.

TABLE II. — Differences between *D. striata* and *D. discoidalis*.

Species particulars	<i>D. striata</i>	<i>D. discoidalis</i>
Size.	6-7 mm.	11.8-14.2 mm.
Carapace.	Elliptical, slightly longer than broad.	Orbicular, wider than long.
Posterior sinus.		Broad, 1/3 length of carapace.
Colour.	Green, marbled with blue.	Greygreen with large rounded light coloured blotches arranged parallel with the margin of the body, around the paired and median eyes these blotches fuse into large whitish areas.
Flagella.	?	On the first 2 pairs of swimming legs, fully developed.
Swimming legs.	Surpassing in length the lateral borders of the carapax.	Reaching just to the borders of the same, posterior pair with large flaps at each joint of the basipod, largest on first joint, bootshaped.
Maxillipeds I.	With very small protuberances opposite to claw.	Two portions of chelae which terminate each first maxilla are of about the same size, each stiffened with chitin.
Maxillipeds II.	Exterior of the 3 teeth larger than other 2.	Blunt, widely separated.
Spines on ventral surface and a little posterior to them.	Very large as wide as they are long, with broad squarely cut tips.	?
Abdomen.	Triangular with well rounded sides.	Short and small, about orbicular.

Our specimens as well as those of Cunnington almost quite answer to the description of *D. discoidalis*. In both the carapace is orbicular, being wider than long. The largest female at hand was in the possession of a carapace which was 8 mm long and 9 mm wide, total length of the animal 10,5 mm. Length of abdomen 3 mm, its width 4 mm, incision 1,75 mm. deep. Largest ♂ total length 14 mm, length of carapace 10 mm, width 11 mm, length of abdomen 4,5 mm, width of the same 5 mm, incision 2 mm deep. Other ♂ with a carapace of 10 mm length and 11 mm width, abdomen 3 mm long. Cunnington's ♀ presents carapacial proportions which are quite identical since length of carapace : width of the same = 41 : 47. He himself points to the fact that the largest of his females measured 13 mm, length of the carapace 10,2 mm, width of the same 11,2 mm. The distribution of the spines on the ventral surface of our specimens is almost identical to that of the female depicted by Cunnington.

The only difference the present specimens show with the description given by Wilson is that in the specimens studied by me both portions of chela (Fig. 16) are not equally stiffened with chitin, one being strongly chitinised and therefore having a yellowish colour, the other having a weak skin, quite white coloured. The spines to the 2d maxillae are not quite of the same size, the median ones being slightly larger in size than the other ones.

So it is quite obvious that the specimens in question like those of Cunnington and Bouvier belong to the species *Dolops discoidalis*.

Brussels, 6 July 1936.

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- North American parasitic Copepods belonging to the *Lernaeidae* with a revision of the entire family. (*Ibidem*, 53, 1-150, 1913.)

II. — PARASITIC ISOPODS

The material of the « *Mercator* » contains a few parasitic isopods only, but nevertheless the few specimens brought home were of the utmost importance in so far that the assumption of Monod, Richardson, Nierstrasz, that the so-called *Aegathoa*-species are young males of species of *Anilocra*, *Livoneca*, *Nerocila* and other could be with certainly proved for a representant of the latter Genus.

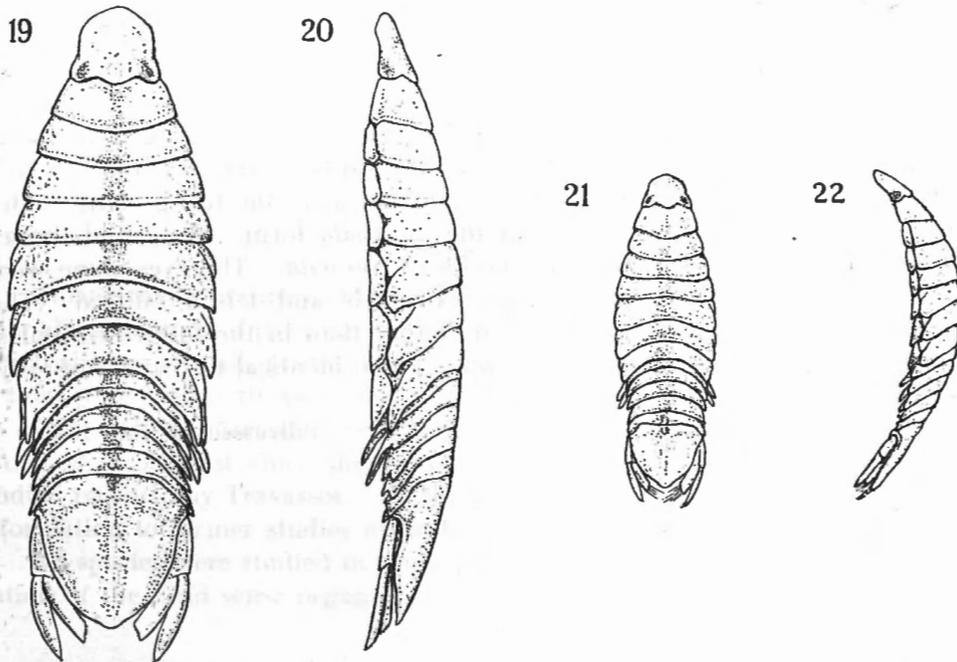


FIG. 19. — Fullgrown ♂ of *Nerocila orbignyi maculata*.

FIG. 20. — Idem seen on side.

FIG. 21. — Young male of the same (*Aegathoa*-stage).

FIG. 22. — Idem seen on side.

The « *Mercator* » material contained a young male, which after the key of Richardson ought to be a species of *Aegathoa*, and to all appearance a new species of the said Genus.

Before consulting the literature a comparison of this young male with fullgrown males and females of a *Nerocila*-species of the same locality but from another kind of host I thought the young and small sized male might eventually be a larval stage of the same species as to which the large specimens belonged, and a thorough comparison of this male individual with the larger specimens

proved that my first impression was correct and that this male individual which after the ciliation of telson and uropods should be an *Aegathoa* in reality was nothing else as a young *Nerocila orbignyi* forma *maculata*, like identified by Monod in his study on some Isopods of Cameroon and Congo 1931.

Nerocila orbignyi maculata MONOD 1930

(Fig. 19-22.)

4 ♀♀ and 2 ♂♂ on *Pagrus auratus* (L), South of Garnet Head (Rio de Oro), 30-X-1935, the females measured 30 × 14 mm., 28 × 14 mm., 30 × 14 mm., 30 × 14 mm. the males measured both 22 × 9 mm.

The young male of *Aegathoa* type was 13 mm long, same locality, 1-XI-1935 caught on a *Lophius*, pectoral fin.

The appendices masculinae were already present. Like in fullgrown males there were 8 joints to the antennulae and 11 joints to the antennae of this *Aegathoa*-stage of *Nerocila orbignyi*. Coxal plates as in the full grown. Sides of 5th thoracal segment rounded as in the *maculata* form. Head and thorax fitting into each other as in the said species of *Nerocila*. The eyes alone were comparatively larger than in the type. Uropods and telson ciliated. The interior branch of the exopods is distinctly larger than in the fullgrown males. spade-shaped, obliquely truncated at its tip. Pleon identical to that of *orbignyi maculata*.

Brussels, 8. July 1936.