

formés affines, à téguments très calcifiés et à segment IV non seulement court mais considérablement dilaté transversalement et aplati dorso-ventralement : parmi les formes que j'ai personnellement étudiées appartiennent certainement au genre *Arcturella* : *A. dilatata*, *A. senegalensis*, *A. Dollfusi*.

23. *Arcturina rhomboidalis* KÖHLER

1911 *Arcturina rhomboidalis* KÖHLER, 55-65, figs. 30-34.

Hab. — 1 ex., « Vanneau », station XLV.

Distrib. — L'espèce n'a encore été rencontrée qu'une seule fois, et la localité type (17°2', lat. N., 18°59' L. 9 W.) est beaucoup plus méridionale, se trouvant sur la côte de Mauritanie, un peu au Nord de Saint-Louis-du-Sénégal. Peut-être s'agit-il d'un élément faunistique tropical qui possède au Maroc la limite septentrionale de son aire de dispersion?

Remarques. — La physionomie générale de l'espèce est tellement caractéristique qu'aucune erreur de détermination n'est ici possible. Mon échantillon concorde, en tous points, avec la consciencieuse description de KÖHLER.

APPENDICE

Mon collègue, le Dr W.-M. TATTERSALL, à la compétence carcinologique duquel j'ai déjà plusieurs fois eu recours en des cas difficiles, a bien voulu décrire deux espèces rapportées par moi de Mauritanie et joindre à sa note de remarquables dessins ; je suis heureux de pouvoir ici lui en exprimer toute ma gratitude.

NEW TANAIIDACEA AND ISOPODA from the WEST COAST OF AFRICA

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During his recent expeditions to the French colonies in West Africa for the purpose of making observations on and collections of the marine fauna, M. Theodore MONOD obtained species of *Apseudes* and *Astacilla* which appear to be new to science. M. MONOD was kind enough to submit these to me for examination, and descriptions and figures of the new forms are presented herewith. My cordial thanks are due to M. MONOD for his kindness in permitting me to report on these interesting additions for the fauna of West Africa.

Order TANAIDACEA

Family **Apseuididae***Genus Apseudes*, Leach

Apseudes africanus, sp. nov. [Figs. 1-6]. — The general form and sculpture of the body may best be described by reference to the figure (Fig. 1) of an immature female, drawn from the dorsal surface. The cephalothorax has a short transverse somewhat, deep groove on the median dorsal surface, nearer to the posterior margin than to the anterior end, from each side of which two shallow oblique grooves proceed, one to the eyelobe forward, and one to the postero-lateral corner backward, the whole system of grooves forming a flattened X pattern; lateral lobes of the carapace behind the eyes rounded and not spiniform.

Rostrum triangular in dorsal view with a blunt apex; in lateral view somewhat deflexed with a roundly blunted point; no trace of a rostral spine.

Eyes well developed, pigment black.

Thoracic somites without lateral processes.

Abdominal somites with the pleura truncate and not spiniform, beset with a few scattered setae only; sixth somite about equal in length to the preceding three somites.

Epistome with a prominent median forwardly directed and somewhat upcurved spine in both sexes.

In the ♂ the sterna of the second, third and fourth true thoracic somites bear median, ventral, forwardly directed spines. Similar spines are present in the ♀ on the second and third true thoracic somites, though they are smaller than in the ♂, while on the fourth somite the spine is represented by a median tubercle.

The ♀ carries four pairs of incubatory lamellae attached to the third to the sixth thoracic limbs.

In both sexes there is a three-jointed exopod attached to the second and third thoracic limbs.

Antennules as long as the cephalothorax and the first free thoracic somite combined, measured from the apex of the rostrum in the mid dorsal line; first joint of the peduncle three times as long as the second, without serrations on the inner margins; outer flagellum as long as the peduncle with 19-22 joints; inner flagellum with 12-14 joints.

Antennae with the peduncle as long as the first joint of the peduncle of the antennules; flagellum with 18 joints; scale extending nearly to the end of the peduncle.

Chelipeds (second thoracic limbs) in the ♀ (Fig. 3) moderately slender; second joint less than three times as long as broad, with a single spine on the posterior margin near the centre; ischium with the inner margin at least as long as that of the carpus, both joints somewhat slender; chela three and a half times as long as broad, shorter than the carpus, posterior margin almost straight; movable finger equal in length to the front margin of the hand; fixed finger blunter than the movable finger, with a large number of setae on the outer margin, a tuft of setae at the apex and shorter setae on the inner margin.

Chelipeds in the ♂ (Figs. 4-5) much more robust than in the ♀, the joints on the whole somewhat shorter but considerably more massive; the chela is particularly massive and only about twice as long as broad; the movable finger has one very large and blunt tooth proximal to the centre and two smaller teeth, one proximal to the large tooth and the other near the distal end; the fixed finger has a prominent blunt tooth near the apex and a second near the base; the chela is provided with a large number of setae on the lower margin and numerous short setae on the inner edge.

Third thoracic limbs (Fig. 6) robust, with the coxal joint triangular and produced forwards as a spiniform process; second joint with a spine on the lower distal angle; fourth joint with a single short blunt spine on the lower distal angle; fifth joint slightly longer than the sixth, with two stout spines on the lower margin and a similar spine at the distal angle of the upper margin; sixth joint with three spines on the lower and two on the upper margin; dactylus shorter than the sixth joint.

Uropods exceedingly long, about two thirds of the length of the body; peduncle short, about one third of the telson in length; inner branch about three times as long as the outer, with about 66-70 joints; outer branch with 22-24 joints.

Length of adult ♂♂ and ♀♀: 9 mm.

Locality: « S. s. Boula », 4 th. croisière, two mature and two immature ♂♂, one mature and one immature ♀♀.

This species belongs to that group of the genus characterised by the almost complete obsolescence of the rostral spine, the rostral plate being broadly triangular in dorsal view, with the apex bluntly rounded, traces of a minute rostral spine being present in many species.

In this group, *A. africanus* belongs to the section of species with a prominent spine on the epistome. The species included in this section are certainly *A. talpa* (Mont.), *A. tenuimanus*, G. O. Sars, *A. hibernicus*, A. O. Walker and *A. robustus*, G. O. Sars, and probably others in which the character of the epistome is not mentioned in descriptions.

A. africanus may be distinguished from *A. talpa* by the complete absence of rostral spine, by the truncate pleura of the abdominal somites, by the absence of serrations on the antennules and antennae and by their longer flagella, by the longer branches of the uropods and by the absence of an ischial spine on the chélipeds of the ♀.

From *A. tenuimanus*, *A. africanus* may be distinguished by the smooth lateral margins of the thoracic somites and the truncate pleura of the abdominal somites, by the longer uropods and by the different form of the chelipeds of the ♂, as well as by other minor details.

A. africanus differs from *A. hibernicus* in the presence of spines on the sterna of the anterior somites of the thorax, in the absence of plumose setae on the thorax and particularly on the abdomen which in *A. hibernicus* is densely clothed with hairs, in the absence of granulations on the inner margin of the first joint of the antennular peduncle, in the longer flagella of the antennules and antennae, in the longer branches of the uropods, in the absence of a tooth on the fixed finger of the cheliped in the ♀ and in the blunter and more robust spines on the third thoracic limb.

A. africanus approaches most closely to *A. robustus*, G. O. Sars and may possibly be identical with this species which is rather imperfectly known. It differs, however, as far as can be seen from Sars' figures, in the complete absence of the rostral spine, in the slenderer and more feebly armed cheliped of the ♀, which also has a dense mass of setae on them and absent in *A. robustus*, in the much shorter and stouter spines on the third thoracic limb and in the longer flagella to both pairs of antennae. The uropods of *A. robustus* are unknown, as is also the form of the cheliped in the ♂.

The outstanding features of *A. africanus* are

- (1) The epistomal spine.
- (2) The ventral spines on the anterior thoracic somites.
- (3) The form of the rostrum and the absence of any trace of rostral spine.
- (4) The form of the chelipeds in both sexes.
- (5) The form of the third thoracic limbs.
- (6) The truncate pleura of the abdomen.
- (7) The absence of any extensive covering of hairs, particularly on the abdomen.
- (8) The long flagella to both antennae.
- (9) The extreme length of the uropods.

Order ISOPODA

Tribe *Valvifera*Family **Astacillidae**Genus *Astacilla*, Cordiner

Astacilla Monodi, sp. nov. [Pl. XVIII-XIX, figs. 7-13] ♀ (fig. 8). — Head with two pairs of tubercles, anterior pair small and rounded, posterior pair the larger, more raised and compressed than the anterior pair, triangular in lateral view with the apex of the triangle directed forwards.

First three free thoracic somites raised in the mid-dorsal line into low median compressed tubercles.

Fourth free thoracic somite equal to one third of the body in length with the median anterior dorsal portion raised into a relatively enormous boss of conical shape with the apex of the cone directed slightly forward; a much smaller but very prominent boss on the median posterior border; lateral margins of the somite expanded into somewhat prominent wings both anteriorly and posteriorly

♂. — (Fig. 7). Tubercles of the head and first three free thoracic somites practically obsolete.

Fourth free thoracic somite longer than that part of the body which precedes it and equal to the last three thoracic somites together with the abdomen, about three times as long as broad, cylindrical in shape, widest and deepest at about one third of its length from the anterior end; a low keeled tubercle on the dorsal surface near the posterior margin and a much smaller one laterally; anterior and posterior wings much less prominent than in the ♀.

Fifth thoracic somite with a few small scattered tubercles on its dorsal and lateral surfaces.

In both sexes the coxal plates are clearly recognisable and very prominent but seem to be fused with their segments. Three abdominal somites are clearly marked off in addition to the telson, the third segment projects laterally while there is a similar lateral projection on the abdomen nearer to the apex so that it has a dorsal outline as shown in fig. 9.

Antennules equal to, if anything slightly longer than, the first two joints of the antennal peduncle; flagellum about equal to the last two joints of the peduncle, with five or six olfactory filaments in the ♀ and about fourteen in the ♂.

Antennae in the ♀ not as long as the body, third joint of the peduncle twice as long as the second, fourth joint nearly twice as long as the third, fifth joint slightly shorter than the fourth, flagellum (fig. 10)

about one third of the length of the last joint of the peduncle, two-jointed. In the ♂ the antennae are rather more slender and elongate than in the ♀, especially the fourth joint of the peduncle. The inner faces of the third and fourth joints of the peduncle of the ♂ bear a row of prominent tubercles which are tipped by one or two setae. Traces of these tubercles are present in the ♀ but they are neither so numerous nor so prominent. They are just visible in lateral view on the third joint but not on the fourth.

Maxilliped with one masticatory process.

Second thoracic limb (Fig. 11) very similar to the same appendage in *A. longicornis* except that the sixth joint is of equal width throughout and not expanded and there are no setae on the outer face of the merus. The appendage is much more setose than in the genus *Arcturella* as figured by Sars, though in that genus the sixth joint is linear and not expanded.

Third to fifth thoracic limbs exactly as in *Astacilla longicornis* and not at all like those figured by Sars for *Arcturella*.

Sixth to eighth thoracic limbs (Fig. 12) comparatively short and stout, the ischium and merus both densely covered by short setae, particularly on the hind margin and surface, the other joints much less densely setose, dactylus markedly bi-unguiculate with a further small tubercle on the proximal portion of the inner margin.

Pleopod one of the ♂ (Fig. 13) with the inner ramus curiously constricted in the proximal portion, three long plumose setae on the face of the ramus inside the constriction; five coupling hooks on the inner margin of the basal joint.

Pleopod two of the ♂ with the copulatory style longer than the rami, bifid at the apex, the two apical spines short compared with those in *A. longicornis*.

Penial filament of the ♂ single and bluntly pointed; no appendage or processes on the sternum of either the third or fifth free thoracic segments.

Length of an adult ♂, 12 mm.; of an adult ♀: 10.5 mm.

Colour pale with a prominent black transverse band across the head and the posterior half of the abdomen.

Localities: Région du Cap Blanc, 1924, one ♂, 10 mm.

Mauritanie, Sept. 1924, one ♀, 7 mm.

« S. s. Boula », 3rd. Croisière, August 1923, on Gorgonians, four ♂♂, one adult ♀, two immature ♀♀ (TYPES).

The small ♀ from Mauritanie has the tubercles and bosses more pronounced than in the type specimen, but identical in position.

Two ♀♀, 8 mm., from « Boula », one taken in May 1923 on a Plumularian and the other in August 1923 on a Gorgonian, appear to belong to this species but differ in being without tubercles, and the anterior boss on the fourth free thoracic somite has the outline in lateral view, characteristic of the ♂, i. e. it is practically obsolete and the posterior one completely so. The specimens agree in their other characters with the types but the differences in the tubercles and bosses is so pronounced that I hesitate to refer them definitely to this species.

A. Monodi is clearly an *Astacilla* in all its characters and if the absence of processes on the third or fifth free thoracic somites is diagnostic then it must certainly be referred to that genus. The body has the form most generally associated with *Arcturella* or *Arctopsis* but the appendages, especially the third to the fifth thoracic limbs and even the second thoracic limb are more of the *Astacilla* type.

It is most closely allied to *A. Bocagei*, NOBRE, but differs in the larger size of the anterior boss of the fourth free thoracic somite and in its relative position, being nearer to the anterior end of the somite, in the presence of marked lateral expansions of this somite both anteriorly and posteriorly (apparently absent in *A. Bocagei*), in the presence of four tubercles on the head (there are only three in *A. Bocagei*, a median anterior and a posterior pair, and they are much more developed than in *A. Monodi*), and in the bi-unguiculate character of the three posterior thoracic limbs which in *A. Bocagei* have a simple dactylus, to judge by the figures given by NOBRE. *A. Bocagei* has the abdomen shaped exactly as in *A. Monodi* and is undeniably very closely allied to this species and to *A. mediterranea* of KOEHLER. Future research may establish its identity with one or the other of these species.

I take pleasure in associating this species with the name of M. Theodore MONOD, to whose kindness I am indebted for the opportunity of examining and describing these two interesting Isopods found by him during his valuable work on the African coast.

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EXPLICATION DES PLANCHES

- PL. IV. — A-B. *Apseudopsis hastifrons*. — A. Aspect dorsal. — B. Extrémité du « Grabfuss ».
C-D *Apseudopsis acutifrons*. — C. Aspect dorsal. — D. Extrémité du « Grabfuss ».
- PL. V. — *Parapseudes latifrons*. — A. Chélipède ♂. — B. « Grabfuss ».
- PL. VI. — A. *Strongylurella indivisa*. — B. *Apseudes hibernicus* (Ile de Batz, Finistère), telson. — C. *Apseudes talpa* (Maroc), telson. — D. *Parapseudes latifrons* ♂.
- PL. VII. — A-B. *Apseudes africanus*. — A. Antenne. — B. Antennule. — C. *Astacilla Deshayesi* ♀, flagellum antennaire. — D. *Astacilla gorgonophila* ♀, flagellum antennaire.
- PL. VIII. — *Paratanais* sp. ? — A. Partie antérieure du céphalon. — B. Chélipède. — C. Péréiopode 1. — D. Péréiopode 6. — E. Uropode droit.
- PL. IX. — *Cyathura eremophila*. — A. Antennule et antenne. — B. Gnathopode. — C. Telson et statocystes. — D. Extrémité de la branche inférieure (recouverte) de l'uropode. — E. Branche supérieure (recouvrante) de l'uropode.
- PL. X. — *Cyathura Liouvillei*. — A. Céphalon ♂. — B. Gnathopode. — C. Péréiopode 2. — D. Péréiopode 6. — E. Pléon, telson, uropode droit et statocystes.

- PL. XI. — *Cyathura Liouvillei*. — A. Antennule ♀. — B. Antenne ♀. — C. Mandibule. — D-E. Deux aspects du tranchant mandibulaire. — F. Palpe mandibulaire. — G. Maxillule. — H. Maxillipède. — I. Complexe post-maxillulaire. — J. Extrémité de la branche inférieure (recouverte) d'un uropode. — K. Uropode, branche supérieure (recouvrante).
- PL. XII. — *Arcturella senegalensis*. — A. Vue latérale, ♀. — B. Pléon et pléotelson.
- PL. XIII. — A-B. *Arcturella Dollfusi*. — A. Aspect dorsal, ♀. — B. Face sternale des somites péréiaux, antérieurs ♂, avec l'appendice mâle, *p*. — C. *Astacilla Deshayesi* ♂, appendice mâle, *p*, à la face sternale du somite péréial III. — D. *Astacilla gorgonophila* ♀, lame operculaire de l'uropode. — E. *Astacilla Deshayesi* ♀, lame operculaire de l'uropode. — F. *Apseudes africanus*, uropodes.
- PL. XIV. — *Astacilla gorgonophila*. — A. ♀, aspect dorsal. — B. La même, aspect latéral. — C. ♂, pléotelson, face dorsale.
- PL. XV. — A-C-F. *Astacilla Deshayesi*. — A. ♀, aspect dorsal. — B. ♂, pléotelson. — C. ♂, antennule. — F. ♂, pléopode I.
D-E, G-H. *Astacilla gorgonophila*. — D. ♂, antennule. — E. ♀, antennule. — G. ♂, pléopode I. — H. ♂, pléopode II.
- PL. XVI. — A-C. *Astacilla Deshayesi*. — A. ♂, antenne. — B. ♂, région antérieure du corps. — C. péréiopode I.
D-F. *Astacilla gorgonophila*. — D. ♂, antenne. — E. ♂, région antérieure du corps. — F. Péréiopode I.

APPENDICE

PLANCHE XVII

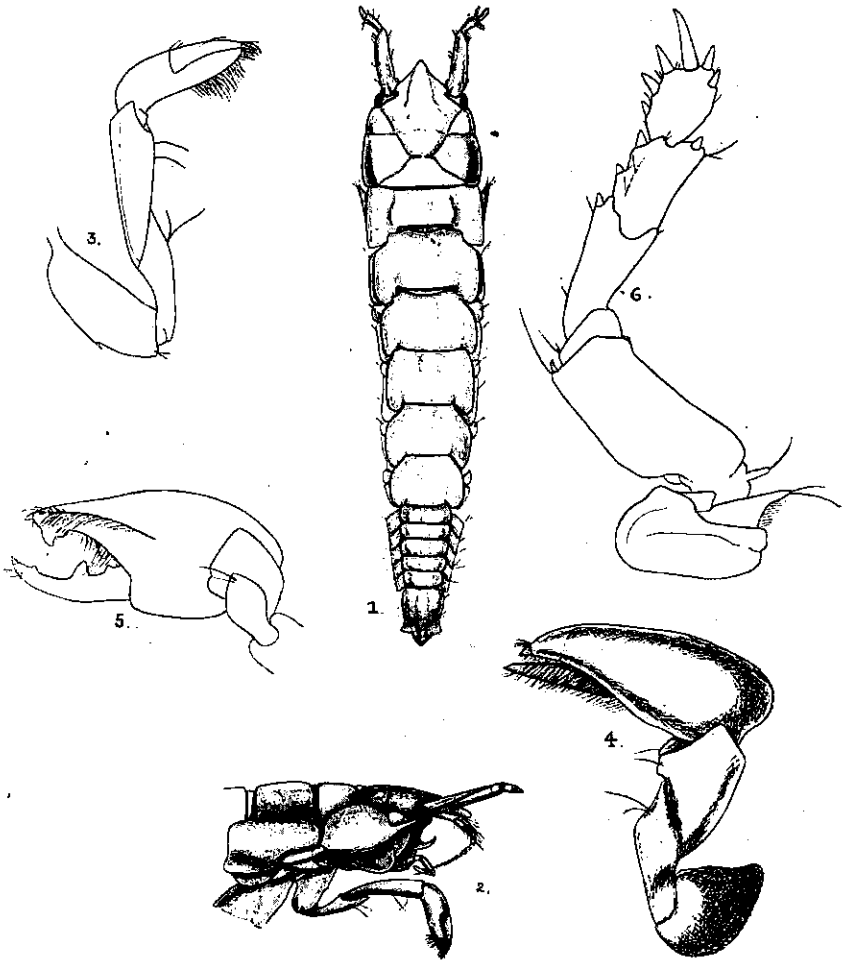
- Fig. 1. — *Apseudes africanus*, sp. nov. Dorsal view of ♀. × 12.
— 2. — — Lateral view of anterior end of same ♀. × 12.
— 3. — — Cheliped of ♀. × 12.
— 4. — — Cheliped of ♂. × 12.
— 5. — — Cheliped of ♂, hand viewed from the inner face. × 32.
— 6. — — Third thoracic limb. × 32.

PLANCHE XVIII

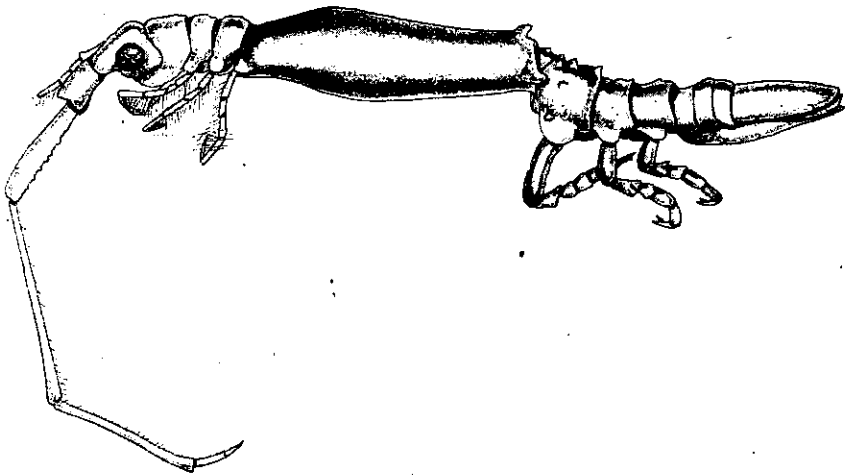
- 7. — *Astacilla Monodi*, sp. nov. ♂, lateral view. × 12.
— 8. — — ♀, lateral view. × 12.
— 9. — — Outline, dorsal view, of abdomen. × 12.

PLANCHE XIX

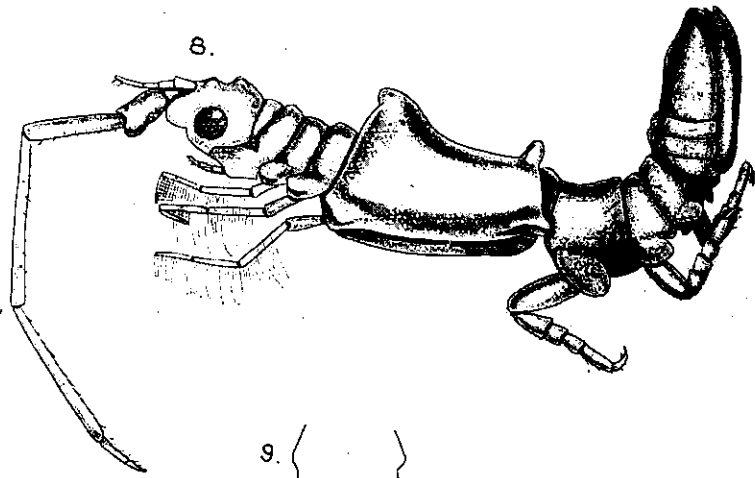
- 10. — — Flagellum of antenna.
— 11. — — Second thoracic limb.
— 12. — — Eighth thoracic limb.
— 13. — — First pleopod of the ♂.



7.



8.



9.

