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THE GENUS WATOBIOUS.

BY RALPH V. CHAMBERLIN.

WITH TWO PLATES.

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No. 3.— *The Genus Watobius.*

BY RALPH V. CHAMBERLIN.

THE genus *Watobius*, at present known to occur only in the south-eastern United States, presents various structural features rendering it of particular interest. In the complete absence of true articular spines from all the legs it is like the *Henicopidae*; but that it is clearly different from other members of this family appears from the following important characters which it presents:—

1. The eyes are composed of several ocelli.
2. The outer branch of the first maxilla is biarticulate.
3. The sternite of the prehensorial segment is absent, no transverse ventral sclerite or collar being developed.
4. Anal pores are not present in the adult.
5. The gonopods of the male are small, consisting of but a single reduced article.

In addition, it may be mentioned that the claw of the female gonopods is tripartite, whereas in all the *Henicopidae* it is entire.

The conspicuous modification of the penult and anal legs in the male seems not to be paralleled by any similar secondary sexual development in the *Henicopidae* unless it be that the genus *Marcianella* of Attems properly belongs in this family, where it is placed by its author, the type species of the genus, indeed, having been originally described under *Lamyctes*. However, in the published accounts no direct information is given in regard to such important characters as the mouthparts, the anal pores, or the gonopods; and as the published diagnosis of the genus reveals agreement with *Watobius* in its more marked and distinctive features otherwise, one is tempted to query whether the two genera do not belong close together. That they are not identical is apparent from the statement made in the original description of *M. triops*, the genotype of *Marcianella*, that the first leg-bearing segment has a stigma, that only a single accessory claw is present on the legs, and that none of the dorsal plates are produced at their caudal angles. Certainly, the agreement in a combination of characters like the absence of articular spines from the legs, the presence of a tibial spine in place of the spur of the *Henicopidae*, the presence of several pairs of ocelli, and the modification of the last two pairs of legs in the male, is justification for a suspicion that

further agreement may appear when we have additional knowledge of *Marcianella*. To be sure Attems states that in points not specified in his diagnosis *Marcianella* agrees with *Lamyctes*; but we must remain quite uncertain as to the ground this statement covers. It will be advantageous to reproduce the original accounts of *Marcianella* and its type species.

MARCIANELLA ATTEMES.

Schulze's Forschungsreise im west-u. zent. Südafrika, 1909, 2, p. 12.

Jederseits 3 ocellen.

20-21 Antennenglieder.

Alle Rückenschilde hinten abgerundet.

Tarsus der 1-13. Beinpaare einfach, des 14. und 15. Paares zweigliedrig. Am Ende des 5. Gliedes des 1.-12. Beinpaars ein langes Dorn.

Nur eine Nebenkralle vorhanden.

Die 2 letzten Beinpaare des ♂ stark verdickt.

In allen übrigen Punkten mit *Lamyctes* übereinstimmend.

Genotype.— *M. triops* Attems.

MARCIANELLA TRIOPS Attems.

Lamyctes triops Zool. jahrb., syst. theil, 1908, 26, p. 186.

Farbe: Kopfschild und Dorsalseite des Hinterendes röthlichgelb, der übrige Körper samt Antennen blassgelb.

Länge 4.5 mm.

20-21 Antennenglieder, die mit schütterten Borstenquirlen versehen sind.

2 × 2 Kieferhüftzähne; die Mittelkerbe ziemlich tief und rund, die Zähnen mittelkräftig. Jederseits 3 schwarze Ocellen, von denen der mittlere der grösste ist.

Kopfschild länger als breit, hinten gerade abgeschnitten, seitlich gewölbt, vorn abgerundet.

Rückenschilde hinten alle völlig abgerundet, der Hinterrand des 10. und 12. unmerklich eingebuchtet. Die Ränder der Rückenschilde mit kräftigen zerstreuten Borsten.

Ventralplatten mit spärlichen, winzigen Härchen. Alle Beine ganz ohne Dornen aber mit wenigen kräftigen Borsten. 14. und 15. Beinpaar recht stark verdickt, Endbeine mit sehr kleiner Nebenkralle. 1, 1, 2, 2, kreisrunde Hüftporen.

Das 1. beintragende Segment hat ein Stigma; die Tarsen der Beinpaare 1-13 sind einfach, die der 14. und 15. Beinpaare 2 gliedrig.

Locality.— Island of Elba.

Watobius stands rather widely separated from the other known genera of the *Lithobioidea* in a number of important characters, whence it has seemed advisable to place it in a separate family, the *Watobiidae*.

The following definition of the family is drawn from the single genus; but so far as concerns the positively stated characters of *Marcianella*, this genus also complies with the definition. Should *Marcianella*, however, prove ultimately to be a true henicopid, its parallelism with *Watobius* in these characters will be truly interesting.

WATOBIIDAE Chamberlin.

Watobiinae Chamberlin, Bull. M. C. Z., 1912, 57, p. 4.

Labrum mesally deeply incised and bearing the usual large conical median tooth; lateral teeth but weakly developed; (margins of lateral divisions glabrous). Outer branch of first maxillae biarticulate, bearing plumose hairs on mesal surface, but the inner branch, so far as known, bearing almost exclusively simple hairs, in the type genus a single plumose hair appearing at the distal end.

Palpus of second maxillae triarticulate, the distal article bearing plumose hairs over nearly entire length of ventral surface.

Articular spines absent from all legs as in the typical Henicopidae; but a stout spine occurring on tibia at distal end on the anterior side of all but the posterior pairs of legs, this being in the place occupied by the tibial spur in the Henicopidae.

Anal and penult legs modified in the male.

Gonopods of male small, uniarticulate. Anal pores absent in the adult.

WATOBIUS CHAMBERLIN.

Ann. ent. soc. America, 1911, 4, p. 35.

The median tooth of labrum acute and set in a deep incision as usual, the lateral tooth on each side being set off by a narrow and shallow incision, inconspicuous. Edges of lateral pieces glabrous (in type species). (Plate 1, fig. 3).

Palpi of second maxillae with the claw divided as usual. Its distal article bearing over nearly entire length of ventral surface plumose hairs similar to those of *Lamyctes*, there being a stouter, smooth, cylindrical base and a slender plumose distal filament, or there may be two or more filaments on a single base. (Plate 1, fig. 5).

Inner branch of first maxillae clothed almost exclusively with simple hairs, there being (in the type species) but a single plumose hair, this being born at the apex. Outer branch bearing plumose hairs on mesal surface.

Mandibles bearing four sets of plates set obliquely, each plate being tridentate, the tooth toward the convex side being smallest; at the cephalic corner a lower chitinous elevation. About eight pectinate aciculi are present. There is a row of plumose hairs closely applied to surface on the convex side a little proximad of the base of dental plates. (Plate 1, fig. 4).

Eyes consisting of a patch of ocelli on each side.

Organ of Tömösvary small; situated between ocelli and base of antennae on ventral side of head. (Plate 1, fig. 2).

Antennae short; consisting of near twenty articles.

Prosternal teeth 2+2. Prosternal spine, at base of outer tooth, hair-like. (Plate 1, fig. 6).

No spiracle on first leg-bearing segment.

(Posterior angles of ninth, eleventh, and thirteenth dorsal plates, in type, produced).

First fourteen pairs of legs with two accessory claws.

Tarsi of anterior legs indistinctly biarticulate, a chitinous hinge not at all developed. Anterior legs with tibial spine. (Plate 2, fig. 2).

Coxal pores present on last four pairs of coxae, few, small, in a single series.

Claw of female gonopods tripartite; basal spines 2+2. (Plate 2, fig. 6). Second joint glabrous dorsally as in *Lamyctes*, etc.

Gonopods of male very small, wart-like. (Plate 2, fig. 5).

TYPE.—*W. anderisus* Chamberlin.

WATOBIOUS ANDERISUS Chamberlin.

Ann. ent. soc. America, 1911, 4, p. 35, pl. 3, fig. 4, 5.

DESCRIPTION.—Dorsum brown, the caudal segments often darker.

Head and prehensorial feet conspicuously darker, deep brown or brownish black. Antennae brown, pale distad. Legs light brown, the posterior pairs having a purplish tinge; the anal and penult pairs abruptly pale, yellow to almost white, distad of the femur, the tibiae of the penult legs being especially light. A purplish or violet pigment existing in the deeper tissues diffuses in alcoholic specimens, tinging the various tissues and coloring the alcohol.

Body strongly attenuated cephalad and caudad from the tenth leg-bearing segment. In the male the body is 7.25 or less times longer than the width of the tenth dorsal plate; but the female appears to be more slender the body being about 7.7 times longer

than the width of the tenth plate. The body is sparsely clothed with short and mostly stout bristles or setae which are rather longer on the head, and also longer and more numerous on the legs, which have fewer fine hairs intermingled; the bristles of the tarsi distinctly more slender than those of the proximal segments.

Head clearly longer than wide (41:37); widest at the level of the eyes, with the sides caudad of this moderately converging and only weakly curved; cephalad rounding strongly mesocephalad to the relatively wide anterior margin between the antennae; caudal margin nearly straight, being a little incurved mesally and becoming weakly convex toward the rounded corners.

Antennae short, being close to one third the length of the body; composed of from 20 to 22 articles of which the proximal ones are long, the second being longest, the articles decreasing regularly in length and thickness from the second distad, the ultimate article acuminate.

Eyes composed mostly of nine ocelli, consisting of a large single ocellus in the caudal position and of eight smaller ones in three series; thus, 1+3, 3, 2. Organ of Tömösvary small, circular in outline, lying between eye patch and base of antenna.

Prosternum about 1.6 times wider than long. Anterior border produced well forward, laterally rounded. Mesal incision wide, semicircular in outline or nearly straight at bottom. Teeth 2+2, conical, subequal, light brown in color; line of bases and of apices recurved. (Plate 1, fig. 6). Chitinous lines fine, complete.

Dorsal plates low, but weakly convex; wide, the edges extending out free from the body laterally; lateral and caudal margins somewhat elevate, most plates broadly and shallowly depressed transversely near middle of length, much roughened by numerous, irregular longitudinal rugae. Posterior angles of the ninth, eleventh, and thirteenth dorsal plates produced. Posterior angles of the first, third, and fifth plates strongly rounded; the caudal margin of the eighth straight, bent a little obliquely at each end; posterior angles of sixth and seventh a little extended but well rounded; caudal margins of tenth and twelfth plates truncate, not bent at ends. Caudal margin of second and fourth plates convex at middle, incurving each side and then a little bent caudad at ends, the angles appearing very slightly produced caudad but well rounded.

Most ventral plates distinctly depressed in a line parallel with and a little removed from each lateral margin and on the more caudal plates also with two more mesal sulci parallel with the submarginal ones; plates also depressed in a broad band transversely, the caudal



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