

NEW GENERA OF NORTH AMERICAN LITHOBIIDÆ.

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In a study of the North American species of the Lithobiidæ that fall into the old genus *Bothropolys* as originally defined by Wood—that is, all those species having the coxal pores, in several series the writer finds that they compose in reality two clearly separated groups of generic value. In addition a third genus, represented by a species here described for the first time, is found, which, while evidently close to the other two in some features, differs from them in having the coxal pores arranged in but a single series. Diagnosis of these genera are herewith given together with those of other genera.

Genus *Bothropolys* Wood (emended).

Head margined continuously from the caudal end cephalad to the eyes on each side, the lateral margin not broken. Prosternum with a well chitinated spine on or near the anterior margin at each ectal angle; prosternal teeth more or less uniformly spaced with no diastema separating them into two groups on each side. Gonopods of the male consisting of a single undivided article. Basal spines of the gonopods of the female $2 + 2$. Anal legs with the tarsal claw single; penult legs with the tarsal claw armed at base with a single small or sometimes obsolete spine or accessory claw, or this sometimes quite absent. Coxal pores in several series. (Coxæ of last two pairs of legs armed each with a stout ventral spine.)

Type.—*B. multidentatus* (Newport).

In addition to the type, *B. hople*s Brolemann and *B. permundus* Chamberlin belong in this genus.

Genus *Ethopolys* gen. nov.

Lateral margination of head ending abruptly about one-third the distance forward from the caudal edge, each lateral margin being distinctly broken—that is, rectangularly bent in at this level. A wider interval of diastema separating an ectal group of from 1 to 4 prosternal teeth on each side from an inner larger group, a slender, often more or less bristle-tipped spine, occurring in the diastema, but none at the ectal angle. Gonopods of the male distinctly biarticulate. Basal spines of the gonopods of the female $3 + 3$. Tarsal claw of anal legs with a very small spine or accessory claw at base; the claw of penult legs with two accessory claws. Coxal pores in several series. (Coxæ of last two pairs of legs each armed with a stout ventral spine).

Type.—*E. xanti* (Wood).

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In addition to the type *sierravagus* Chamberlin, *E. pusio* Stuxberg, and *E. bipunctatus* (Wood) belong to this genus, as does probably also the doubtful species *E. monticola* of Stuxberg, which I formerly have regarded as probably the same as *sierravagus* but which agrees rather better with adult *pusio*, a species which Stuxberg based on a very young and immature specimen, though differing according to the published description from either.

Genus *Zinapolys* gen. nov.

Each lateral margin of the head distinctly broken a little in front of caudal third of its length as in the preceding genus. Prosternal spine immediately caudal of the ectal prosternal tooth on each side; prosternal teeth large and uniformly spaced, no diastema separating them on each side into two groups. Gonopods of male distinctly biarticulate. Basal spines of gonopods of female 6 + 6. Claws of legs, especially of the more caudal pairs, long and rather slender, all with two accessory claws. Coxal pores in a single series on each coxa of the last four pairs of legs. (Coxæ of the last two pairs of legs each armed with a stout ventral spine).

Type.—*Z. zipius* sp. nov.

The type is the only species of the genus thus far known.

Zinapolys zipius sp. nov.

Antennæ short, composed of 20 articles; the articles beyond the large second one of moderate length, becoming shorter proximad of the ultimate; hairs clothing the articles usually long, mostly oblique to surface; not very dense. Eyes composed of about twenty ocelli arranged in four series, eg. 1 + 5, 5, 4 (3). The single ocellus not very large. Organ of Tomosvary large, exceeding an ocellus, well removed from the eye-patch. Prosternal teeth 6 + 6-7 + 7, the most ectal on each side largest; the others decreasing from this one to the mesal incision. Spine moderately stout at base but apically long and bristle-like. Angles of none of the dorsal plates produced. Gonopods of male distinctly biarticulate, the distal article much narrower than the proximal; subconic, pale. Claw of gonopods of female entire, curved, deeply hollowed out on ventral side. Basal spines 6 + 6, mostly thickest at middle, being acuminate distad and somewhat narrower at base. Coxal pores circular to transversely subelliptic, moderately large and distinct; 4, 4 (5), 5, 5. Spining of legs: first to seventh, $\frac{0,0,3,2,2}{0,0,2,3,2}$; eighth to eleventh, $\frac{0,0,3,2,2}{0,0,3,3,2}$; twelfth and thirteenth, $\frac{1,0,3,2,2}{0,1,3,3,2}$; penult, $\frac{1,0,3,1,1}{1,1,3,3,2}$ and 1, $\frac{1,0,3,1,0}{1,1,3,3,1(2)}$. All legs terminating in three claws. Last two pairs of coxæ armed laterally as well as ventrally and dorsally.

Original coloration somewhat uncertain because of long preservation of specimens in too weak alcohol, but apparently ferrugino-testaceous with the legs and venter more yellowish, and the caudal ventral plates and legs and the prosternum and head darker; antennæ darker than legs but somewhat paler than head. Length 17–20 mm.

Locality.—Kooteno Co., Idaho.

Genus *Paitobius* gen. nov.

Head as in *Lithobius*, as also are the mouth-parts, nearly. Coxosternum of second maxillæ with narrow median membranous strip which is thin and bent dorsally. Prosternum bearing uniformly 2 + 2 teeth of which the inner one on each side is always borne conspicuously farther forward than the outer, the line tangent to apices of teeth curving cephalad from sides to middle, i.e., being procurved. Spine at ectal angle bristle-like apically. Anterior margin narrow, the lateral slope beginning almost directly from ectal tooth. Antennæ always short, consisting of from 27 to 35 articles. Coxal pores uniseriate, circular. (Last two pairs of coxæ laterally armed). Penult legs always armed with two claws; and legs also armed with two claws (excepting in *naiwatus*). Dorsal spines of anal legs always 1,0,3,1,0; of penult, 1,0,3,1,0 to 1,0,3,2,1. Anal and penult legs always short and distinctly furrowed longitudinally along dorsal surface of third to fifth articles; furrow more distinct on third article and especially in the male in which this article is wider or more crassate than in the female. Gonopods of male small, conical, directed caudo-ectad and nearly always wholly concealed by the sternite. Gonopods of female with the claw always distinctly partite, three lobes being typically present or rarely one of these almost obliterated. Basal spines rather slender and acuminate from base, distad. Body of adults always showing a deeper violaceous or purplish or reddish-purple pigment, modifying the coloration, more or less, of entire body; and in preserved specimens, at least, distinctly colouring especially the muscles. Anal legs always dark, proximally with the tibiæ and tarsi conspicuously paler, usually yellow. The head and dorsum smooth and shining, never rugose. (In all known species the 9th, 11th and 13th, of 6th, 7th, 9th, 11th and 13th, or of 7th, 9th, 11th and 13th dorsal plates with posterior angles produced.)

Type.—*P. carolinæ* Chamberlin.

Distribution.—The South-eastern States.

In addition to the type, the genus includes the following species: *naiwatus* Chamberlin, *tabius* Chamberlin, *juventus* Bollman, and *simitus* Chamberlin.

The genus, which is compact, can readily be detected by the character of the prosternal teeth.

Genus *Taiyubius* gen. nov.

This genus is very close to the preceding, but the species composing it may always be at once distinguished by the characters of the prosternum, the teeth of which are the same in number but differ in not having the inner teeth borne far forward, and in having the axis of each of the latter directed somewhat mesad of directly cephalad, with the line tangent to apices of teeth curving caudad from the sides mesad, i.e., this line clearly recurved. Antennæ short, or very short, consisting of from 26 to 39 articles. Posterior coxæ either entirely unarmed laterally or with each one of last pair or of last two pairs with a weakly developed spine which is often difficult to detect. Anal legs always with two claws; penult with two or three. Dorsal spines of anal legs, 1,0,3,1,0; of penult, 1,0,3,1,1. Anal and penult legs very nearly as in *Paitobius*. Gonopods nearly as in *Paitobius*, but basal spines characteristically much broader and wider near middle of length. Pigmentation much as in preceding genus. In known species posterior angles of 9th, 11th, and 13th dorsal plates produced.

Type.—*T. angelus* Chamberlin.

Distribution.—Western United States.

Other species belonging to this genus in addition to the type are *satanus* Chamberlin, *harriela* Chamberlin, and *purpureus* Chamberlin.

Genus *Sonibius* gen. nov.

Related to the two preceding genera which it replaces in the north central section of the country. The prosternal teeth small and subequal, 2 + 2 or 3 + 3 in number, with the line of their spaces recurved.

Readily distinguished from the preceding two genera in having the short antennæ composed normally of but twenty articles which are relatively long, whereas in *Paitobius* and *Taiyubius* they are mostly very short and crowded. Last two or three pairs of coxæ laterally armed, last four or five pairs dorsally armed. Anal legs armed with two or three claws as are also the penult, the number being mostly three. Dorsal spines of anal legs 1,0,3,1,0; of penult and 13th always 1,0,3,1,1. Gonopods of female with claw partite. Basal spines characteristically short and broad. Adults not showing the peculiar reddish-purple pigment in deeper tissues manifest in *Paitobius* and *Taiyubius*. Dorsum always smooth and shining. In known species posterior angles of 9th, 11th, and 13th dorsal plates produced.

Type.—*S. bius* Chamberlin.

Distribution.—North Central United States.

Besides the type, other species known to belong to this group are *politus* McNeil, *numius* Chamberlin, and *yanikans*, sp. nov.

Arenotini

Most of the species of the Lithobiidae known from Central America and from Mexico compose a group which may be designated as the Arenobini. Among other features all have the gonopods of the male, although large and prominent, composed of but a single article and the claw of the gonopods of the female wholly undivided, with basal spines $2 + 2$, large and stout, and the basal article with inner sides strongly chitinized and conspicuously excavated toward base. The dorsal spines of the anal legs from 1,0,3,2,1(0) to 1,0,3,2,2; of the penult always 1,0,3,2,2 in the female, and either the same or 1,0,3,2,1 in the male. Excepting the new genus *Sotimpus*, proposed for *Lithobius macroceros* and *L. decodontos* of Pocock, the prosternal teeth are $2 + 2$ in number with the ectal spine in many species stout and tooth-like. In *Sotimpus*, which will not be further discussed here, the prosternal teeth number $5 + 5$ or $6 + 6$ and the ectal spines are bristle-like.

Genus *Arenobius* gen. nov.

Body conspicuously attenuated, cephalad with first dorsal plate narrower than the third. Dorsum smooth and shining, especially the first plate and the head. Prosternal teeth $2 + 2$ with in most the spines stout and dentiform or more rarely these slender and bristle-like (only in Subgenus *Sititius*). Antennae short to medium, occasionally equalling half the length of the body; composed mostly of from 25 to 60 articles. Coxal pores uniseriate, circular or a little transversely elongate. With one exception the anal legs are armed with two or three claws. Dorsal spines of the anal legs 1,0,3,2,1 normally, occasionally varying in individual cases to 1,0,3,2,0 or 1,0,3,1,1; dorsal spines of penult legs in females always 1,0,3,2,2; in males nearly always 1,0,3,2,1, rarely the same as in female (frequently so in immature stages). With few exceptions both the anal and the penult legs are conspicuously modified in the male, the tibiae of both bearing special lobes, furrows or bunches of hair; more rarely with the penult legs normal and with the first tarsal joint specially modified. Gonopods of female with claw large, strongly curved and entire; basal spines $2 + 2$, stout; first joint with distal and inner edges strongly chitinized, excavated on mesal side toward base, leaving between the two a broadly

triangular space with apex distad. Gonopods of male rather large and conspicuously exposed, but undivided.

Type.—*A. manegitus* Chamberlin.

Distribution.—From Colorado to the South-eastern States, and southward through Mexico to Central America.

In the United States, besides the type species, occur three other known species which differ from the type in having the ectal spines slender and apically bristle-like as well as in the character of the lobe on the penult legs of male. They may be placed in a separate sub-genus *Sibibius*. The species of this sub-genus are *coloradanus* sp. nov., *mississippiensis* sp. nov., and probably *ædipes* Bollman. Composing a new sub-genus *Kunobius* are the two species *pontifex* and *humberti* of Pocock, which differ in having the penult legs of male not at all modified while the first tarsal joint of the anal legs is very strongly enlarged, the tibiæ being specially modified as well. Both these species are from Province Guerrero, Mexico. The species *stolli* Pocock from Guatemala, differs from all other species of the genus in having all the dorsal plates with posterior margins straight, none of the angles being produced, and, according to the original description, in having the claw of the anal legs single. It may be placed in a subgenus *Sowubius*. Other Mexican and Central American species apparently belonging to *Arenobius* are the following: *godmani*, *salvini*, and *vulcani* of Pocock and *sontus* sp. nov., a rather aberrant species described below.

(To be continued.)

MEETINGS OF THE MONTREAL BRANCH.

Meeting Jan. 9th, 1912.—At the residence of Mr. H. H. Lyman, 11 members present. Mr. G. A. Southee in the chair. Mr. Lyman read a paper entitled "Further Notes on Types in the British Museum."

Mr. H. F. Wolley Dod, of Calgary, Alta., gave an interesting account of his visit to some of the U. S. collections of Lepidoptera. He referred particularly to those of Dr. J. B. Smith at New Brunswick, N. J.; the U. S. National Museum at Washington; the Strecker collection at Chicago, and that of Dr. Wm. Barnes at Decatur, Ill.

Discussion followed on the various methods of collecting Noctuids.

Specimens of the genus *Xylina* were exhibited, representing about 25 North American species.

Meeting Feb. 10th.—At the residence of Mr. G. Chagnon; 6 members present. Mr. Southee in the chair.



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