

to 3.3 cm. wide, acute or acuminate, acutely cuneate at base, depressed-serrate (teeth 4 to 8 pairs), thin, evenly but not densely uncinat-hirsutulous on both sides, evenly tuberculate-hispid on surface above, hispid chiefly on the veins beneath, triplinerved well above the base, green on both sides; branch leaves smaller; heads solitary in the forks of the stem and at tips of branches, in flower slender, about 6 mm. wide, in fruit hemispheric, about 1 cm. wide; peduncles slender, pubescent like the stem, 1 to 5 cm. long; disk in anthesis 7 mm. high, 3 mm. thick; involucre 2-seriate, obgraduate or subequal, 6 to 8 mm. high, the phyllaries few (about 6), the outer lanceolate or narrowly oblong-lanceolate, 1.5 to 2 mm. wide, obtuse or acutish, herbaceous for the upper half of their length, pale and usually 1-ribbed below, erect, pubescent like the stem and hispid-ciliate, the inner similar but usually shorter and broader, with shorter usually acute herbaceous tips; rays 3 to 5, fertile, orange yellow, the lamina suborbicular, 3 to 3.5 mm. long, 2.8 to 3 mm. wide, bilobate with sometimes bidentate lobes, densely hirsutulous on back on the two chief nerves; disk flowers about 5 to 7, orange yellow, puberulous and ciliolate on the teeth and with a puberulous ring at base of throat. 3.8 to 4.5 mm. long (tube tubular-funnelform, 1.5 to 2 mm., throat funnelform, 1.5 to 1.8 mm., teeth ovate, 0.7 mm.); pales scarious, obtuse, wing-keeled to below the apex, 7 mm. long; ray achenes (with wings included) broadly oval-obovate, 5.5 mm. long, 3.5 to 4 mm. wide, the wings about 1 mm. wide, short-ciliate and erose, prolonged above the achene as rounded ears, not adnate to the pappus cup, often purplish-spotted, the body of achene obovoid, obcompressed, 4 mm. long, 1.5 mm. wide, blackish, tuberculate-hispidulous especially on midline, with a conspicuous callous appendage on each face at base; pappus a short-stipitate, lacerate, squanellaceous corona about 1.5 mm. high (including the neck), and 1 to 3 awns 2 mm. high or less, or the latter sometimes obsolete; disk achenes similar but compressed, the pappus awns 2, unequal, 1 to 1.5 mm. long.

Type in the U. S. National Herbarium, no. 1,139,183, collected in sand along a stream, near Armenia, Department of Sonsonate, Salvador, April 18, 1922, by Paul C. Standley (no. 23498).

OTHER SPECIMENS EXAMINED: SALVADOR: In hedgerow, vicinity of San Salvador, altitude 650 to 850 meters, December 20, 1921, to January 4, 1922, *Standley* 19414. Wet soil along stream, vicinity of San Salvador, March 30 to April 24, 1922, *Standley* 23300. Wet thicket, vicinity of Santa Emilia, Department of Sonsonate, altitude 135 meters, March 22 to 25, 1922, *Standley* 22259.

Among North American species *Zexmenia iners* is nearest *Z. hispida* (H.B.K.) A. Gray and *Z. longipes* Benth., from both of which it differs in its annual root, smaller heads on much shorter peduncles, and tiny, roundish rays. *Z. rudis* Baker of Brazil, the only annual species of the genus hitherto known, is more closely related to *Z. iners*, but has considerably larger leaves and rays.

ENTOMOLOGY.—*New genera and species of sucking lice.* H. E.

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In this paper are described four new genera and three new species of Anoplura, or sucking lice. The material upon which these genera

and species are based is a part of the collection of sucking lice of the United States National Museum, and in this museum the types are catalogued and deposited.

Proenderleinellus, gen. nov.

Second abdominal segment not provided with a pair of ventral tubercle-bearing plates. Number of pairs of abdominal pleural plates seven. Antennae without any tooth-like processes; and head without paired plates situated on ventral surface between the antennae. First and second pairs of legs subequal and smaller than the last pair. Tibiae of first and second legs broadened distally and tarsi of the same legs broadened proximally, thus forming with the claws, clasping structures; first and second tarsal claws simple. Parameres of male genitalia long, arm-like.

Type of genus: Proenderleinellus africanus, new species.

This genus is related to *Hoplopleura* Enderlein on the one hand and to *Microphthirus* Ferris and *Enderleinellus* Fahrenholz on the other. Only the type species is included.

Proenderleinellus africanus, sp. nov.

Forehead fully twice as broad as long; postantennal region of head about as broad as long and with two pairs of dorsal setae, an anterior, minute pair just behind the antennae and a large posterior pair at the posterior angles. Antennae about as long as head; second segment the longest. Thorax with two pairs of dorsal setae, a small, very short, spine-like pair just inside and slightly in front of the thoracic spiracles and a very large, long, curved pair just inside and slightly posterior of the spiracles. Anterior process, or manubrium, of sternum with parallel sides; sternum also with a posterior process extending between the posterior coxae. Abdomen with a lateral area both above and below without setae and between this lateral area and the pleurae on each typical abdominal segment are situated two setae. Typical pleural plates with two small, pectinate, posterior lateral lobes, and between them are situated the two, large, subequal, straight pleural setae. In typical pleural plates the stigmata is situated near the posterior margin. Genital armature of male with broad, parallel-sided, distally emarginate basal plate; long curved parameres; and stout, heavily chitinated pseudopenis. Posterior legs considerably enlarged, but not enormous, their expanded claws simple. Length of male, 1.42 mm.; width of male, 0.57 mm.

Type host and type locality: From Thryonomys gregor pusillus (U.S.N.M. 184180), taken at Majiya-Chumvi, British East Africa.

Type.—Cat. No. 23760, U.S.N.M.

Description based on a single male, but it is a perfect specimen.

Pterophthirus, gen. nov.

Antennae without lateral processes and essentially the same in the two sexes. Typically each abdominal segment of female provided dorsally with three transverse rows of setae. Second sternal plate of abdomen not divided medially into two large rounded plates. Second pair of pleural plates not lobed, but enormous and wing-like and each bearing the small, spine-like pleural setae near its dorsal margin.

Type of genus: Hoplopleura alata Ferris.

This genus is established for the reception of the peculiar Octodont infesting species, *Hoplopleura alata* Ferris and *H. audax* Ferris. The great modification of the second pair of pleural plates, not so much in size but in type, is the outstanding feature in this genus. This modification has resulted in the peculiar shifting of the position of the pleural setae so that they have become dorso-marginal.

***Eulinognathus americanus*, sp. nov.**

Forehead very short and cone-shaped; postantennal region of head as broad as long. Antennae equal to the head in length; first segment broader than long, second segment of about equal breadth and length. Thorax about as broad as long; sternum without anterior process between first coxae but with a posterior process which extends between the third coxae for a part of its length. Abdomen much longer than broad. Typical pleural plates with spiracular opening slightly in front of the middle, with two cusp-like posterior lobes and short, stumpy, truncate pleural setae, scarcely half as long as the pleural plates themselves. Abdominal setae curved near their bases, flattened and parallel-sided beyond and truncate distally, each being about as long as the abdominal segment on which it is situated. Gonopods of female short and stumpy and with a few spinous setae. Second legs intermediate between first and third. Claw of third leg neither toothed or appendiculate. Length of female 0.95 mm.; width of female 0.39 mm.

Type host and type locality: From *Ctenomys brasiliensis* (Cat. No. 3252, 1939 U.S.N.M.) taken at Salade River, Paraguay.

Type.—Cat. No. 23761, U.S.N.M.

The genus to which this species belongs has been represented in the past by only two species, one of which came from a host of the rodent family Pedetidae and the other from the rodent family Dipodidae. The host of the new species here described belongs to the rodent family Octodontidae. Only a single female specimen taken.

***Phthirpediculus*, gen. nov.**

Antennae long and distinctly five-segmented. Thorax and abdomen distinctly separated; segments two, three and four of abdomen distinct and bearing its pair of spiracles in the normal lateral position; abdomen with well developed pleural plates on segments three to eight and without lateral lobes. Typical abdominal segments provided with a single transverse row of setae both above and below. Genital armature of male with a basal plate composed of two distally united, parallel rods; with large, more or less blade-like parameres; and with conspicuous, heavily chitinized pseudopenis. First pair of legs very small, the other two pairs much enlarged; all legs attached to thorax in a ventro-lateral position.

Type of genus: *Phthirpediculus propithecii*, new species.

This genus, represented only by the new species here described, is intermediate between *Pediculus* Linnaeus and *Phthirus* Leach, having the long abdomen with pleural plates as in *Pediculus*, but the small anterior legs of *Phthirus*.

Phthirpediculus propitheci, sp. nov.

Forehead provided with posteriorly directed, spine-like tubercles both above and below; postantennal region of head with two small spine-like tubercles behind the insertion of each antenna. Eyes with poorly developed corneas, situated at the anterior angles of temples. Antennae longer than the head; first segment with four small ventral tubercles; second segment with one dorsal and two ventral tubercles; third segment with extended anterior margin, which causes antenna to become geniculate, the bend being between third and fourth segments; last segment with sensory pit on posterior margin. Thorax broadest at its posterior margin, where it joins the abdomen. Each posterior angle of thorax with a conspicuous spine-like tubercle. Typical pleural plates of abdomen bilobed and with the contained stigmata near the front margin. Genital armature of male with a basal plate composed of two parallel chitinous rods which are united distally; with almost straight parameres, inwardly thickened, outwardly coming to a knife-edge and posteriorly each ending in a small, blunt hook; pseudopenis very large, consisting of a basal rod and a distally articulated chitinous hook; true penis anterior to pseudopenis, being a bent, chitinous tube. Anterior legs scarcely half as large as either of the others and each tibia with three ventral spines; tibial thumbs of second and third pairs of legs, each with a distal, stout spine. Length of female, 1.35 mm.; width of female, 0.52 mm. Length of male, 1.23 mm.; width of male 0.45 mm.

Type host and type locality: From a lemur, *Propithecus edwardsi*, taken at Ambodiasy, eastern Madagascar.

Type slide: Cat. No. 23762, U.S.N.M.

Specimens as follows: Two females and one male (on type slide) from female skin (Cat. No. 63352, U.S.N.M.) of *Propithecus edwardsi* taken at Ambodiasy, eastern Madagascar and two males from male skin (Cat. No. 63354, U.S.N.M.) of same host, taken at same place.

Proechinophthirus, gen. nov.

Forehead very short, almost obliterated; temporal regions with prominent, long, curved setae. Thorax longer than broad; sternum wanting. Abdomen long and clothed with both long setae and short spines. Genital armature of male with broad, unforked basal plate and slightly curved, freely projecting, unhooked parameres. First pair of legs greatly reduced, without tibial thumb, and in no way adapted for clasping.

Type of genus: *Echinophthirus fluctus* Ferris.

The type and only included species in this genus was described from specimens taken from an undetermined museum skin without data. In the United States National Museum there are several specimens taken from the fur seal (*Callorhinus alascanus*) at St. Paul Island, Alaska, by F. W. True and D. W. Prentiss, June 3, 1895.

In the nonsimilarity of the legs and the presence of long setae over practically all the body we have two good characters for differentiating this genus from *Echinophthirus* Giebel.