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CHILOPODS IN THE COLLECTIONS OF
FIELD MUSEUM OF NATURAL HISTORY

BY

RALPH V. CHAMBERLIN

DEPARTMENT OF ZOOLOGY, UNIVERSITY OF UTAH



ZOOLOGICAL SERIES
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CHILOPODS IN THE COLLECTIONS OF FIELD MUSEUM OF NATURAL HISTORY

BY RALPH V. CHAMBERLIN

The present publication lists the centipeds in the collections of Field Museum of Natural History and includes descriptions of twenty-four new species represented there. For the privilege of studying this material I am indebted to Colonel Clifford C. Gregg, Director; Mr. Karl Schmidt, Chief Curator, Department of Zoology; and Mr. William J. Gerhard, Curator of Insects. A large proportion of the collection is due to the interest of Mr. Schmidt in this group of animals. In addition to material obtained through local field work in the vicinity of Chicago and field collecting in various parts of the United States, the collection represents the accumulation from the Marshall Field Brazilian Expedition, 1926-27; the Crane Pacific Expedition, 1928-29; the Mandel Guatemala Expedition, 1933-34; and the Field Museum Magellanic Expedition, 1939-40. Duplicate specimens have been retained by the author.

Order Scolopendrida

Family Cryptopidae

Cryptops diego sp. nov.

Type from San Diego (Balboa Park), California. Collected August 25, 1940, by Morton Moran.

Description.—Light orange in color, the head and posterior legs a darker orange. Head longer than wide, widest near middle; punctate; without paired sulci. First dorsal plate overlapping the posterior border of the head; without either transverse or paired longitudinal sulci. Paired longitudinal sulci complete from seventh to twentieth tergites inclusive; sulci also present on sixth tergite but incomplete anteriorly. Ventral plates typically with a curved transverse sulcus near middle, its concavity cephalad; this crossed by a median longitudinal sulcus which does not extend over either anterior or posterior border. Last ventral plate moderately narrowed caudad, its caudal margin wide and straight.

Coxopleura with inner posterior corner not at all produced; with several spinules along caudal border, these somewhat more slender than those on femora or anal legs; surface otherwise free from spinules; poriferous area not reaching caudal or mesal border. Anterior spiracles large, subcircular or broadly longitudinally elliptic.

Femur of anal legs with numerous short spines beneath, with a narrow median longitudinal naked area beneath over distal half or more. Fourth joint with numerous similar spines beneath and a longitudinal naked area beneath over entire length, without teeth; fifth joint with a series of five teeth beneath; first tarsal joint with two teeth.

Cryptops hyalinus Say

Cryptops hyalina Say, Journ. Acad. Nat. Sci. Phila., 2, p. 111, 1821.

Arkansas: Delight, Pike County, 1, April 16, 1941 (K. P. Schmidt).

Tennessee: Great Smoky Mountains National Park, Greenbrier Cove, 1, June 14, 1942 (H. S. Dybas).

Newportia stolli Pocock

Scolopendrides stolli Pocock, Biol. Centr.-Amer., Chilopoda and Diplopoda, p. 31, 1896.

Newportia stolli Kraepelin, Rev. Scolopendriden, p. 85, 1903.

Guatemala: Bobos (Playitas), Izabal, 1, December 20, 1933 (K. P. Schmidt).

Otocryptops ferrugineus Linnaeus

Scolopendra ferruginea Linnaeus, Syst. Nat., 12th ed., p. 1063, 1767.

Scolopocryptops ferruginea Newport, Trans. Linn. Soc. Lond., 19, p. 406, 1845.

Otocryptops ferrugineus Kraepelin, Rev. Scolopendriden, p. 72, 1903.

Guatemala: Chichivac, 11, February 1-7, 1934; Volcan Tajumulco, 1, February 16 and 18, 1934, in bromeliad, 7,000-9,000 feet (K. P. Schmidt and F. J. W. Schmidt).

Otocryptops sexspinosus Say

Cryptops sexspinosus Say, Journ. Acad. Nat. Sci. Phila., 2, p. 112, 1821.

Scolopocryptops sexspinosus Newport, Trans. Linn. Soc. Lond., 19, p. 407, 1845.

Otocryptops sexspinosus Kraepelin, Rev. Scolopendriden, p. 72, 1903.

California: Los Angeles, Los Angeles County, 7, 1936-38 (Gordon Grant).

Missouri: Libertyville, St. Francois County, 1, April 2, 1937 (K. P. Schmidt).

Arkansas: Base of Rich Mountain, Polk County, 10, March 22-23, 1938 (K. P. Schmidt); Imboden, Lawrence County, 1, April 3, 1937 (K. P. Schmidt); three miles east of Delight, Pike County, 1 (J. M. Schmidt).

Tennessee: Great Smoky Mountains National Park, Gatlinburg, 7, June 13, 1942; Greenbrier Cove, 3, June 14, 1942 (H. S. Dybas).

Illinois: Olive Branch, Alexander County, 1, May 10, 1907 (C. M. Barber); Palos Park, Cook County, 1, Monee, Will County, 1, March 24, 1908 (Henry Ramstadt); Highland Park, Lake County, 1, October 12, 1924 (C. C. Sanborn and K. P. Schmidt).

Georgia: Thomasville, Thomas County, 1, June, 1939 (Mrs. Robb White).

Indiana: Annapolis, Parke County, 1, October 20, 1940 (R. L. Wenzel).

Washington: Happy Lake, Olympic Mountains, Jefferson County, 1 (D. G. Elliot).

Otocryptops melanostomus Newport

Scolopocryptops melanostomus Newport, Trans. Linn. Soc. Lond., 19, p. 406, 1845.

Otocryptops melanostomus Kraepelin, Rev. Scolopendriden, p. 74, 1903.

Haiti: Kenskoff, 4,500 feet, 5, under stones, December 2, 1928 (K. P. Schmidt).

Guatemala: Escobas, Izabal, 1, November 25, 1938 (K. P. Schmidt).

Venezuela: Probably Caracas, 1, 1942 (Hermano Irénee).

Theatops spinicaudus Wood

Opisthemea spinicauda Wood, Journ. Acad. Nat. Sci. Phila., 5, p. 36, 1863.

Theatops spinicaudus Bollman, Ent. Americana, 4, p. 6, 1888.

Arkansas: Eleven miles west of Hot Springs, Garland County, 2, March, 1938; two miles east of Ben Lomond, Sevier County, 1, northeast corner of Mount Magazine, Logan County, 1, March 24, 1938; seven miles north of Arkadelphia, Clark County, 2, April 7, 1937; Delight, Pike County, 1, April 16, 1941 (all collected by K. P. Schmidt); three miles east of Delight, 1 (J. M. Schmidt).

Tennessee: Great Smoky Mountains National Park, Gatlinburg, 6, June 13, 1941; Greenbrier Cove, 1, June 14, 1942 (H. S. Dybas).

Missouri: Libertyville, St. Francois County, 41, April 2, 1937 (K. P. Schmidt).

Illinois: Alto Pass, Union County, 1, April 21–29, 1928 (Bryan Patterson).

Theatops posticus Say

Cryptops postica Say, Journ. Acad. Nat. Sci. Phila., 2, p. 112, 1821.

Theatops postica Newport, Trans. Linn. Soc. Lond., 19, p. 411, 1845.

Arizona: Rincon Mountain, September 23–30, 1907 (H. S. Swarth).

Scolopocryptops miersii Newport

Scolopocryptops miersii Newport, Trans. Linn. Soc. Lond., 19, p. 405, 1845.

Argentina: Caraguatay, Paraná River, Misiones, 1, September 11, 1926 (K. P. Schmidt).

Family **Otostigmidae**

Otostigmus inermis Porath

Otostigmus inermis Porath, Bih., Svensk. Vetensk.-Akad. Handl., (2), 4, No. 7, p. 23, 1876.

Colombia: Region of Santa Marta, 1, August 6, 1902 (H. N. Howland).

Otostigmus sp.

Belgian Congo: Irumu, savanna country, 4,200 feet, 1 (lacking anal legs), August, 1924 (Edmund Heller).

Otostigmus scaber Porath

Otostigmus scaber Porath, Bih., Svensk. Vetensk.-Akad. Handl., (2), 4, No. 7, p. 20, 1876.

China: Wong Go Ya, Szechwan, 1 (with most of its legs lost, but conforming in other characters with this species; F. T. Smith).

Otostigmus calcanus sp. nov.

Type from Hacienda Urco, near Calca, Cuzco, Peru. Collected September 19, 1939, by K. P. Schmidt.

Paratypes.—Two specimens collected with the type “under stones near water.”

Description.—Olive in color, the head and adjacent plates of dorsum darker. Legs and antennae also olivaceous. Antennae composed in one specimen of sixteen (left) or seventeen (right) segments, but normally seventeen; first $2\frac{1}{3}$ segments glabrous. Head finely punctate. Prosternum with indication of four teeth on each side, but of these the three innermost more or less completely fused, only the outermost free. Dorsal plates with paired sulci complete from fifth segment caudad. Only the last plate laterally margined. Last plate with caudal margin obtusely angular, the sides of angle straight; without sulcus or impression. All tergites wholly smooth.

Paired sulci on anterior ventral plates extending only across anterior border, on those plates behind middle the sulci reaching nearly to middle; on none complete. Last ventral plate moderately narrowed caudad; caudal margin between rounded corners rather wide and nearly straight; without median sulcus or impression.

Coxopleura posteriorly truncate, not at all produced and wholly without spines. Legs of first pair with two tarsal spines; others to and including the nineteenth with one tarsal spine.

Femur of anal legs wholly lacking spines; a broad longitudinal depression or furrow usually showing over about the distal two-thirds of ventral surface into which furrow the next segment fits when flexed.

Length about 30 mm.

Remarks.—Having some resemblances to *O. tibialis* Brol. but differing conspicuously in lacking the peculiar modification of the tibia in the anal legs of the latter. It is a much smaller form.

Otostigmus therezopolis sp. nov.

Type from five miles north of Therezopolis, Rio de Janeiro, Brazil. Altitude 3,500 feet. Collected under a log July 5, 1926, by K. P. Schmidt.

Paratypes.—Two specimens, Therezopolis, July 9, 1926, K. P. Schmidt.

Description.—General color olivaceous, with the legs paler than body. Head and first or first and second dorsal plates more or less chestnut. Antennae of type composed of eighteen (right) or nineteen (left) segments of which the first $2\frac{1}{3}$ – $2\frac{1}{4}$ are glabrous. Cephalic plate with punctae lightly impressed, not numerous. Dorsal plates

with paired sulci complete from the seventh caudad. Only the last dorsal plate distinctly margined laterally. Last dorsal plate strongly produced caudad, the posterior angle narrowly rounded and slightly notched at middle; without sulcus or depression. All dorsal plates smooth, without trace of ridges or prickles. Ventral plates smooth. None with complete paired sulci, these short, crossing anterior border only. Last ventral plate considerably narrowed caudad; caudal margin slightly incurved at middle; surface smooth.

Coxopleura posteriorly truncate except at inner angle where they are a little produced; wholly lacking spines. First sixteen pairs of legs with two tarsal spines; the remaining legs, to and including the twentieth, with a single tarsal spine. Anal legs wholly lacking spines.

Length 50 mm.

Remarks.—This species seems nearest to *O. caribicus* Kraepelin but differs in having a tarsal spine on the twentieth legs, in the shorter, paired sulci of the sternites, etc.

Otostigmus greggi¹ sp. nov.

Type from Hog Harbor, Espiritu Santo Island, New Hebrides. Collected April 5, 1929, by K. P. Schmidt.

Description.—General color olive, the legs and antennae paler than dorsum; head a somewhat light chestnut, lighter in front of frontal suture. Antennae of holotype composed of twenty (left) and twenty-one (right) segments of which the first $2\frac{1}{4}$ are glabrous; cephalic plate punctate. Dorsal plates bisulcate beginning with the fifth and margined from the ninth caudad, the eighth with weaker indication of margining sulcus. Tergites otherwise smooth. Last tergite strongly margined laterally; posterior portion subtriangular with posterior end rounded and sides a little incurved; a shallow depression or furrow just in front of caudal end, this depression not extending forward to the middle. Ventral plates smooth, with paired sulci impressed only across anterior border. Last ventral plate only a little narrowed caudad; caudal margin widely incurved.

Coxopleura conspicuously produced caudad and terminating in three spines; two lateral spines and none on dorsal surface. First eleven pairs of legs with two tarsal spines; the others, to and including the twentieth, with one tarsal spine. Femur of anal legs ventrally with an outer row of four spines and an inner row of two; inner sur-

¹ Named for Colonel Clifford C. Gregg, Director of Field Museum of Natural History.

face with a lower series of three spines and an upper one of two; a short spine at distal end.

Length 49 mm.

Remarks.—In some features resembling *O. telus* Chamberlin of New Guinea but differing in having only the first eleven pairs of legs with two tarsal spines (instead of nineteen pairs of legs so armed) and also in having the last ventral plate scarcely narrowed caudad, much as in *O. nemorensis* Silvestri, which differs in having only the first four pairs of legs with two tarsal spines.

Otostigmus samacus sp. nov.

Type from Samac, Alta Verapaz, Guatemala. Male. Collected by Daniel Clark.

Description.—Olivaceous, with head a darker olive than rest of dorsum and legs and antennae paler. Antennae composed of seventeen segments of which the first $2\frac{1}{4}$ or $2\frac{1}{3}$ are glabrous. Cephalic plate smooth, not punctate. Prosternal teeth 4-4 distinct and acute. Dorsal plates with paired sulci complete from the fourth caudad. Only the last dorsal plate distinctly marginal laterally. This last plate with caudal margin moderately produced and widely convex at middle; without median sulcus and only slightly depressed in an area caudad of middle. Dorsal plates smooth. All ventral plates without complete paired sulci. Each plate typically with a short median longitudinal impression in front of middle and one on caudal border; a short longitudinal impression is also present on each side near middle of length in the position occupied in some species by the paired sulcus. Last ventral plate strongly narrowed caudad with caudal margin between rounded corners nearly straight; surface with a median longitudinal furrow across caudal border.

Coxopleura without processes behind, the caudal border but slightly, bluntly extended toward inner corner; without spines. Legs of the first pair with two tarsal spines; the others, to and including the nineteenth, with a single tarsal spine; twentieth without tarsal spine. Anal legs wholly lacking spines; femur with a clavate process from near base on inner side extending caudad over somewhat more than two-thirds the length of the femur; caudal end of the latter set off by an encircling sulcus which is deepest below.

Length about 40 mm.

Remarks.—Resembling *O. scabricaudus* H. and S. of Brazil. It differs, e.g., in the processes of the femora of the anal legs, these

being attached farther from the base and being relatively shorter, with distal end rounded, not truncate, and the spot of golden hair dorsal rather than distal in position.

Ethmostigmus platycephalus Newport

Heterostoma platycephala Newport, Trans. Linn. Soc. Lond., 19, p. 415, 1845.

Ethmostigmus platycephalus Kraepelin, Rev. Scolopendriden, p. 162, 1903.

Dutch New Guinea: Manokwari, June 1, 1929, 1 (K. P. Schmidt).

Ethmostigmus trigonopodus Leach

Scolopendra trigonopoda Leach, Zool. Misc., 3, p. 36, 1817.

Kenya Colony: 1, April, 1906 (Edmund Heller).

French Equatorial Africa: Fort Archambault, 1 (F. Lester Fagle).

Family Scolopendridae

Cupipes andinus Kraepelin

Cupipes andinus Kraepelin, Rev. Scolopendriden, p. 182, fig. 122, 1903.

Peru: Hacienda Urco, 9,500 feet, near Calca, Cuzco, 3, September 15 and 22, 1939 (J. M. Schmidt).

Cupipes guildingi Newport

Scolopendra guildingii Gervais, Ins. Apt., 4, p. 284, 1847.

Haiti: Kenskoff, 7,500 feet, under stones, 8, December 2, 1928; Diquini Cave, west of Port au Prince, 1, December 7, 1929 (K. P. Schmidt).

Trachycormocephalus mirabilis Porath

Cormocephalus mirabilis Porath, Bih., Svensk. Vetensk.-Akad. Handl., 4, p. 18, 1876.

Trachycormocephalus mirabilis Kraepelin, Rev. Scolopendriden, p. 219, 1903.

Iraq: Baghdad, 25, 1934-39 (Henry Field, R. A. Martin, W. R. Kennedy and Yusuf Lazar); Nasiriyah, 55, March 12-24, 1935 (Yusuf Lazar).

Iran: Rayy, 1, September 9, 1934 (Henry Field and R. A. Martin).

Hemiscolopendra punctiventris Newport

Scolopendra punctiventris Newport, Ann. Mag. Nat. Hist., (1), 13, p. 100, 1844.

Scolopendra woodi Meinert, Proc. Amer. Phil. Soc., 23, p. 199, 1886.

Hemiscolopendra punctiventris Kraepelin, Rev. Scolopendriden, p. 217, 1903.

Florida: Punta Gorda, 18, March–May, 1941 (Henry Ramstadt).

***Scolopendra polymorpha* Wood**

Scolopendra polymorpha Wood, Proc. Acad. Nat. Sci. Phila., 1861, p. 41, 1861.

Kansas: Arkalon, May 9, 1904, 1.

California: Bolton's Ranch, Riverside County, 1, August 12, 1932 (Ben Cascard); Los Angeles, 44, 1935–39, 1, April 19, 1936 (Gordon Grant).

Arizona: Gila County, Tonto National Monument, 2,300 feet, 2, April 27, 1937 (K. P. Schmidt).

Mexico: Puebla, Tehuacán, 5,200 feet, July 7, 1941 (H. S. Dybas).

***Scolopendra morsitans* Linnaeus**

Scolopendra morsitans Linnaeus, Syst. Nat., 10th ed., p. 638, 1758.

India: Katchgarh, United Provinces, 3 (R. L. Fleming).

French Oceania: Makatea, northeast of Tahiti, 1, February 14, 1929 (K. P. Schmidt).

Cook Islands: Aitutaki Island, 1, 1930 (Chancellor Expedition).

***Scolopendra viridis* Say**

Scolopendra viridis Say, Proc. Acad. Nat. Sci. Phila., 1821, p. 110, 1821.

Mexico: Paso del Rio, Colima, 2, July, 1903 (Dr. E. Merich); Lago de Chalco, 1, 1901 (F. E. Lutz).

Florida: Gottfried Creek Bridge, Englewood, Polk County, 1, February 24, 1939 (A. C. Weed); Ormond Beach, Volusia County, 2, March 20, 1934 (Edward Brundage).

Louisiana: Indian mound, East Baton Rouge Parish, 1, August 3–7, 1923; one mile from mouth of Tangipahoa River, 1, July 21, 1923 (A. C. Weed).

Arkansas: Mount Magazine, Logan County, 2,500 feet, 1, March 24, 1938 (K. P. Schmidt).

Illinois: Alto Pass, Union County, 1, April 21, 1928 (Bryan Patterson).

Texas: San Marcos (at Ezell's Cave), Hays County, 1, April 6, 1937; 5, April 22, 1941 (K. P. Schmidt); Chisos Mountains, Brewster

County, 4, July 31–August 10, 1937 (K. P. Schmidt); Mount Locke, Jeff Davis County, 5,800 feet, 1, April 13, 1937 (K. P. Schmidt).

Georgia: Thomasville, 1, April, 1940 (Henry Field).

Mexico: Vera Cruz, Las Vigas, 5,500 feet, 1, June 30, 1941 (H. S. Dybas).

Nuevo León: Ciénaga de Flores, 1, June 14, 1941 (H. S. Dybas).

***Scolopendra alternans* Leach**

Scolopendra alternans Leach, Trans. Linn. Soc. Lond., 11, p. 383, 1815.

Florida: Miami, Dade County, 2, July, 1918 (W. I. Clarksworth).

Haiti: Christophe's Citadel, Cape Haitien, 2,800 feet, 1, December, 1928 (K. P. Schmidt).

***Scolopendra subspinipes* Leach**

Scolopendra subspinipes Leach, Trans. Linn. Soc. Lond., 11, p. 383, 1815.

China: Baurong, Szechwan, 4 (three young), May 7, 1929 (Herbert Stevens); Kiating, 2, May 15, 1932 (F. T. Smith).

Indo-China: Banmethuot, Annam, 400 meters, 1, March 18, 1937 (W. H. Osgood).

Marquesas Islands: Taohuku, Hiva-Oa, 1, February 6, 1929 (K. P. Schmidt).

Territory of Hawaii: Honolulu, 1 (F. T. Smith); two miles southwest of Honolulu, 5, December 11, 1920 (S. V. H. Jones).

***Scolopendra metuenda* Pocock**

Scolopendra metuenda Pocock, Ann. Mag. Nat. Hist., (6), 16, p. 423, 1895.

Solomon Islands: Webster Cove, Kulambangra, 2 (K. P. Schmidt).

***Scolopendra galapagoensis* Bollman**

Scolopendra galapagoensis Bollman, Proc. U. S. Nat. Mus., 13, p. 216, 1889.

Galapagos Islands: Indefatigable Island, 4, January 12, 1929, in "green zone, about 800 feet altitude, under stones" (K. P. Schmidt).

British Guiana: Demerara, 1, March, 1922 (B. E. Dahlgren).

***Scolopendra cingulata* Latreille**

Scolopendra cingulata Latreille, in Cuvier, Reg. Anim., 2nd ed., 6, p. 339, 1829.

Syria: "T-3-Station," 2 (Henry Field and R. A. Martin).

Iraq: Tal Afar area, west of Mosul, 1, lacking anal legs but probably this species (Henry Field and R. A. Martin).

Transjordan: Mafraq, 1 (F. R. S. Shaw).

Palestine: Afule, 1 (F. R. S. Shaw).

Scolopendra valida Lucas

Scolopendra valida Lucas, in Hist. Nat. Iles Canariens, Ent., p. 49, 1839.

Arabia: Mecca, 2 (H. St. J. Philby); Shabiwa, Hadvamaut, 1, 1933; Aden, 1 (A. R. M. Rickards).

Iraq: Tal Afar area west of Mosul, 1 (Henry Field and R. A. Martin).

Scolopendra heros Girard

Scolopendra heros Girard, in Marcy's Rept. Exped. Red River, p. 272, pl. 18, 1854.

Texas: San Marcos, Hays County, April 23, 1941 (J. Schmidt); Chisos Mountains, Brewster County, 5,400 feet, 1, August 1, 1937 (K. P. Schmidt); Mount Locke, Jeff Davis County, 6,800 feet, 1 (K. P. Schmidt).

Arkansas: Hollis, Perry County, 1, May 25, 1938 (K. P. Schmidt).

Order Geophilida

Family Himantariidae

Bothriogaster egyptiaca Attems

Bothriogaster egyptiacus Attems, Mitt. Mus. Hamburg, 13, p. 25, 1896.

Iraq: Nasiriya, 1, March 12-24, 1935 (Yusuf Lazar).

Gosiphilus laticeps Wood

Strigamia laticeps Wood, Journ. Acad. Nat. Sci. Phila., (2), 5, p. 49, 1862.

Gosiphilus laticeps Chamberlin, Pomona Journ. Zool. Ent., 4, p. 672, 1912.

Texas: San Marcos, 1, April 22, 1941 (K. P. Schmidt).

Gosiphilus orizabae sp. nov.

Type from Orizaba, Vera Cruz, Mexico. Altitude 4,000 feet. A male. Collected July 9, 1941, by H. S. Dybas.

Allotype, a female, taken with the type.

Description.—Close to *G. laticeps* Wood of the southwestern United States, but differing in the more linear area of the ventral

pores, an area also less sharply defined. The legs seem also to be more numerous than in *laticeps*, 91–95 pairs, as against a most frequent number of about 81.

Length of holotype about 40 mm.

Gosiphilus craterus sp. nov.

Type from five miles north of Jacala, Hidalgo, Mexico. Altitude 5,000 feet. A female. Collected June 27, 1941, by H. S. Dybas.

Description.—The holotype is a robust individual narrowing from the middle region toward each end and less ribbon-like than other species from which it is set apart by the number of pairs of legs, namely 135. Head small and proportionately broad, with the flattened antennae attenuated distally as usual. The ventral pores are in a sharply limited, narrowly oblong, transverse area. Last ventral plate of usual broad proportions, the caudal margin decidedly incurved.

Length of holotype about 65 mm.

Garriscaphus amplus Chamberlin

Garriscaphus amplus Chamberlin, Ann. Ent. Soc. Amer., 34, p. 790, 1941.

California: Los Angeles (Elysian Park), 1, April 17, 1938 (Gordon Grant).

Previously known from a single specimen, the holotype, taken two miles west of Kerrville, California. The Los Angeles specimen has 145 pairs of legs as against 155 pairs in the holotype, a not unusual degree of variation in the group, but seems to agree fully in all ordinary structural features. It is about 150 mm. in length.

Family Schendylidae

Schendyla nemorensis Koch

Geophilus nemorensis Koch, Deutschlands Crust., Myr., Arachn., fasc. 9, pl. 4, 1836.

Schendyla nemorensis Bergsøe and Meinert, Naturh. Tidsskr., (3), 4, p. 105, 1866.

Illinois: Chicago Ridge, Cook County, 1, September 27, 1921 (A. C. Weed).

Nyctunguis heathi Chamberlin

Pectiniunguis heathi Chamberlin, Ann. Ent. Soc. Amer., 2, p. 176, 1909.

Nyctunguis heathi Chamberlin, Bull. Mus. Comp. Zool., 58, p. 201, 1914.

California: Los Angeles, 1, December 22, 1936 (Gordon Grant).

Pectiniunguis fieldi¹ sp. nov. Pl. 13, figs. 1, 2.

Type from Rio Paranay, Misiones, Argentina. Collected September 20, 1926, by K. P. Schmidt.

Description.—In the poorly preserved holotype the head and anterior segments and the posterior segments are somewhat orange in color, the intervening segments appearing much darker and apparently in life with a median longitudinal pale line dividing the broad dark area. Head longer than wide with the sides moderately convex from end to end and anterior margin very obtusely angular. Prebasal plate exposed. Median arch of labrum wide and even, not deep, bearing thirteen stout teeth of which those of middle region are relatively blunt, those toward the sides more acute and forming a transition to the lateral pretinations, of which there are about four on each side. Mandible with dental plate divided into three blocks which bear 3+2+5 teeth. Apparently only one pair of lappets on first maxillae, these produced from coxal piece and not long. Claws of prehensors when closed about even with anterior margin of head. All segments of prehensors unarmed within.

Spiracles all circular, the first largest, others decreasing caudad as usual. Ventral pores in a circular area on each sternite from second to the antepenultimate. Pairs of legs 43.

Length about 28 mm.

Remarks.—The number of pairs of legs in this species is smaller than in any previously described form. The dentition of the pieces of the dental plate on the mandible seems to be distinctive, as also is the absence of distal lappets on the palpus of the first maxillae.

Family **Mecistocephalidae**

Mecistocephalus consocius sp. nov. Pl. 13, fig. 3.

Type from Hog Harbor, Espiritu Santo Island, New Hebrides. Collected in 1929 by K. P. Schmidt. In vial with *Kaloterme* (*Neoterme*) *sanctaecrucis* Snyder.

Description.—General color yellowish, unmarked, with head and prehensors light chestnut. Cephalic plate longer than greatest

¹ Named for Mr. Marshall Field III, patron of Field Museum. The species was collected in the course of the Marshall Field Brazilian Expedition.

width in ratio of 55:33; widest at frontal suture whence it gently narrows to the more abruptly narrowed caudal fourth, the shape nearly as in *M. zygethus* Chamberlin. Areolated area of clypeus longer than the posterior non-areolated bands.

Labrum with lateral pieces shaped much as in *M. vanheurni*, but lateral ends even more narrowed; median piece comparatively large, more slightly narrowed than in *vanheurni* to the end portion which is abruptly narrowed to an obtuse angle, the extreme apex of which is truncate in one specimen. The free end of the median piece is on a level with the caudal margin of the lateral pieces or slightly exceeds it (fig. 3).

Prosternum with anterior margin bearing two pale low tubercles which are not truly dentiform. Femoroid of prehensors with the usual two teeth of which the more distal is much the larger and distally rounded or blunt. First segment beyond femoroid lacking a tooth or with the merest vestige of one. Next segment with a small, distally blunt tooth. Claw with low, very obtuse tubercle or denticle at base. Impression on sternites a simple longitudinal sulcus not furcate anteriorly.

The type lacks the posterior end of the body; but a young specimen of the species has 49 pairs of legs. A species apparently of small or moderate size.

Remarks.—The species may be readily distinguished by form of sternal impressions together with characters of the armature of prehensorial feet and the details of labrum.

Mecistocephalus manokwarius sp. nov. Pl. 13, figs. 4, 5.

Type from Manokwari, Dutch New Guinea. Collected June 1, 1929, by K. P. Schmidt.

Description.—General color brown without markings. Head, basal plate and prehensors chestnut. Cephalic plate longer than wide (58:35), of uniform width from frontal suture to about beginning of the posterior fourth over which the sides converge strongly to a relatively narrow caudal end; anterior margin scarcely, obtusely excised between bases of antennae (see fig. 4). Labrum with median piece rather strongly narrowed from anterior end to middle and these of uniform width to the rounded caudal end which is exceeded by the adjacent angles of the lateral pieces. Caudal margin of each lateral piece running in a nearly straight oblique line from near outer end to the acute caudo-mesal angle (see fig. 5). Mandible with seven lamellae; first lamella bearing eight teeth; mesal angle below

this lamella produced into an acute translucent process, wholly lacking marginal serrations. Anterior areolated area of clypeus a little shorter in the antero-posterior direction than the two posterior non-areolated bands taken together.

Prosternum with anterior margin bearing two small acute teeth. Femoroid of prehensors with two acute teeth of which the one at distal end is somewhat shorter; each of the following articles with a single tooth similar in size and form to the proximal one of the femoroid; claw with a small tubercle-like low tooth at base. Impression of sternites anteriorly furcate, branches short, with the angle formed by them slightly obtuse. Last ventral plate short, strongly narrowed caudad to an angle. Pores of coxopleura small and very numerous, covering entire surface both above and below. Pairs of legs, 49.

Length about 44 mm.

Mecistocephalus tsenapus sp. nov. Pl. 13, figs. 6, 7.

Type from Tsenap Hills, upper Sepik River, Territory of New Guinea. Collected May 17, 1929, by K. P. Schmidt.

Description.—Dorsum light brown over most of length with a broad dusky band geminate by a pale median line. Head and prehensors dusky or blackish over a light chestnut background. Cephalic plate widest at frontal suture, thence conspicuously narrowed caudad to posterior fourth which is then more abruptly narrowed as usual (more strongly narrowed than in *M. consocius*); longer than wide (15:9) (fig. 6). Areolated area of clypeus longer than posterior non-areolated band. Median piece of labrum moderately narrowed caudad; caudal end very obtusely angled with a single denticle at angle, extending beyond caudal margin of lateral pieces. Caudal margins of lateral pieces smooth, nearly transverse, with lateral ends bent somewhat caudad of mesal parts (fig. 7).

Anterior margin of prosternum with two low, pale tubercles, one each side of median incision. Femoroid of prehensors with a rounded tooth at distal end, none proximally, but vestigial at end of coxoid division. Second segment without tooth; the third with a small tooth, and the claw with the usual low tubercle at base. Impression of sternites long, sharply impressed, not furcate, or faint, acutely meeting branches sometimes detectable. Last sternite small, trapeziform. Coxopleural pores absent from mesal and caudal borders. Pairs of legs, 49.

Length about 16 mm.

Dasyptyx hebrides sp. nov. Pl. 14, figs. 8, 9.

Type from Hog Harbor, Espiritu Santo Island, New Hebrides. Collected April 5, 1929, by K. P. Schmidt.

Description.—Dorsum brownish, covered with a fine network of dusky lines and spots which also cover the sides; a median dorsal pale line. Head and prehensors chestnut. Head longer than wide (105:65); widest at anterior end, thence narrowing obviously to about beginning of caudal fourth where the sides round in, and the narrowing becomes more abrupt; caudal margin very slightly arcuate (fig. 8). Median piece of labrum narrow behind, widest anteriorly, the caudal end on a level with the mesal ends much as in *Dasyptyx pseustes* but with lateral ends farther forward (see fig. 9). Mandible with sixteen lamellae of usual general form, with no projecting angle below the first of these.

Prosternum with two rounded teeth on anterior margin. Femoroid with two teeth of which the distal is much larger and conical in shape. Next segment with tooth minute or absent and the succeeding one with a larger but still very small tooth. Claw with the usual low angle or prominence at base. Impression of sternites furcate, the branches curving apart in an obtuse angle, the outer ends nearly transverse in position. Last ventral plate long trapeziform. Pores of coxopleura small and very numerous, the porous area not quite reaching caudal end and pores absent from narrow band along free mesal edge of the joint. Pairs of legs, 49.

Length about 62 mm.

Family Oryidae

Orphnaeus brevilabiatus Newport

*Geophilus brevilabiatu*s Newport, Trans. Linn. Soc. Lond., 19, p. 436, 1845.

*Orphnaeus lividu*s Meinert, Naturh. Tidsskr., (3), 7, p. 19, 1870.

*Orphnaeus brevilabiatu*s Haase, Abh. Mus. Dresden, 5, p. 111, pl. 6, 1887.

Guatemala: Escobas (opp. Puerto Barrios), 1, April 18, 1934 (K. P. Schmidt).

New Guinea: Wogamusch, upper Sepik, 1, May 18, 1929 (K. P. Schmidt).

Notiphilides maximiliani Humbert and Saussure

Notiphilus maximiliani Humbert and Saussure, Rev. Mag. Zool., (2), 22, p. 205, 1870.

Notiphilus maximiliani Saussure and Humbert, Miss. Sci. Mex., Myriop., pt. 611, p. 141, pl. 7, fig. 22, 1872.

Guatemala: Escobas, Izabal, 1, November 29, 1933, "in rotten stump" (F. J. W. Schmidt).

British Honduras: Silk grass, 2, May 10 and November 17, 1939, "center of rotten log"; Bokowina, 1, October 24, 1939, "in damp, rotten log" (I. T. Sanderson).

Family Geophilidae

***Geophilus regnans* Chamberlin**

Geophilus regnans Chamberlin, Proc. Acad. Nat. Sci. Phila., 56, p. 654, 1904.

California: Los Angeles, 18, 1936-39 (Gordon Grant).

***Geophilus rubens* Say**

Geophilus rubens Say, Journ. Acad. Nat. Sci. Phila., 2, p. 113, 1821.

Wisconsin: Delavan, Walworth County, 2, August, 1940 (H. S. Dybas); Antigo, Langlade County, 1 (R. Raddatz).

Arkansas: Near base of Rich Mountain, Polk County, 2,000 feet, 1, March 23, 1938 (K. P. Schmidt).

Illinois: Aurora, Kane County, 1, April, 1940 (H. S. Dybas); Glenview, Cook County, 1, October 12, 1940 (W. J. Beecher); Monee, Will County, 2, March 24, 1908 (Henry Ramstadt); Cook County, 2, October 19, 1941 (H. S. Dybas); Plano, Kendall County, 1, May 3, 1942 (H. S. Dybas).

Indiana: Dune Acres, Porter County, 1, March 22, 1942 (H. S. Dybas); Tremont, Porter County, 1, May 31, 1942 (H. S. Dybas).

Texas: Chisos Mountains, Brewster County, 1, August 1-10, 1937, a variant with 59 pairs of legs and lacking the geminate dark stripe (K. P. Schmidt).

***Geophilus mordax* Meinert**

Geophilus mordax Meinert, Proc. Amer. Phil. Soc., 23, p. 207, 1886.

Tennessee: Great Smoky Mountains National Park, Gatlinburg, 7, June 13, 1941; Greenbrier Cove, 1, June 15, 1942; Blount County, Townsend, June 16, 1942, 1 female with numerous young (H. S. Dybas).

***Geophilus longicornis* Leach**

Geophilus longicornis Leach, Trans. Linn. Soc. Lond., 11, p. 386, 1815.

England: 2, October 23, 1936 (Henry Field).

Arenophilus watsingus Chamberlin

Arenophilus watsingus Chamberlin, Bull. Mus. Comp. Zool., 54, p. 418, 1912.

Missouri: Libertyville, St. Francois County, 1, April 2, 1937 (K. P. Schmidt).

Arkansas: Eleven miles west of Hot Springs, Garland County, 1, March 21, 1938 (K. P. Schmidt). This specimen represents a varietal form much larger than any previously known.

Arenophilus bipuncticeps Wood

Gepophilus bipuncticeps Wood, Journ. Acad. Nat. Sci. Phila., (2), 5, p. 45, 1862.

Arenophilus bipuncticeps Chamberlin, Can. Ent., 44, p. 66, 1912.

Illinois: Chicago, Jackson Park, 1, 1897 (E. B. Chope); Monee, Will County, 1, March 24, 1908 (Henry Ramstadt); Plano, Kendall County, 1, May 3, 1942 (H. S. Dybas); Willow Springs, Cook County, 1 (H. S. Dybas).

Arkansas: Nineteen miles south of Pocahontas, Randolph County, 1, April 14, 1941 (J. M. Schmidt).

Florida: Punta Gorda, 1, March, 1941 (Henry Ramstadt).

Arenophilus unaster Chamberlin

Gepophilus attenuatus unaster Chamberlin, Ann. Ent. Soc. Amer., 2, p. 179, 1919.

Arenophilus unaster Chamberlin, Bull. Mus. Comp. Zool., 54, p. 417, 1912.

Texas: San Marcos, Hays County, 1, April 22, 1941 (K. P. Schmidt).

Arenophilus iugans sp. nov. Pl. 14, fig. 10.

Type from Los Angeles, California. Collected December 22, 1936, by Gordon Grant.

Paratype.—A specimen from Los Angeles collected March 1, 1936, by Gordon Grant.

Description.—Yellow, with head and prehensors but little darker. Head subquadrate in general outline, with sides moderately bowed out from end to end; caudal margin wide, scarcely incurved; anterior margin a little obtuse between corners, with an obtuse notch at middle. No frontal suture evident.

Prehensors with a minute tooth on base of claw, otherwise unarmed, the femoroid lacking the rounded, nodular tooth present in *bipuncticeps*. Spiracles all circular, the first largest, the second abruptly smaller, the others decreasing very gradually. Sternites

with a median longitudinal furrow which is deep over middle region but weak or absent over anterior and posterior portions. Ventral pores in a transverse band across caudal portion of plate somewhat as in *A. bipuncticeps*. Last ventral plate broad, trapeziform. Coxopleural pores large, two on each side, partly covered by the sternite. Second tarsal segment of anal legs slender, with the terminal appendage long and especially slender, relatively much longer than in *A. bipuncticeps* (fig. 10). Pairs of legs, 57.

Length about 22 mm.

Garrina parapodus Chamberlin

Simoleptus parapodus Chamberlin, Ann. Ent. Soc. Amer., 34, p. 777, 1941.

Missouri: Libertyville, St. Francois County, 1, April 2, 1937 (K. P. Schmidt).

Previously known only from Bangs, Texas.

Garrina tecpanus sp. nov. Pl. 14, fig. 11.

Type from Santa Elena, near Tecpan, Chimaltenango, Guatemala. Altitude 9,500 feet. Collected February 7, 1934, by K. P. Schmidt.

Paratypes.—Two from Volcan Tajumulco, collected February 13 and 22, 1934, by K. P. Schmidt. One of these is a female with numerous young.

Description.—Body yellow throughout, with head and prehensors not darker than dorsum of body. Head broader than long (29:26), shorter than in *parapodus* and broader anteriorly with lateral margins convex. Frontal suture absent or obscure. Prebasal plate exposed (fig. 11). Prehensors when closed not exceeding the anterior margin of the head; neither prosternum nor segments armed. Chitinous lines distinct and complete. Tergites bisulcate. Spiracles small and strictly circular, the anterior ones not vertically elliptic as in *parapodus*. Ventral plates not sulcate, smooth. Ventral pores apparently confined to a narrow transverse band on posterior border. Last ventral plate wide, covering the coxal pores, which are large and two in number on each side. Anal legs with last tarsal joint abruptly narrowing as in the genotype. Pairs of legs, 59.

Length about 32 mm.

Dysmesus gen. nov.

Distinguished from *Brachygeophilus* and other American genera of Geophilidae in having the coxosternum of the second maxillae pre-

serving a distinct median suture. Claw of the second maxillae simple, thus differing from the Tasmanian *Pachymerellus*. Coxae of first maxillae with long external lappet. Median part of labrum with stout teeth at middle, weaker ones laterally; lateral parts pectinate. Prehensors weak, covered from above. Ventral pores absent.

Genotype *Dysmesus orites* sp. nov.

Dysmesus orites sp. nov.

Type from Greenbrier Cove, Great Smoky Mountains National Park, Tennessee. Collected June 14–19, 1942 (H. S. Dybas).

Paratype.—Collected with type.

Description.—Cephalic plate short, wider behind middle where fully as wide as long; caudal margin straight and wide; no frontal suture present. Prebasal plate not exposed. Prehensors small, covered from above, the closed claws falling short of the anterior margin of head. Claws slender, armed at base with a minute denticle, the other joints unarmed. Chitinous lines not evident. Spiracles all circular. No ventral pores evident. Last ventral plate moderately wide, wider than long, sides straight and nearly parallel and caudal margin straight. Coxal pores small, few in number, about six on each side. Anal legs ending in well-developed claws. Pairs of legs, 45–51.

Length about 14–15 mm.

Family **Linotaeniidae**

Linotaenia fulva Sager

Strigamia fulva Sager, Proc. Acad. Nat. Sci. Phila., 8, p. 109, 1856.

Scolioplanes bothriopus Meinert, Proc. Amer. Phil. Soc., 23, p. 222, 1885.

Linotaenia fulva Bollman, Proc. U. S. Nat. Mus., 11, p. 341, 1888.

Illinois: River Forest (Thatcher's Woods), Cook County, 1, November 2, 1922 (A. C. Weed); Monee, Will County, 1, March 22, 1908 (Henry Ramstadt).

Louisiana: Creston, Natchitoches Parish, 1, April 6, 1915 (K. P. Schmidt).

Linotaenia chionophila Wood

Strigamia chionophila Wood, Journ. Acad. Nat. Sci. Phila., (2), 5, p. 50, 1862.

Indiana: Porter County, Tremont, 1, October 26, 1941 (Rupert Wenzel).

Family **Chilenophilidae****Arctogeophilus umbraticus** McNeill

Mecistocephalus umbraticus McNeill, Proc. U. S. Nat. Mus., **10**, p. 332, 1887.

Gnathomerium americanum Ribaut, Bull. Soc. Hist. Nat. Toulouse, **43**, p. 120, 1910.

Gnathomerium umbraticum Chamberlin, Bull. Mus. Comp. Zool., **54**, p. 422, 1912.

Tennessee: Great Smoky Mountains National Park, Greenbrier Cove, 5, May 14–19, 1942 (H. S. Dybas).

Taiyuna occidentalis Meinert

Geophilus occidentalis Meinert, Proc. Amer. Phil. Soc., **23**, p. 220, 1885.

Taiyuna occidentalis Chamberlin, Pomona Journ. Zool. Ent., **4**, p. 661, 1912.

California: Los Angeles, 2, April 5, 1936 (Gordon Grant).

Suturodes gerhardi¹ sp. nov. Pl. 14, fig. 12.

Type from Volcan Tajumulco, San Marcos, Guatemala. Collected February 21, 1934, by K. P. Schmidt.

Description.—In this form the head is much longer than wide with the sides parallel between the rounded corners. It differs from *schmidti* and *guatemalae* in having the frontal suture distinct. Cephalic plate much overlapping the basal, the exposed portion of which, in consequence, is short. Anterior margin of prosternum with two small low conical teeth or tubercles. Claws of prehensors when closed extending beyond end of first antennal segment. Femoroid of prehensors armed within at distal end with a small, black, conical tooth and the claw similarly curved at base; intervening segments unarmed. Anterior spiracles large, vertically elliptic, the first larger than second which is intermediate, the other decreasing in size caudad. Last tergite longer and proportionately narrower than in *schmidti*. Coxal pores small and numerous, present also dorsally along the tergite (fig. 12). Pairs of legs, 79.

Length about 35 mm.

Suturodes schmidti sp. nov. Pl. 14, fig. 13.

Type from Volcan Tajumulco, San Marcos, Guatemala. In bromeliad, alt. 7,000–9,000 feet. Collected February 16, 1934, by K. P. Schmidt.

¹ Named for Mr. William J. Gerhard, Curator of Insects, Field Museum.

Description.—A species apparently nearest to *S. guatemalae* Chamberlin. It is like that species in lacking a frontal suture on the cephalic plate, but differs in having the sides of the plate essentially parallel over the middle region instead of distinctly converging caudad. It differs as well in having the teeth of the prosternal margin slender and acute instead of small and nodular; teeth of femoroid small and pale, instead of larger, more robust and black. It differs obviously also in having all spiracles circular instead of the first vertically elliptic. It agrees with *guatemalae* in the rounded shield-shaped form of the last tergite (fig. 13). Pairs of legs, 47.

Length about 30 mm.

Polycricus paucipes Chamberlin

Lestophilus paucipes Chamberlin, Bull. Mus. Comp. Zool., 59, p. 523, 1915.

Mexico: Vera Cruz, El Fortin, 8, July 5 and 9, 1941 (H. S. Dybas).

Polycricus cruzanus sp. nov. Pl. 16, fig. 19.

Type from Las Vigas, Vera Cruz, Mexico. Collected June 30, 1941, by Henry S. Dybas.

Paratypes.—Three specimens taken with the type.

Description.—Having the general structure of *L. paucipes*, the genotype, but at once to be distinguished by the last tergite, which is broad posteriorly, subquadrate in outline as shown in fig. 19. The number of pairs of legs most frequently 47, three out of four specimens having this number, the fourth 45.

Length to about 30 mm.

Polycricus jacalanus sp. nov. Pl. 16, fig. 20.

Type specimen taken five miles north of Jacala, Hidalgo, Mexico. Altitude 5,000 feet. Collected June 24, 1941, by Henry S. Dybas.

Description.—Suggesting *P. cruzanus* in the broad last tergite, but this is proportionately longer and more narrowed and rounded behind as shown in fig. 20. Pairs of legs, 47.

Length about 20 mm.

Polycricus verus sp. nov. Pl. 16, fig. 21.

Type from Tezonapa, Vera Cruz, Mexico. Collected August 3, 1941, by Henry S. Dybas.

Paratype.—One specimen, taken with the type.

Description.—Agreeing in general structure with *L. cruzanus*, but apparently a somewhat larger form most readily distinguished by the larger number of pairs of legs (57–59) and the different form of the last tergite as shown in fig. 21.

Length 37 mm.

***Polycricus brachycephus* sp. nov.** Pl. 16, fig. 22.

Type from Tezonapa, Vera Cruz, Mexico. Collected August 8, 1941, by Henry S. Dybas.

Paratype.—One specimen taken with the type.

Description.—Characterized by the form of the cephalic plate which is proportionately shorter than, e.g., in *L. verus*, and relatively broader anteriorly than usual for species of the genus, as shown in fig. 22. No frontal suture evident. It is also distinct from all other known species in the complete absence of teeth on the prosternal margin. Form of the last tergite shown in fig. 22.

Length about 20 mm.

***Peruphilus* gen. nov.**

Agreeing in general with the Mexican *Polycricus* but with anal legs bearing a well-developed claw.

Genotype *Peruphilus sanborni* sp. nov.

***Peruphilus sanborni* sp. nov.**

Type from Chosica, Rimac Valley, Peru. Altitude 2,821 feet. A female, collected by C. C. Sanborn.

Description.—Cephalic plate longer than wide as in species of *Polycricus*, the sides between corners nearly straight and parallel; overlapping widely the basal plate. Labrum with median piece of good size, bearing a series of stout teeth. Lappets of first maxillae shorter than usual in *Polycricus*. Second maxillae with coxae narrowly united at middle; joints of palpus without processes, its claw simple; pleurosternal suture very fine. Claws of prehensors when closed attaining distal end of first antennal article. Prehensors armed as in species of *Polycricus*; teeth of prosternum small and pale. All spiracles circular, the first largest, the others decreasing from the second caudad. Ventral pores in a transverse band in front of caudal margin. Anterior sternites with anterior pocket limited below by a chitinous rim, the preceding sternite projecting

into the pocket. Last ventral plate narrow, the sides converging caudad. Coxopleural pores small and numerous. In female, anal legs of moderate length, slender, with a well-developed claw. Pairs of legs, 43.

Length about 15 mm.

Family Sogonidae

Gospina dybasi sp. nov. Pl. 17, fig. 24.

Type from five miles north of Jacala, Hidalgo, Mexico. Altitude 5,000 feet. A female. Collected June 24, 1941, by Henry S. Dybas.

Description.—Head small, short, subquadrate, with anterior margin rounded, the posterior wide and straight and the lateral moderately convex; without trace of front suture; overlapping the basal plate. First maxillae bearing rather short lappets on external side. Claw of palpus of second maxillae entire and smooth; coxae completely fused together at middle. Labrum forming a large transverse piece which is armed along caudal border, excepting at ends, with pectiniform teeth much as in *Sogona*. Prehensors short, all joints unarmed, the claws when closed a little short of anterior margin of head. Prosternum with chitinous lines complete. Dorsal plates bisulcate. Spiracles all circular. Anterior ventral plates with middle of anterior margin forming a more sclerotized rim. Last ventral plate broad, trapeziform. Coxal pits two on each side. Anal legs very long and slender, terminating in a small process in place of claw as shown in fig. 24. Pairs of legs, 55.

Length about 15 mm.

Order Lithobiida

Family Henicopidae

Lamyctes cuzcotes sp. nov.

Type from Hacienda Urco, near Calca, Cuzco, Peru. Taken "in quebrada, 10,000 ft., under stones." Male. Collected September 18, 1939, by Karl P. Schmidt.

Paratype.—A single male, collected with the type.

Description.—Dorsum dark brown with caudal borders of tergites darkest. Legs a lighter brown, and the antennae orange-colored. Head dusky in a median area and over lateral borders. Body conspicuously attenuated caudad, less attenuated cephalad. Antennae

short, composed of 30–32 segments. Prosternal teeth small and pale, 2+2, each pair toward median line. Median sinus very small, V-shaped. Posterior angles of ninth and eleventh dorsal plates moderately produced, in this respect contrasting with *diffusus*, *pinampus*, *fulvicornis*, etc. Coxal pores small, 1, 1, 1 to 1, 2, 2, 2 in number.

Gonopods of male extending nearly directly caudad; composed of three segments and a terminal pale, straight and spine-like claw without basal spines. Both specimens have lost their anal legs.

Length 10 mm.

Lamyctes leon sp. nov. Pl. 17, fig. 23.

Type from Ciénega de Flores, Nuevo León, Mexico. A female. Collected June 19, 1941, by Henry S. Dybas.

Allotype.—A male taken with the type.

Description.—An obviously smaller species than *L. pinampus* of the southwestern United States. It suggests the latter form in the length and slenderness of the anal legs, the proportions of the joints of which are shown in fig. 23. It seems readily distinguishable in the characters of the antennae. These are composed of 26–27 segments instead of the 28 that are normal for *pinampus*, and beyond the second these are of nearly uniform size, not showing groups of two much shorter ones at intervals, as is characteristic of *pinampus*. The general color is yellow, but in both types the antennae proximally and the anal legs on fifth joint and part of adjacent joints are purplish.

Length 5–6.2 mm.

Family Watobiidae

Cruzobius viganus sp. nov.

Type from Las Vigas, Vera Cruz, Mexico. A female. Collected June 30, 1941, by Henry S. Dybas.

Allotype.—A male taken with type.

Paratype.—A male taken with type and allotype.

Description.—A distinctly smaller form than *C. verus*, the genotype which was also from Vera Cruz, and also lighter in color, this being typically nearly yellow. It differs from *verus* in having the ocelli in two series and somewhat more numerous; e.g. 1+1, 3, or 1+1, 4, the upper ocellus enlarged. In *verus* a vestigial spot behind

eye series may represent the well-developed single ocellus in *viganus*. Antennae vary, segments twenty. The accessory claw of anal legs smaller, almost abortive. The anal legs of the male proportionately thicker than in *verus*. Claw of female genital forceps short and pale, trilobed but lobes weak. Basal spines 2-2, proportionately short.

Length 4.8 mm.

Family Gosibiidae

Gosibius paucidens Wood

Lithobius paucidens Wood, Journ. Acad. Nat. Sci. Phila., (n.s.), 5, p. 14, 1862.

Gosibius paucidens Chamberlin, Can. Ent., 44, p. 204, 1912.

California: Los Angeles, 15, March-April 19 (Gordon Grant).

Gosibius (Abatobius) angelicus sp. nov.

Type from Los Angeles, California. A male. Collected February 2, 1936, by Gordon Grant.

Allotype.—A female, same data as the type.

Paratypes.—Six, same data as the type.

Description.—Brown, with posterior borders of tergites typically darker; head and posterior segments and thin legs sometimes more or less of chestnut cast. Antennae short, composed of 20-22 segments. Ocelli, e.g., 1+4, 4, 3 with the single ocellus contiguous with posterior end of second series. Prosternal teeth 2+2 as usual. Posterior angles of none of the dorsal plates produced. Gonopods of female with claw entire and basal spines 2+2; mesal excavation in basal segment as usual. In the male, the tibia of the anal legs is longitudinally furrowed above, while in the penult legs it is longitudinally ridged above with ridge elevated at distal end. Ventral spines of anal legs, 0, 1, 3, 3, 1; dorsal, 1, 0, 3, 1, 0; claws 2. Ventral spines of penult legs, 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 1, 1 or 1, 0, 3, 1, 0 (male); claws 3.

Arenobius manegitus Chamberlin

Lithobius manegitus Chamberlin, Ann. Ent. Soc. Amer., 4, p. 43, pl. 4, fig. 4, 1911.

Arenobius manegitus Chamberlin, Can. Ent., 44, p. 178, 1912.

Tennessee: Great Smoky Mountains National Park, Greenbrier Cove, 3, June 14-19, 1942 (H. S. Dybas).

Guambius euthus Chamberlin

- *Lithobius euthus* Chamberlin, Proc. Acad. Nat. Sci. Phila., 1904, p. 652, 1904.
- Guambius euthus* Chamberlin, Bull. Mus. Comp. Zool., 57, p. 240, 1917.

Texas: San Marcos, Hays County, 2 (the adult has lost the posterior legs), April 22, 1941 (K. P. Schmidt).

The types of this species were from Austin, Texas.

Labrobium minor Chamberlin

Mexico: Vera Cruz, Las Vigas, 1 male, June 30, 1941 (H. S. Dybas).

Vulcanbium Chamberlin

Distinguished from related gosibiid genera, e.g. *Labrobium*, in having both the anal and the penult legs conspicuously modified in the male. The fifth segment of the anal legs bears dorsally a conspicuous longitudinal ridge on crest. In the penult legs the fourth or fifth segment is swollen and has the dorsal surface more or less complanate and longitudinally furrowed.

Genotype *Vulcanbium pedregalus* Chamberlin.

Includes also *Vulcanbium cobulcanus* Chamberlin, *V. godmani* Pocock, *V. vulcani* Pocock and *V. salvini* Pocock.

Vulcanbium vulcani Pocock

Lithobius vulcani Pocock, Biol. Centr.-Amer., Chilopoda and Diplopoda, p. 8, pl. 1, figs. 8-8b, 1895—Volcan Agua, Guatemala.

Labrobium vulcani Chamberlin, Bull. Mus. Comp. Zool., 59, p. 536, 1915.

Guatemala: Chichivac, near Tecpan, Chimaltenango, 1, February 1, 1934 (F. J. W. Schmidt).

Vulcanbium cobulcanus Chamberlin

Labrobium cobulcanus Chamberlin, Proc. U. S. Nat. Mus., 60, art. 7, p. 10, pl. 1, figs. 6, 7, 1922.

Guatemala: Chichivac, near Tecpan, Chimaltenango, 2, February 1-7, 1934 (K. P. Schmidt and F. J. W. Schmidt).

The species was originally based on two females taken at Joyabaj, lower slope of Cobulco Mountain.

The present specimens have the antennae composed of from 34 to 42 segments. Ocelli arranged in three oblique series; e.g., 1+4, 4, 4; the single ocellus contiguous; top ocellus of caudo-dorsal series as large as the single ocellus. Prosternum agreeing in its charac-

teristic structure with types. Posterior angles of ninth, eleventh and thirteenth dorsal plates produced, those of the seventh a little convexly extended caudad. Coxal pores 3, 3, 3, 3, decreasing in size proximal in each series. Ventral spines of penult legs, 0, 1, 3, 3, 2 as in types. Ventral spines of anal legs, 0, 1, 3, 2, 1.

Length 14–15 mm.

Mayobius Chamberlin

Differing from *Labrobius* and *Vulcanbius* in having the anal and penult legs of the male normal, wholly lacking special lobes or thickening.

Genotype *Mayobius atliacanus* Chamberlin.

Mayobius mandeli¹ sp. nov.

Type from Chichivac, near Tecpan, Chimaltenango, Guatemala. A male. Collected February 4–7, 1934, by K. P. Schmidt.

Paratypes.—An additional male specimen and a female from the type locality, with the same data.

Description.—General color of dorsum brown, with head and posterior segments darker. Antennae composed of from 38 to 41+ articles, the tips of the antennae in the female holotype being broken off. Ocelli arranged in four series; e.g., 1+3, 3, 3, 2; single ocellus large, the caudal one of top series next in size and nearly as large as the single ocellus. Prosternal teeth 2+2 as usual; ectal spine setiform, borne on the slightly protruding outer angle of anterior margin. Posterior angles of seventh, ninth, eleventh and thirteenth dorsal plates produced as usual, the production of seventh weak, with inner side of angle long and very oblique. Coxal pores 5, 5, 5, 5. Ventral spines of anal legs, 0, 1, 3, 3, 1 (2); dorsal, 0, 0, 3, 1, 1; claws 2. Ventral spines of penult legs, 0, 1, 3, 3, 2; dorsal, 0, 0, 3, 2, 2; claws 3. None of the coxae armed. Ventral spines of first legs, 0, 0, 0, 0, 0; of second, 0, 0, 0, 0, 1. Anal legs of male with no definite ridge or lobe above at distal end. Gonopods of female and thin basal spines normal.

Length 14–15 mm.

Mayobius schmidti sp. nov.

Type from Volcan Tajumulco, San Marcos, Guatemala. A male. Collected February 18, 1934, by K. P. Schmidt.

¹ Named for Mr. Leon Mandel, of Chicago, patron of the Mandel Guatemala Expedition.

Description.—Dorsum brown, the posterior tergites somewhat more reddish. Antennae paler distally.

Antennae short, composed of 28 segments. Ocelli in three series; e.g., 1+1, 3, 3; the single ocellus well separated; the ocellus in dorsal position very large, exceeding the single ocellus. Prosternal teeth 2+2, the ectal spine setiform, inserted on a low truncate elevation somewhat like that of *V. cobulcanus*. Posterior angles of ninth, eleventh and thirteenth dorsal plates produced. Coxal pores circular; 2, 2, 2, 2. Ventral spines of anal legs, 0, 0 (or 1 abortive), 3, 2, 0; dorsal, 0, 0, 2, 1, 0; claws 2. Ventral spines of penult legs, 0, 1 (abortive), 3, 2, 0; dorsal, 0, 0, 2, 1, 1; claws 2. None of coxae armed either dorsally or laterally. None of joints of first legs armed ventrally. Anal legs of male without special lobes or modification.

Length about 7.5 mm.

Mayobius tajumulcensis sp. nov.

Type from Volcan Tajumulco, San Marcos, Guatemala. A male. Collected February 22, 1934, by K. P. Schmidt.

Paratypes.—Two specimens from the type locality and three from Santa Elena, near Tecpan, Chimaltenango. Collected January 26, 1934, by F. J. W. Schmidt.

Description.—Of the usual brownish color, with sometimes a tendency to chestnut especially on posterior segments. Antennae unusually short, composed of 32-34 short and very short segments. Ocelli in three series; e.g., 1+3, 4, 3; single ocellus large, somewhat lunate in shape with concavity cephalad; first ocellus of top and of bottom rows larger than other seriate ocelli. Prosternal teeth 2+2, small; ectal seta spiniform but rather slender, less robust than in *V. vulcani*. Dorsal plates as usual; the corners of the seventh more produced than in *chichivacus* and *mandeli*. Coxal pores, e.g., 4, 4, 5, 4.

Ventral spines of anal legs, 0, 1, 2, 1, 0; dorsal, 0, 0, 3, 1, 0; claws double. Ventral spines of penult legs, 0, 1, 3, 3, 1; dorsal, 0, 0, 3, 1, 1; claws double. None of posterior coxae armed. Ventral spines of first legs, 0, 0, 0, 0, 1. Anal legs of male with fifth joint not ridged or lobed, normal. Gonopods of female with claw and spines normal.

Length about 13 mm.

Sotimpus octodentus sp. nov.

Type from Santa Elena, near Tecpan, Chimaltenango, Guatemala. Altitude 9,500 feet. Female. Collected January 26, 1934, by F. J. W. Schmidt.

Paratypes.—Two females. One from the type locality, collected February 7, 1934, and one from Volcan Tajumulco, collected February 13, 1934, by K. P. Schmidt.

Description.—Dark brown, in part of chestnut cast; with a median dorsal dark stripe more or less in evidence; antennae and posterior legs paler distally. Antennae moderately long, composed in types of 45 to 50 segments. Ocelli in three series; e.g., 1+3, 3, 2; single ocellus large and well separated; posterior ocellus of top series next in size. Prosternal teeth 4+4, black; ectal seta of moderate stoutness, slenderly subspiniform. Posterior angles of ninth, eleventh and thirteenth dorsal plates produced, and posterior corners of seventh also with caudal margin long and running a little obliquely caudad of ectal. Coxal pores mostly transverse; arranged, e.g., 6, 6, 6, 6.

Ventral spines of anal legs, 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 2, 0; claws 2. Ventral spines of penult legs, 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 2, 2; claws 2. Last four pairs of coxae dorsally armed. None laterally armed. Ventral spines of first legs, 0, 0, 1, 2, 2. Gonopods of female with claws entire; basal spines 2+2, acuminate from base distad.

Length about 22 mm.

Remarks.—This species seems to differ from *S. decodontus* Pocock in lacking lateral spines on the posterior coxae and in having the ventral spines of the first legs 0, 0, 1, 2, 2 instead of 0, 0, 0, 1, 1, etc.

Family Lithobiidae

Lithobius forficatus Linnaeus

Scolopendra forficata Linnaeus, Syst. Nat., 10th ed., 1, p. 638, 1758.

Lithobius forficatus Leach, Edinb. Encyc., 7, p. 458, 1815.

New York: North Rose, 1, September 22, 1928 (A. C. Weed).

Illinois: Chicago (Woodlawn), 8, September 4, 1908 (H. Munzner); Chicago (Jackson Park), 14, 1897 (E. B. Chope); Hickory Creek, near New Lenox, Will County, 1, October 5, 1940 (W. J. Beecher); Glenview, 1, October 13, 1940 (W. J. Beecher); Willow Springs, Cook County, 1, September 28, 1906 (E. B. Chope); Plano, Kendall County, 6, May 3, 1942 (H. S. Dybas).

England: 1, October 23, 1936 (Henry Field).

Enarthrobium Chamberlin

Enarthrobium Chamberlin, Proc. Biol. Soc. Wash., 39, p. 9, 1926.

This genus has heretofore been known only from the type species, *E. bullifer* Chamberlin, from South Carolina. Four new species of the genus are here added, the types of all of which were collected recently in the Great Smoky Mountains of Tennessee by Henry S. Dybas. The five species now constituting the genus may be distinguished by means of the following key.

KEY TO THE SPECIES OF ENARTHROBIUS

- 1(6). Posterior angles of only ninth, eleventh and thirteenth dorsal plates produced (Subgenus *Enarthrobium*, sens. str.) 2
- 2(3). None of the coxae laterally armed; length near 18 mm.
E. bullifer Chamberlin
- 3(2). One or more of posterior pairs of coxae laterally armed; length not exceeding 10 mm. 4
- 4(5). Ventral spines of penult legs, 0, 1, 3, 3, 1; of anal legs, 0, 1, 3, 2, 0; length 6.5–7 mm. *E. litus* sp. nov.
- 5(4). Ventral spines of penult legs, 0, 1, 3, 3, 2; of anal legs, 0, 1, 3, 2, 1 (male); length near 9 mm. *E. fumans* sp. nov.
- 6(1). Posterior angles of seventh, or of both sixth and seventh, dorsal plates also produced (Subgenus *Capnobius*) 7
- 7(8). Posterior angles of sixth dorsal plate not produced; claw of anal legs single.
E. dybasi sp. nov.
- 8(7). Posterior angles of sixth dorsal plate produced; claw of anal legs double.
E. covenus sp. nov.

***Enarthrobium litus* sp. nov.**

Type from Greenbrier Cove, Great Smoky Mountains National Park, Tennessee. A male. Collected June 14–19, 1942, by H. S. Dybas.

Paratype.—A male, taken with the type.

Description.—A much smaller form than *E. bullifer*, the genotype. Dorsum, antennae and posterior legs brown, the other legs a lighter brown. Antennae moderate, composed typically of thirty segments. Ocelli few, in a narrow patch; e.g., 1+3, 2. Prosternal teeth 2+2, uniform in size, the margin slanting directly back from immediately outside of outer tooth. Coxal pores small, 2, 3, 3, 3.

Ventral spines of penult legs, 0, 1, 3, 3, 1; dorsal, 0, 0, 3, 1, 1; claws 2. Ventral spines of anal legs, 0, 1, 3, 2, 0; dorsal, 1, 0, 3, 1, 0; claw single. Last pair of coxae laterally armed. In the anal legs of the male the fourth segment is crassate, thickening distad somewhat clavately; the dorsal lobe at caudal end is low, flat, and wide, its slightly projecting caudal edge seen from above evenly convex. Fifth joint abruptly thinner than the fourth.

Length 6.5–7 mm.

Enarthrobium fumans sp. nov.

Type from Greenbrier Cove, Great Smoky Mountains National Park. A male. Collected June 14–19, by H. S. Dybas.

Allotype.—Taken with the type.

Description.—A smaller, somewhat darker species than *E. dybasi*. Antennae composed of thirty-five segments. Ocelli, e.g., 1+4, 4, 3, fewer than in the genotype. Prosternal teeth 2+2 as in *dybasi* but in the latter the prosternal margin ectad of the outer tooth forming a widely rounded shoulder, whereas in the present species it runs directly ectocaudad in a nearly straight line without forming a shoulder. Mesal tooth relatively larger in *dybasi* than in *fumans*. Posterior angles of only ninth, eleventh and thirteenth dorsal plates produced. Coxal pores 4, 4, 4, 3.

Ventral spines of first legs, 0, 0, 1, 2, 1; of penult, 0, 1, 3, 3, 2, with 3 claws, of which one is spine-like; of anal legs, 0, 1, 3, 2, 1 (male), the claw unarmed. Last pair of coxae armed dorsally, the last two pairs laterally. Gonopods of female with claw bipartite: basal spines 2+2. In the male the fourth joint of the anal legs broadly furrowed above with outer rim less elevated than in *dybasi*, extending in a transverse rim projecting at caudal end.

Length about 9 mm.

Capnobius subgen. nov.

Posterior angles of seventh or of both sixth and seventh dorsal plates produced, as well as those of ninth, eleventh, and thirteenth.

Type *Enarthrobium (Capnobius) covenus* sp. nov.

Enarthrobium (Capnobius) covenus sp. nov.

Type from Greenbrier Cove, Great Smoky Mountains National Park, Tennessee. A female. Collected June 14–19, 1942, by H. S. Dybas.

Paratype.—A female, taken with the type.

Description.—Readily distinguished from *E. bullifer*, the genotype, in having the posterior angles of the sixth and seventh, as well as those of the ninth, eleventh, and thirteenth dorsal plates produced. Differing also from the other three species here described in having the angles of the sixth tergite produced. Dorsum brown, with head and antennae and posterior tergites and legs darker, more chestnut. Antennae short, composed of 29–32 segments in the types.

Ocelli in three series. Prosternal teeth 2+2. Coxal pores circular; e.g., 4, 4, 4, 3.

Ventral spines of penult legs, 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 1, 1; claws 2. Ventral spines of anal legs, 0, 1, 3, 2, 1; dorsal, 1, 0, 3, 1, 1 (0); claws 2. Last coxae laterally armed.

Length 10 mm.

Remarks.—The two females upon which the present species is based are unfortunately of the *immaturus* stage but seem sufficiently distinct to warrant description and naming. In these specimens the claw of the gonopods is still entire and the basal spines but 1+1.

Enarthrobium (Capnobius) dybasi sp. nov.

Type from Gatlinburg, Great Smoky Mountains National Park, Tennessee. A male. Collected June 13–14, 1942, by H. S. Dybas.

Description.—Dorsum brown, with head and antennae darker, the latter paler distally. Antennae of moderate length, consisting in the holotype of thirty-seven segments. Ocelli in four series; e.g., 1+4, 5, 5, 2, a total of 17. The single ocellus contiguous, not enlarged. Prosternal teeth 2+2, with the inner one on each side larger and more salient than the outer. Posterior angles of seventh, ninth, eleventh, and fifteenth dorsal plates produced. Coxal pores circular, 4, 5, 5, 4.

Ventral spines of first legs, 0, 0, 1, 2, 1. Ventral spines of anal legs, 0, 1, 3, 3, 1, the claw single. Last three pairs of coxae dorsally armed, the last two laterally also. Fourth segment of anal legs of male long; dorsal ridge along entire length, its caudal portion higher and running oblique to axis, inside view appearing much like keel on a *Nadabius*.

Length about 12 mm.

Neolithobius transmarinus Koch

Lithobius transmarinus Koch, Myr. Gatt. Lithobius, p. 33, 1862.

Lithobius (Neolithobius) transmarinus Stuxberg, Ofvers. Kungl. Vet.-Akad. Forh., 32, No. 3, p. 26, 1875.

Texas: San Marcos, Hays County, 2, April 22, 1941 (K. P. Schmidt); southwest of Henderson, Rush County, 1, April 20, 1941 (K. P. Schmidt); Saltillo, Hopkins County, 1, April 5, 1937 (K. P. Schmidt).

Neolithobius suprenans Chamberlin

Neolithobius suprenans Chamberlin, Bull. Mus. Comp. Zool., 57, p. 500, 1925.

Arkansas: Nineteen miles south of Pocahontas, 1, Randolph County, April, 1941 (J. M. Schmidt).

Neolithobius arkansensis sp. nov.

Type from Rich Mountain, Polk County, Arkansas. A male. Collected March 21, 1938, by K. P. Schmidt.

Paratypes.—Ten specimens, collected by K. P. Schmidt: From Rich Mountain, Polk County, March 21–22, 1938, three specimens; eleven miles west of Hot Springs, Garland County, March 21, 1938, two specimens; Mount Magazine, Logan County, 2,500 feet, March 24, 1938, one male; seven miles north of Arkadelphia, Clark County, April 4, 1937, three specimens; two miles east of Ben Lomond, Sevier County, April 16, 1941, one male.

Description.—Dorsum brown, with the head and antennae of a somewhat chestnut cast. Legs light, somewhat yellowish brown. Antennae reaching to ninth tergite or nearly so; composed typically of 42–45 segments. Ocelli typically in seven longitudinal series forming an elliptical patch; e.g., 1+4, 6, 8, 7, 6, 6, 4. Prosternal teeth mostly 8+8 to 10+10. Coxal pores lying in a deep groove, transversely elongate; arrangement, e.g., 9, 9, 9, 8.

Ventral spines of anal legs, 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 1, 0; claw single. Ventral spines of penult legs, 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 1, 0; claw with a minute accessory claw on anterior side. Tibia of all legs from thirteenth forward, usually to and including the second, with three ventral spines at distal end. Gonopods of female as in *N. latzei*. Length up to 22 mm.

Remarks.—Closely related to *N. latzei* Meinert, occurring in Virginia and North Carolina, but with antennae longer and composed of more numerous segments: 42–45 as compared to 31–34. Coxal pores typically also more numerous.

Neolithobius tyrannicus Bollman

Lithobius (*Neolithobius*) *tyrannicus* Bollman, Proc. U. S. Nat. Mus., 10, p. 626, 1887.

Lithobius (*Neolithobius*) *tyrannicus* Bollman, Bull. U. S. Nat. Mus., 46, p. 43, 1893.

Indiana: Annapolis, "Devil's Den," Parke County, 1, October 20, 1941 (R. L. Wenzel); Dune Acres, Porter County, 2, March 22 and July 30, 1941 (H. S. Dybas).

Neolithobius voracior Chamberlin

Lithobius voracior Chamberlin, Ann. Ent. Soc. Amer., 5, p. 150, 1912.

Neolithobius voracior Chamberlin, Bull. Mus. Comp. Zool., 57, p. 492, 1925.

Missouri: Libertyville, St. Francois County, 2, April 2, 1937 (K. P. Schmidt).

Illinois: Bottom land of Silver Creek, west of Kaufman, Madison County, 3; Edgebrook, Cook County, 1, November 15, 1917 (Emil Liljebblad).

Neolithobius aztecus Humbert and Saussure

Lithobius aztecus Humbert and Saussure, Rev. Mag. Zool., (2), 21, p. 156, 1869.

Mexico: Vera Cruz, Las Vigas, a male and female, June 30, 1941 (H. S. Dybas).

Gonibius rex Bollman

Lithobius rex Bollman, Proc. U. S. Nat. Mus., 11, p. 350, 1888.

Gonibius rex Chamberlin, Bull. Mus. Comp. Zool., 57, p. 447, 1925.

Tennessee: Great Smoky Mountains National Park, Gatlinburg, 1 male, June 13–19, 1942, and Greenbrier Cove, 1 male, June 14–19, 1942 (H. S. Dybas).

This species was previously known only from the female. It may be here noted that the anal legs of the male are without special secondary modifications.

Pokabius bilabiatatus Wood

Lithobius bilabiatatus Wood, Proc. Acad. Nat. Sci. Phila., 1867, p. 130, 1867.

Pokabius bilabiatatus Chamberlin, Bull. Mus. Comp. Zool., 57, p. 347, 1922.

Illinois: Near River Forest, along the Des Plaines River, Cook County, 1, November 26, 1922 (A. C. Weed).

Pokabius disantus Chamberlin

Pokabius disantus Chamberlin, Bull. Mus. Comp. Zool., 57, p. 354, pl. 9, fig. 3, 1922.

California: Los Angeles, 10, 1936–38 (Gordon Grant).

Nadabius iowensis Meinert

Lithobius iowensis Meinert, Proc. Amer. Phil. Soc., 23, p. 177, 1886.

Nadabius iowensis Chamberlin, Bull. Mus. Comp. Zool., 57, p. 62, 1913.

Illinois: Monee, Will County, 1, March 24, 1908 (Henry Ramstadt).

Nadabius eremites sp. nov.

Type from Greenbrier Cove, Great Smoky Mountains National Park, Tennessee. A male. Collected June 13–19, 1942, by H. S. Dybas.

Description.—Dorsum and basal part of legs a yellow-brown, with antennae and distal part of legs a brighter, lemon yellow. Antennae short; last segment long, nearly equaling the three preceding segments taken together. Ocelli in a narrow, elongate patch; 1+4, 4, 3, those of bottom row very small. Prosternal teeth 2+2, the inner tooth on each side larger than the outer. Coxal process 3 (2), 4, 4, 3.

Ventral spines of first legs, 0, 0, 1, 2, 1. Ventral spines of penult legs, 0, 1, 3, 2, 1; dorsal, 1, 0, 2, 1, 0; claws 3. Ventral spines of anal legs, 0, 1, 3, 1, 0; dorsal, 1, 0, 2, 0, 0; claw single. Last four pairs of coxae dorsally armed, none laterally. Tibia of anal legs of male with the usual setose lobe at distal end, this located at distomesal corner.

Length 9 mm.

Remarks.—Readily distinguished from all previously known species in the peculiar spine formulae of the last two pairs of legs.

Nadabius ameles sp. nov.

Type from Dune Acres (=Mineral Springs), Porter County, Indiana. A male. Collected April 18, 1942, by H. S. Dybas.

Description.—A species near to *N. eigenmanni* Bollman of Washington and British Columbia in having the anal legs with the claw single and the prosternal teeth 2+2. It is a somewhat larger form, differing from *eigenmanni* in having the ventral spines of anal legs 0, 1, 3, 3, 1 instead of 0, 1, 3, 3, 0 as well as in the details of the secondary character of these legs in the male. In these the fifth joint has a longitudinal furrow above, this deepest and widest at distal end where it is limited by the characteristic low lobe; mesal face of fourth, fifth and sixth joints complanate and densely setose, the setae at distal end of fifth joint not especially long and not curved caudad at their tips as in *eigenmanni*; fourth joint not noticeably furrowed above.

Length about 13 mm.

Nothembius nampus Chamberlin

Nothembius nampus Chamberlin, Bull. Mus. Comp. Zool., 57, p. 194, pl. 8, fig. 4, pl. 9, 1916.

California: Los Angeles, 2, March 1, 1936 (Gordon Grant).

Sozibius providens Bollman

Lithobius providens Bollman, Amer. Nat., 21, p. 81, 1887.

Sozibius providens Chamberlin, Bull. Mus. Comp. Zool., 57, p. 268, 1922.

Tennessee: Great Smoky Mountains National Park, Greenbrier Cove, a male and female, June 14–19, 1942 (H. S. Dybas).

Nampabius virginiensis Chamberlin

Nampabius virginiensis Chamberlin, Bull. Mus. Comp. Zool., 57, p. 45, 1913.

Tennessee: Great Smoky Mountains National Park, Greenbrier Cove, 1, June 13–19, 1942 (H. S. Dybas).

Sigibius urbanus sp. nov.

Type from Chicago. A female. Collected March 20, 1942, by Henry S. Dybas.

Description.—Separated from other known species, excepting *S. enans*, in having the ventral spines of the anal legs 0, 1, 3, 1, 0 instead of 0, 1, 1, 1, 0 or none. Dorsal spines of anal legs, 0, 0, 2, 0, 0; claws 2. Ventral spines of penult legs, 0, 1, 3, 3, 1; dorsal, 0, 0, 2, 1, 0; claws 2. Differing from *enans* in having the ventral spines of the first and second legs 0, 0, 0, 0, 1, instead of 0, 0, 0, 1, 1 and 0, 0, 0, 2, 1 respectively. Articles of antennae 29 or 30, mostly very short and not always distinct, this number being the highest known for the genus, most species having 25 or 26. Claw of female genital forceps pale, tripartite; basal spines 2+2.

Length 8 mm.

Family **Ethopolidae****Bothropolys multidentatus** Newport

Lithobius multidentatus Newport, Trans. Linn. Soc. Lond., 19, p. 365, 1845.

Bothropolys multidentatus Wood, Trans. Amer. Phil. Soc., (n.s.), 13, p. 152, 1865.

Illinois: Plano, Kendall County, 1, May 2, 1942 (H. S. Dybas).

Missouri: Libertyville, St. Francois County, 1, April 2, 1937 (K. P. Schmidt).

Tennessee: Townsend, Blount County, 1, June 16, 1942 (H. S. Dybas).

Indiana: Annapolis, "Devil's Den," Parke County, 1, October 20, 1940 (R. L. Wenzel); Smith Woods, northeast of Springville, La Porte County, 1 (R. L. Wenzel); Dune Acres, Porter County, 17, March 22 and April 19, 1942 (H. S. Dybas).

Illinois: Aurora, Kane County, 1, April, 1940 (H. S. Dybas); Monee, Will County, 8, March 24, 1908 (Henry Ramstadt).

Order Scutigerida

Family Scutigeridae

Scutigera coleoptrata Linnaeus

Scolopendra coleoptrata Linnaeus, Syst. Nat., 10th ed., 1, p. 537, 1758.

Scutigera coleoptrata Lamarck, Syst. Anim. Sans. Vert., p. 182, 1801.

Scutigera coleoptrata Chamberlin, Ann. Ent. Soc. Amer., 13, p. 283, 1920.

Selista forceps Rafinesque, Ann. Nat., 1820, p. 7, 1820.

Cernatia forceps Wood, Trans. Amer. Phil. Soc., 13, p. 145, pl. 3, figs. 1, 1a, 1865.

Tennessee: Great Smoky Mountains National Park, Greenbrier Cove, 1, June 19, 1942 (H. S. Dybas).

Maryland: Eight miles south of Frederick, 1, August 23, 1941 (Henry Field).

Illinois: Elmwood Park, Cook County, 1, June 15, 1931 (Charles Lewis); Chicago, 1, September 6, 1902 (L. V. Kenkel), 1, October 31, 1905 (H. Stebbins).

California: Los Angeles, 1, August, 1937 (Gordon Grant).

Bermuda: St. David's Island, 1, October 20, 1905 (Joe Millet).

Scutigera linceci Wood

Cernatia linceci Wood, Proc. Acad. Nat. Sci. Phila., 1867, p. 42, 1867.

Scutigera mexicana Saussure and Humbert, Miss. Sci. Mex., Myriop., 5, fig. 3, 1872.

Scutigera occidentalis Meinert, Vid. Medd. Nat. Foren., 1886, p. 105, 1886.

Scutigera linceci Pocock, Biol. Cent.-Amer., Chilopoda, p. 1, pl. 1, figs. 1, 1a, 1b, 1895.

Guatemala: Samac, Alta Verapaz, 1, March 20, 1934 (K. P. Schmidt).

Scutigera chichivaca sp. nov. Pl. 15, fig. 14.

Type from Chichivac near Tecpan, Chimaltenango, Guatemala. Collected February 4-7, 1934, by F. J. W. Schmidt.

Description.—Dorsum green, with a somewhat paler median longitudinal stripe which does not contrast sharply. Legs light green, with tarsi light brown. Antennae also brown. Segments of antennae very short, much broader than long. First division consisting of 35 segments, the second of about 58. The stoma-bearing tergites posteriorly incurved at middle, the stoma even with the middle part of margin or but slightly projecting. Stoma saddles relatively wide, but little elevated. Stoma short, on posterior slope of saddles. Last tergite with posterior margin slightly incurved mesally (fig. 14). Surface of all tergites bearing the usual slender spiniform setae unaccompanied by hairs, these numerous on margins, more sparse on general surface.

First division of tarsus III composed of 9 segments, the second of 20. First tarsus of tenth legs composed of 6 segments, the second of 21. First tarsus of legs unspined distally. Gonopodal processes in male short, subcylindrical or slenderly subconical, widely separated.

Length 11 mm.

Remarks.—Readily distinguishable from the widespread *S. lincei* Wood in lacking yellow longitudinal bands on dorsum, and from the Costa Rican *S. nubila* Chamberlin also in its conspicuously different color as well as in the different number of segments in first division of antennae and in both divisions of tarsi, etc.

Scutigera buda sp. nov. Pl. 17, fig. 25.

Type from ten miles north of Buda, Hays County, Texas. A female. Collected April 23, 1941, by K. P. Schmidt.

Paratypes, consisting of two females and an immature specimen, taken with the type.

Description.—Dorsum yellowish or yellow-brown with an obscure lighter mid-dorsal stripe which shows best on the saddles but may be obliterated in front of saddle on each segment. The legs are yellow, without markings, excepting the posterior pairs, which are darker, greenish, except the tarsi, which are yellow or distally of light ferruginous tinge. While superficially resembling *S. homa* of Arizona, differing in details of color pattern as above described and in structural details such as in having first division of antennae normally consisting of only 54 segments as against 80 in *homa*. Second division of antennae consisting of about 95 segments. Tergites excised behind as usual, with stoma short and moderately projecting into the excision. Setae numerous and uniform. Last tergite with caudal margin blunt or slightly very obtusely indented. First tarsus I con-

sisting of 13 segments, the second of 33. First tarsus II of 14 segments, the second of 22. First tarsus III of 12 segments, the second of 22. First tarsus IV of 10 segments, the second of 27. First tarsus V of 8 segments, the second of 27. First tarsus VIII of 7 segments, the second of 27. Gonopods of female as shown in fig. 25. The claws relatively larger than in *S. homa*.

Length 15 mm.

Scutigera poicila sp. nov. Pl. 17, fig. 26.

Type from Peñuela, Vera Cruz, Mexico. A female. Collected July 17, 1941, by H. S. Dybas.

Description.—Dorsum with a broad dark olive band along each side and a narrower one of same color along mid-dorsum, the median band extending in a narrower tongue on stoma saddle to anterior edge of stoma, with lateral areas of stoma saddle salmon-colored. The narrow white stripe on each side separating the dark stripes and extending also upon the head. Antenna olive. Legs in general also olive but femur pale over dorsal surface and in a subdistal annular, the patella with a lighter annular at middle and base, and tibia with submedian annular and one at distal end. Tarsi tending to be light ferruginous distally. Articles of antennae very short; first division in the type consisting of 65 segments, the second of about 157. Tergites with margin incurved at middle behind with stoma but slightly projecting. Setae of tergites normal. Last tergite with caudal margin forming a slight obtuse angle at middle or appearing weakly convex. First tarsus I composed of 14 segments, the second of 30. First tarsus II consisting of 12 segments, the second of 29. First tarsus III composed of 11 segments, the second of 28. First tarsus VII of 8 segments, the second of 25; spines at end of first tarsus. Gonopods of female diverging, with intervals between them broad as shown in fig. 26.

Length about 13 mm.

Remarks.—A somewhat smaller form than *S. tancitarona*. It differs obviously in the divergent female gonopods and in the color pattern of dorsum, e.g. the interrupted median stripe and the salmon-colored stoma saddles.

Parascutigera lembehna sp. nov. Pl. 17, fig. 27.

Type from Lembeh Island, in the northern Celebes. A female. Collected June 22, 1929, by K. P. Schmidt.

Description.—A larger form than *P. dahli*, the genotype, from which also it differs conspicuously in color and in structural details, noted below. The dorsum of the preserved type is light brown or yellowish, with a broken dark band along each border with spots of same color or marbled, on adjacent part of sides, a narrow geminate mid-dorsal dark band less prominent. Legs yellow with dark annuli of which there is one at distal end of femur, two on patella of which the more distal is broader, one very broad one of greenish color on tibia and 2 or 3 broad green ones on tarsus. Antennae ferruginous yellow, uniform. The first division of antennae consisting of 148 segments, all of which, excepting the basal and terminal ones, are very short in relation to breadth; second division embracing 200 segments. Antennae without spines. Tergites excised behind, the excision rounded at bottom. Stoma short, not projecting behind into excision. Last pregenital tergite caudally rounded. First division of tarsus I composed of 11 segments, the second of 33. First tarsus II of 10 segments, the second of 32. First tarsus III of 10 segments, the second of 31. First tarsus IV of 8 segments, the second of 30. First tarsus V of 7 segments, the second of 28. First tarsus VI of 6 segments, the second of 27. First tarsus VII of 6 segments, the second of 26. Basal divisions of the female gonopods narrowly separated and parallel, the claws relatively long. See further figures.

Length about 20 mm.

***Thereuopoda sandakana* sp. nov.** Pl. 15, figs. 15, 16.

Type from Sandakan, British North Borneo, at "Mile 8." Collected July 10, 1929, by Karl P. Schmidt (Crane Pacific Expedition).

Description.—Dorsum brown with a median longitudinal yellow stripe as wide as the stoma saddles; the latter dark brown over anterior two-thirds or so, yellow behind, the brown constituting interruptions in the yellow stripe. Dorsal surface of head yellow. Legs yellow, not annulate. Antennae lost excepting basal portion; segments present moderate in length, a little wider than long. First tarsus I composed of 22 segments. First tarsus IV composed of 15 segments, the second of 47. First tarsus X composed of 9 segments, the second of 40. First tarsus XII composed of 11 segments, the second of 41. Stoma-bearing tergites with middle portion of posterior margin straight, the stoma not exceeding it; one or more posterior segments, a little incurved. Last tergite of form shown in fig. 15. Tergites with marginal setae close-set, each accompanied

by a finer seta or hair; setae on lateral areas of plates rather sparse, denser over middle region and especially on stoma saddles.

Length 30 mm.

Allothereua manila sp. nov. Pl. 15, figs. 17, 18.

Type from Manila, Philippine Islands. Female. Collected, 1931, by J. W. Willey.

Description.—Dorsum of a somewhat uneven brown color; lighter over stoma saddles and immediately in front of same in a stripe, narrower than saddles, which does not extend over anterior region of plate. Legs paler, not definitely annulate, or sometimes showing a vague lighter ring at middle of front joint and at each end of same. Segments of proximal part of antennae mostly somewhat wider than long, with segments which are obviously longer than wide interpolated at intervals. First division composed of 111 segments. Tergites with middle third or so of caudal portion conspicuously protruding, the caudal margin of produced portion nearly straight or widely, slightly incurved. Stoma saddles strongly elevated, adjacent caudal side areas less strongly so. Marginal setae close-set; those of lateral areas of plate sparse and in part weak. Those over saddles and middle region denser. Last tergite with caudal margin obtusely, not deeply, notched (fig. 17). First tarsus I composed of 20 segments, the second of 56. First tarsus IX composed of 11 segments, the second of 37. Female genital forceps and adjacent pairs of caudal end as figured (fig. 18).

Length about 37 mm.

PLATES

PLATE 13

Pectiniunguis fieldi sp. nov.

FIG. 1. End of mandible.

FIG. 2. Labrum.

Mecistocephalus consocius sp. nov.

FIG. 3. Labrum.

Mecistocephalus manokwari sp. nov.

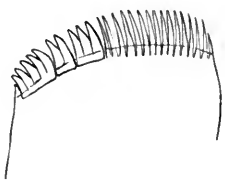
FIG. 4. Cephalic plate, dorsal view.

FIG. 5. Labrum.

Mecistocephalus tsenapus sp. nov.

FIG. 6. Cephalic plate.

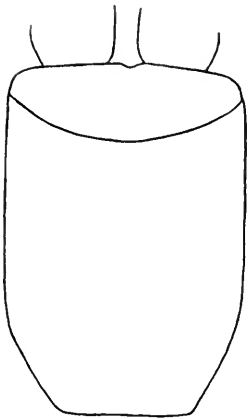
FIG. 7. Labrum.



1



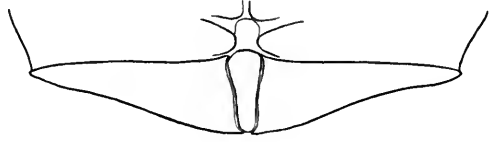
2



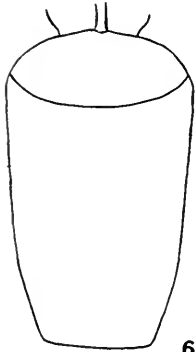
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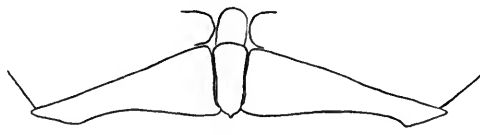
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5



6



7

PLATE 14

Dasyptyx hebrides sp. nov.

FIG. 8. Cephalic plate.

FIG. 9. Labrum.

Arenophilus iugans sp. nov.

FIG. 10. Distal end of anal leg.

Garrina tecpanus sp. nov.

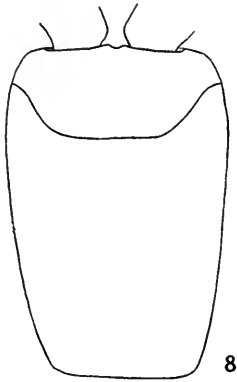
FIG. 11. Cephalic plate, dorsal view.

Suturodes gerhardi sp. nov.

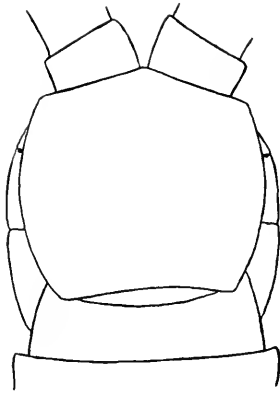
FIG. 12. Caudal end, dorsal view.

Suturodes schmidti sp. nov.

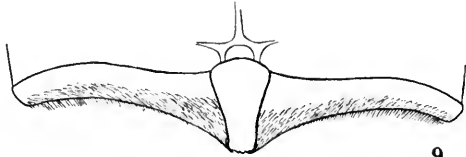
FIG. 13. Caudal end, dorsal view.



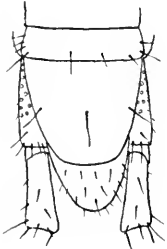
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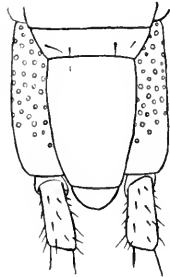
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10



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PLATE 15

Scutigera chichiraca sp. nov.

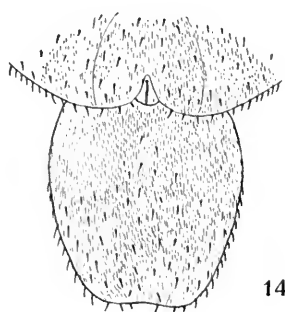
FIG. 14. Last tergite, dorsal view.

Thereuopoda sandakana sp. nov.

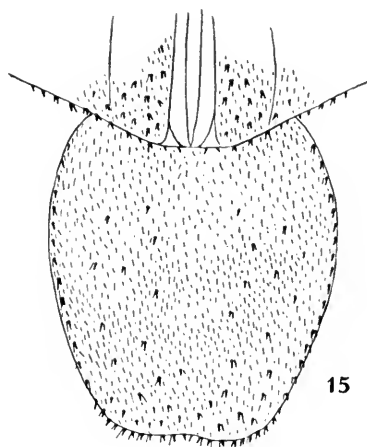
FIG. 15. Last tergite, dorsal view. FIG. 16. Genital forceps of female.

Allothereua manila sp. nov.

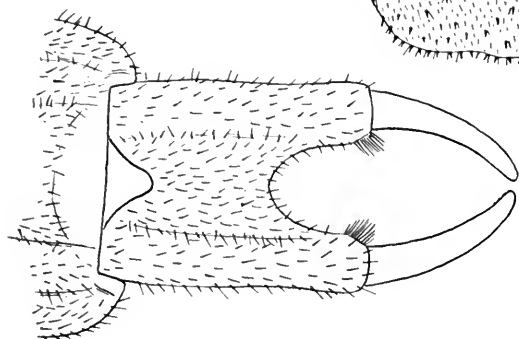
FIG. 17. Last tergite, dorsal view. FIG. 18. Genital forceps of female.



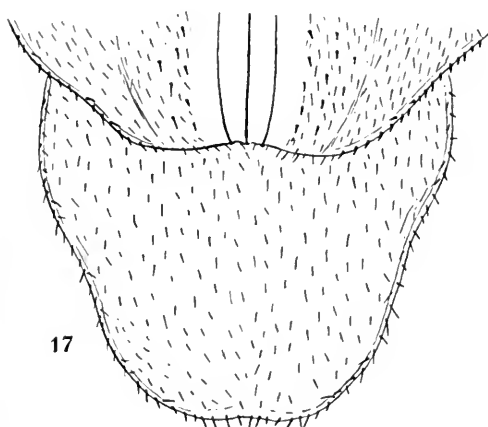
14



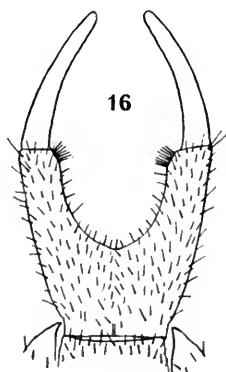
15



18



17



16

PLATE 16

Polycricus cruzanus sp. nov.

FIG. 19. Caudal end, dorsal view, in outline.

Polycricus jacalanus sp. nov.

FIG. 20. Caudal end, dorsal view.

Polycricus verus sp. nov.

FIG. 21. Caudal end, dorsal view.

Polycricus brachyiceps sp. nov.

FIG. 22. Head and prehensors, dorsal view.

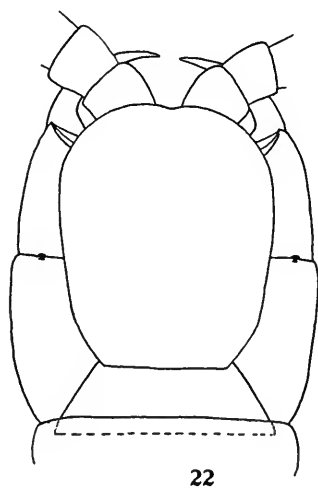
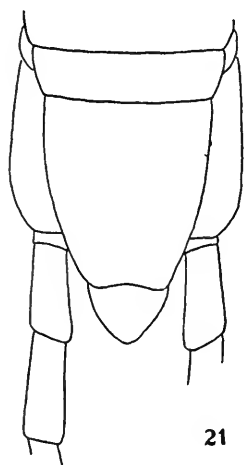
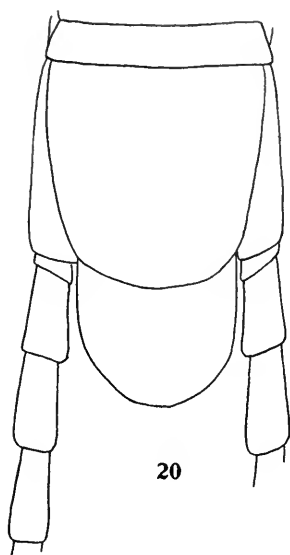
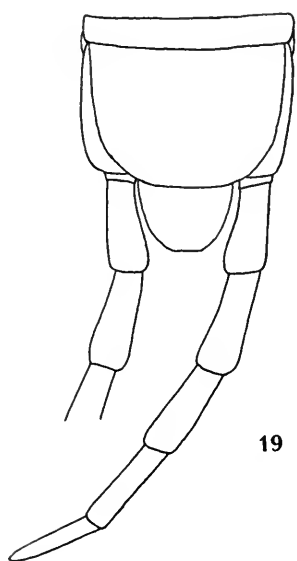


PLATE 17

Lamyctes leon sp. nov.

FIG. 23. Last five segments of right anal leg, ectal view.

Gospina dybasi sp. nov.

FIG. 24. Distal end of anal leg.

Scutigera buda sp. nov.

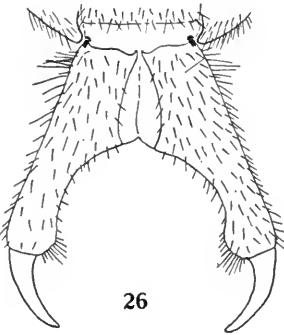
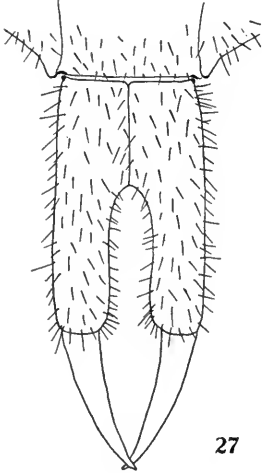
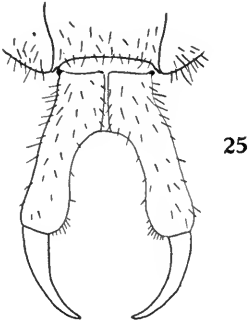
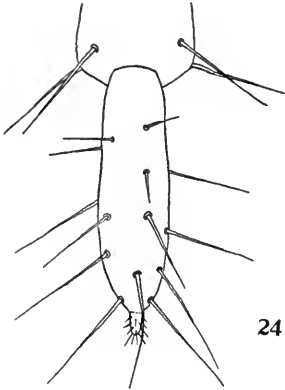
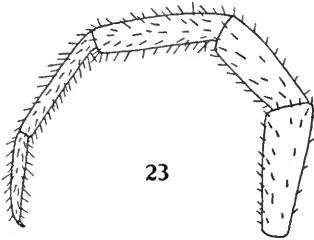
FIG. 25. Gonopods of female.

Scutigera poicila sp. nov.

FIG. 26. Gonopods of female.

Parascutigera lembehna sp. nov.

FIG. 27. Gonopods of female.



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