

LIST OF THE MYRIAPOD FAMILY LITHOBIIDÆ OF SALT LAKE COUNTY, UTAH, WITH DESCRIPTIONS OF FIVE NEW SPECIES.

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The five new species of *Lithobius* described in this paper are based upon material in collections made by the author from June to October, 1900, and in February, March, and April, 1901. Types of these new species have been deposited in the United States National Museum. Inasmuch as nothing upon the Myriapoda of Utah has been heretofore published, some notes are also given on the other species of the Lithobiidæ found within the limits of Salt Lake County.

ANALYTICAL KEY TO THE SPECIES OF LITHOBIUS DESCRIBED.

- A. Posterior angles of none of the dorsal plates produced.
- a*<sub>1</sub>. Anal feet each armed with a single claw.
- b*<sub>1</sub>. Coxal pores in several series, round.
- c*. Posterior coxæ armed beneath with a stout spine.
- d*. Antennæ long, articles 20; prosternal teeth, 9-9; spines of anal legs, 1, 3, 2, 1. *bipunctatus* Wood 1
- b*<sub>2</sub>. Coxal pores in a single series, round.
- c*. Posterior coxæ unarmed beneath.
- d*<sub>1</sub>. Articles of the antennæ, 20-22; coxal pores, 2, 2, 2-2, 3, 3, 3; ocelli, 5-11; spines of anal legs, 1, 3, 2, 0; length, 7.5-11 mm. *utahensis*, new species 2
- d*<sub>2</sub>. Articles of the antennæ, 20-23; coxal pores, 3, 4, 4, 3-3, 4, 4, 4; ocelli, 18-22; spines of anal legs, 1, 3, 2, 0; length, 13-15.8 mm. *collium*, new species 3
- a*<sub>2</sub>. Anal feet each armed with two claws.
- b*. Coxal pores in a single series, round.
- c*. Posterior coxæ unarmed beneath.
- d*. Articles of the antennæ, 20-25; coxal pores, 4, 5, 5, 4-5, 6, 6, 6; spines of the first legs, 1, 3, 2; of the anal, 1, 3, 2, 0; length, 12.2-13.8 mm. *socius*, new species 4
- B. Posterior angles of the ninth, eleventh, and thirteenth dorsal plates produced.
- a*<sub>1</sub>. Coxal pores in several series, round; anal feet with a single claw.
- b*. Posterior coxæ armed beneath with a stout spine.
- c*. Antennæ long, articles 20; prosternal teeth, 12 to 18; spines of anal legs, 1, 3, 2, 1. *santi* Wood 5

- a*<sub>2</sub>. Coxal pores in a single series, transverse; anal feet with a single claw.  
*b*. Posterior coxæ unarmed beneath.  
*c*. Articles of the antennæ, 33-48; prosternal teeth, 10 to 14; spines of anal legs, 1, 3, 3, 2 ..... *forficatus* (Linnaeus) 6
- a*<sub>3</sub>. Coxal pores in a single series, round.  
*b*. Posterior coxæ unarmed beneath.  
*c*<sub>1</sub>. Articles of the antennæ, 20; coxal pores, 3, 3, 3, 3; ocelli, 10; prosternal teeth, 5-5; length, 7.5-9 mm. .... *intermontanus*, new species 7  
*c*<sub>2</sub>. Articles of the antennæ, 28-32; coxal pores, 2, 3, 3, 2-3, 4, 4, 4; spines of first legs, 0, 0, 1; of anal, 1, 3, 3, 0-1, 3, 1, 0; length, 7-8.5 mm. .... *purpureus*, new species 8

### 1. LITHOBIUS BIPUNCTATUS Wood.

It has seemed well to include a description of this form, as it has not before been rediscovered or redescribed since Wood established the species in 1863.

*Description*.—Color, dark amber brown, the head lighter; legs mostly pale, posterior pairs and the antennæ somewhat darker. Antennæ, length, 16.5 mm. reaching to the eighth segment; pilose, articles 20. Ocelli, 18-22, in 7 series. Prosternal teeth, 9-9, black; the space between the second and third from the outer side much wider than between the other teeth. Spines of the legs, first, 2, 3, 1; penult, 1, 3, 3, 2-1, 3, 3, 3; anal, 1, 3, 2, 1. The anal legs are long and slender, not at all crassate. Coxal pores round or somewhat oval; arranged in 3-4 series in an oval patch. Genital forceps, claw long and pointed, tripartite, the middle lobe largest, the outer lobe nearer apex than the inner; basal spines 3-3, the outermost largest. Length of body, 28.7 mm; width of tenth dorsal plate, 3.9 mm; length of the anal legs, 16 mm.

*Habitat*.—Emigration Canyon, near the mouth. A number of specimens were taken in the dirt-filled crevices of the rock in a limestone quarry.

### 2. LITHOBIUS UTAHENSIS, new species.

*Diagnosis*.—This species is related to *Lithobius obsesus* Stuxberg, but the claw of the genital forceps is tripartite, the spines of the anal legs are 1, 3, 2, 0, and the size is always smaller. It is also near *Lithobius eigenmanni* Bollman, from which it is distinguished by the coxal pores, which are small and less in number, by the number of spines of the anal legs, and by the ocelli, which are fewer.

*Description*.—Color yellow to brown, legs and antennæ paler. Antennæ, length 2.6-3 mm.; hirsute; articles 20-22, gradually decreasing in length from the first few to the end. Ocelli 5-11, but mostly 5-8, arranged in 4-5 series. Prosternal teeth 2-2, small, pale. Spines of the first legs 1, 2, 1-2, 3, 2; of the penult 1, 3, 3, 1-1, 3, 3, 2; of the anal 1, 3, 2, 0. The posterior coxæ laterally armed. The coxal pores small, round, 2, 2, 2, 2-2, 3, 3, 3. Genital forceps, claw tripartite, the middle lobe longest, the outer smallest; basal spines 2-2, rather stout, the outer usually thickened upward and somewhat bifid at apex.

Anal legs of male, tibia swollen and excavated within near its anterior joint, at which it, together with the femur, is produced inward into a lobe which is often very conspicuous. Length of the body 7.5–11 mm.; width 0.8–1.2 mm.; length of the anal legs 2.5–3 mm.

*Habitat*.—Common along all mountain streams, loving particularly the damp beds of decaying leaves and vegetable loam.

*Type*.—U.S.N.M., No. 782; collected in Neff's Canyon, Salt Lake County, Utah, July 15, 1900.

### 3. LITHOBIUS COLLIUM, new species.

*Diagnosis*.—Joints of the antennæ 20–23; ocelli 18–22, in 7 vertical series; spines of anal legs 1, 3, 2, 0; claw of genital forceps wide, lobes short, the middle one not much longest.

*Description*.—Color brown, head and dorsal plates with a tendency to red brown, which may be strong; antennæ and legs yellow or light brown. Head smooth. Antennæ, length 4–5.5 mm.; articles 20–23, gradually decreasing in length toward the end; pilose. Ocelli 18–22, in 7 nearly vertical series. Prosternal teeth 2–2, small. Spines of the first legs 1, 3, 2–2, 3, 2; penult 1, 3, 3, 2; anal 1, 3, 2, 0. Posterior coxæ laterally armed. Coxal pores 3, 4, 4, 3–3, 4, 4, 4, small, round. Genital forceps, claw rather long, wide, tripartite, the lobes short and rounded, the middle one but little longer than the lateral, or the claw subentire; basal spines 2–2, moderate, the outer spine on each side somewhat stouter. Length of body 13–15.8 mm.; width 1.6–1.7 mm.; length of the anal legs 4–5 mm.

*Habitat*.—Common over the foothills about Salt Lake City during the spring and autumn months.

*Type*.—U.S.N.M., No. 783.

### 4. LITHOBIUS SOCIUS, new species.

*Diagnosis*.—This species is to be separated by the following points: Coxal pores 4, 5, 5, 4–5, 6, 6, 5; articles of the antennæ 20–25; spines of the anal legs always 1, 3, 2, 0; characters of genital forceps; and size, 12.2–13.8 mm.

*Description*.—Color, head and posterior dorsal plates brown; other dorsal plates mostly dark brown to brownish black; antennæ and legs yellow to light brown. Head smooth, wider than long. Antennæ, length 5–5.7 mm., but mostly near the lesser limit; articles 20–25; first 7–12 joints long, others short; pilose. Ocelli 16–22, arranged in 6–8 series. Prosternal teeth variable in size and number, 0–0 to 2–2 and 3–3 (as common) or even to 5–5. Spines of the legs, first 1, 3, 2; penult 1, 3, 3, 2; last 1, 3, 2, 1. Posterior coxæ laterally armed. Coxal pores 4, 5, 5, 4–5, 6, 6, 5; large, subcircular, or in part transverse. Genital forceps, claw normally tripartite but by obliteration of the outer lobe often bipartite or subentire, and on the other hand

sometimes possessing as many as 6 small lobes or crenulations; basal spines 2—2, short, stout, usually widening upward to the middle and conical or pointed above. The head in the male is proportionately wider than in the female. The inner claw of the anal feet is also larger in the male, being often indistinct in the female. Length of the body 12.2–13.8 mm.; width 1.8–2 mm.; length of the anal legs 5–5.6 mm., mostly near the lesser limit.

*Habitat*.—With the preceding form over the foothills about Salt Lake City, but less abundant.

*Type*.—U.S.N.M., No. 784.

#### 5. LITHOBIUS XANTI Wood.

*Habitat*.—Common along all mountain streams. This species and *Lithobius utahensis* are the forms by far most abundant in the canyons.

#### 6. LITHOBIUS FORFICATUS (Linnæus).

*Habitat*.—In and about Salt Lake City, where it is much the commonest species, but not found in the mountains.

The antennæ are most commonly either 36 or 39 jointed.

#### 7. LITHOBIUS INTERMONTANUS, new species.

*Diagnosis*.—Separated from other species previously described by the following points: Posterior coxæ unarmed; articles of the antennæ 20; prosternal teeth 5—5; coxal pores 3, 3, 3, 3, round; ocelli 10, in 6 series; length 7.5–9 mm.

*Description*.—Color, chestnut brown; antennæ and legs paler. Antennæ, length 2.65–2.75 mm.; articles 20; sparsely hirsute at base, elsewhere nearly glabrous. Ocelli 10, arranged in 6 series in a linear patch. Prosternal teeth 5—5. Spines of the first legs 2, 3, 2. Last tarsal joints of the first pairs of legs more densely hirsute beneath than the inner ones. Posterior coxæ unarmed. Coxal pores 3, 3, 3, 3, round. Length of the body 7.5–9 mm.; width 0.8–1 mm.

*Habitat*.—Branch of Mill Creek Canyon. The eight specimens obtained have all lost the posterior pairs of legs.

*Type*.—U.S.N.M., No. 785.

#### 8. LITHOBIUS PURPUREUS, new species.

*Diagnosis*.—Anal feet each armed with two claws; articles of the antennæ 28–32; spines of the first legs 0, 0, 1, of the last 1, 3, 3, 0 or 1, 3, 1, 0; coxal pores 2, 3, 3, 2–3, 4, 4, 4; length 7–8.5 mm.

*Description*.—Color, dark purple brown, the purple tint often conspicuous and unmixed; head and legs yellowish brown, the tarsal joints of the last pairs of legs commonly lighter; antennæ dark, yellow or rufous at ends. Antennæ, length 2.3–3 mm.; articles, except

the first few, short or very short. Ocelli 12-13, in 5-6 series. Prosternal teeth, normally 2-2, rather large, pale, but occasionally 4-4. Spines of the first legs 0, 0, 1; of the penult 1, 3, 3, 1; of the anal 1, 3, 3, 0, or less commonly 1, 3, 1, 0. Posterior coxæ armed laterally with a small, indistinct spine. Coxal pores 2, 3, 3, 2-3, 4, 4, 4, small or moderate. Genital forceps, claw rather long, tripartite, lobes pointed, the middle longest, the outer smallest, often nearer base and inconspicuous; basal spines 2-2, short and stout, widest at the middle, the outer largest. Length of the body 7-8.5 mm.; width 1-1.2 mm. Length of the anal legs 3-3.3 mm.

*Habitat.*—Not very common under sticks, boards, and logs laid on fine, loose soil in and near growths of willows on the banks of the Jordan River, Salt Lake City.

*Types.*—U.S.N.M., No. 786.

9. HENICOPS FULVICORNIS Meinert.

*Habitat.*—Not uncommon in several canyons at middle and upper elevations in very damp and cool places. Many were found under the bark and between the fibers of decaying logs, and two were taken under the body of a dead skunk, which lay at a considerable distance from water.

This species, first discovered in Europe, has been heretofore reported from the United States as occurring in New York (Mount Lebanon), Arkansas (Little Rock), and Minnesota (Winona).