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SPIDERS AND HARVESTMEN FROM WATERTON AND GLACIER NATIONAL PARKS ¹

LORNA R. LEVI and HERBERT W. LEVI

*University of Wisconsin, Extension Center, Wausau, Wisconsin.*²

THIS PAPER is largely the result of intensive summer collecting during 1953 at Waterton National Park in Alberta and Glacier National Park in Montana. Some of the specimens were collected at Waterton during a brief visit to that park in 1951. No list of spiders of this region is available at the present time, although Emerton collected in the Banff region, and in 1939 Gertsch and Jellison published a list of spiders, most of which came from Ravalli County, Montana.

This collection and paper were made possible through the kind cooperation of Park Naturalist M. E. Beatty and Superintendent J. W. Emmert who granted the permits necessary in order to collect in Glacier National Park. Many thanks are extended to them, to Dr. W. J. Gertsch of the American Museum of Natural History and Mr. W. Ivie, who helped determine many of the more difficult species, and to Dr. J. G. Edwards of San Jose State College for his additions to the collection. Representative samples of the collection will be deposited in the laboratory of the Ranger Naturalist at Glacier National Park, and in the American Museum of Natural History, which will receive also the types of the new species. For each species, reference is given to a readily available description.

For those not familiar with this area, it may be helpful to point out that the following localities are in Waterton National Park, Alberta: Bertha Lake, Cameron Lake, Carthew Lakes, Rowe Brook, Summit Lake, Upper Rowe Lake and Waterton Lake (east shore). All other localities, unless otherwise mentioned, are in Glacier National Park, Montana.

Order Phalangida (Harvestmen) Phalangiidae ³

Leiobunum paessleri Roewer, 1910. Davis, 1934, p. 684, figs. 25, 29. Summit Lake, 6300 ft.; Cameron Lake, 5500 ft.; Olson Creek Valley, 5000 ft.; Grinnell Lake, 5000 ft.; Canyon Creek, 5700 ft.; Bowman Lake, 4000 ft.

Phalangium opilio Linnaeus, 1758. Bishop, 1949, p. 183, figs. 29-33. Summit of Marias Pass, 5200 ft. Roewer, 1952, described a new species, *Opilio angulatichelis*, from Glacier Park. This new *Opilio* differs from *Phalangium opilio* chiefly in having poorly developed spurs on the second segment of the chelicerae and having the supra-cheliceral laminae unarmed. This condition is present in some juveniles of *Phalangium opilio* and it seems probable that the specimen in question may be an immature male of that species.

Order Araneae (Spiders)

Theridiidae (Comb-footed spiders)

Ctenium vigerens (Chamberlin and Ivie), 1933. Kaston, 1946, p. 13, figs. 9, 10, 29-31, 55. Under logs and stones. Waterton Lake, 4200 ft.; Grinnell Glacier trail, 5500 ft.; St. Mary River Valley, 4900 ft.; Two Medicine Lake, 5200 ft.; Avalanche Creek, 3500 ft.

Dipoena nigra (Emerton), 1882. Kaston, 1948, p. 90, figs. 88-90. Ole Creek, (coll. L. P. Schultz).

Steatoda hespera Chamberlin and Ivie, 1933, p. 9, figs. 4-6. On buildings. Many Glacier. (coll. J. G. Edwards); Josephine Lake, 4800 ft.; Cut Bank Creek, 5100 ft.; Two Medicine Lake, 5200 ft.; Bowman Lake, 4100 ft.

Theridion (Allotheridion) differens Emerton, 1882. Kaston, 1948, p. 103, figs. 123-124, 144-145. Sweeping in lodgepole forest. In North Fork Valley at Kintla Creek, 3900 ft., and near Logging Creek, 3400 ft.; Bowman Lake, 4100 ft.

Theridion (Allotheridion) montanum Emerton, 1882, p. 10, pl. 1, fig. 3. On vegetation. Rowe Brook, 6000 ft.; Bertha Lake, 5800 ft.; Grinnell Glacier trail, 5500 ft.; Two Medicine Lake, 5200 ft.

Theridion (Allotheridion) ohlerti Thorell, 1870. Levi and Levi, 1951, p. 220, figs. 3, 7,

³ *Homolophus biceps* (Thorell) was not collected in Glacier Park, although it is abundant in the southern Rockies, the northernmost localities from which we have collected it being Fremont County, Idaho and the Jackson Hole area, Wyoming. A specimen from Togwotee Pass, Wyoming, was recently described as a new species and placed in a new genus (*Togwoteus granipalpus*) by Roewer, 1952. A comparison of our own specimens from the type locality and the immediate vicinity, in which *H. biceps* is common, revealed that characters on which the new genus and species are based are variable. It is undoubtedly *H. biceps*.

¹ Received for publication April 14, 1954.

² Present address: Dept. of Zoology, University of Wisconsin, Madison.

8, ♀. *T. simulatum* Emerton, 1926, p. 115, figs. 1, 2, ♂. On vegetation. Grinnell Glacier trail, 5500 ft.; Bowman Lake, 4200 ft.

Theridion rugosa (Emerton), 1909. Eno-plognatha pikes Chamberlin and Ivie, 1942, figs. 89-91. Under stones above timberline. Carthew Lakes, 6500-7200 ft.; Piegan Pass, 7900 ft.; Cut Bank Pass, 7600 ft.

Theridion (*Allotheridion*) *sexpunctatum* Emerton, 1882, p. 12, pl. 2, fig. 5. On vegetation. Bertha Lake Trail, 5400 ft.; Two Medicine Lake, 5200 ft.; Bowman Lake, 4100 ft.; North Fork road near Logging Creek, 3400 ft.

Theridion (*Allotheridion*) *zelotypum* Emerton, 1882, p. 11, pl. 4, fig. 4, ♀. Kaston, 1948, p. 109, fig. 150, ♂. Sweeping in lodgepole forest. Bowman Lake, 4100 ft.

Linyphiidae

Subfamily Linyphiinae. (Sheet-web weavers)

Bathyphantes sp. (close to *pullatus*). In lodgepole pine log. Bowman Lake, 4000 ft., ♀.

Lepthyphantes aldersoni, new species. Figure 10.

Female: Carapace, clypeus, chelicerae, maxillae, coxae, and legs yellow-brown. Labium dusky, sternum yellow-gray with margin dusky. Abdomen dorsum gray-white with three longitudinal rows of three gray spots each, followed by a series of transverse bars which become very narrow toward the spinnerets. Sides glossy gray with white flecks, venter glossy gray with a pair of lateral light lines. Spinnerets and epigastric region yellowish. Anterior eye row straight, posterior row slightly recurved. Anterior median eyes smallest, in a ratio of 3:5 to others which are subequal. Anterior medians one-fourth diameter apart, one diameter from laterals. Posterior medians three-fourths diameter apart, one-half diameter from laterals. Anterior and posterior laterals almost touching. Clypeus straight, undercutting eye region, and as high as three to four diameters of anterior median eyes. This species can be distinguished from other members of the genus by the epigynum (fig. 10). Total length, 2.90 mm. Carapace, 1.11 long, 0.85 wide. First femur, 1.28; patella and tibia, 1.53; metatarsus, 1.28; tarsus, 0.85. Second patella and tibia, 1.36; third, 1.19; fourth, 1.53.

Type locality: the female holotype was collected in Waterton National Park, Alberta, under stones near Lower Carthew Lake, 6500-7200 ft., on July 27, 1953.

Lepthyphantes arborea (Emerton), 1915. Zorsch, 1937, p. 885, figs. 64-66. Sweeping vegetation. Bertha Lake trail, 5400 ft.

Lepthyphantes berthae, new species. Figure 9.

Female: Carapace pale yellow with a dusky margin and central mark. Clypeus and labium yellow with dusky. Maxillae yellow with white tips. Sternum yellow shaded with dusky and with a dusky margin. Chelicerae, palpi, and legs yellow. Coxae whitish. Abdomen dorsum gray-white flecked with white and overlaid with an indistinct gray pattern of paired spots and transverse bars. Sides gray, flecked with white, venter gray-white. Both eye rows slightly recurved. Anterior median eyes smallest, in a ratio of 2:3 to others, which are subequal. Anterior median eyes three-fourths diameter apart, one diameter from laterals. Posterior median eyes separated by one diameter, one-half diameter from laterals. Anterior and posterior laterals almost touching. Clypeus as high as two diameters of anterior median eyes, slanting forward from below eyes. Chelicerae divergent distally. This species can be distinguished from other members of this genus by the epigynum (fig. 9). Total length, 2.38 mm. Carapace, 0.94 long; 0.76 wide. First femur, 1.36; patella and tibia, 1.53; metatarsus, 1.19; tarsus, 0.68. Second patella and tibia, 1.36; third, 1.02; fourth, 1.36.

Type locality: The female holotype was collected in Waterton National Park, Alberta, at Bertha Lake, 5800 ft., on July 29, 1953.

Lepthyphantes calcarata (Emerton), 1909. Zorsch, 1937, p. 874, figs. 40-43. On building. Cut Bank Creek, 5100 ft.

Lepthyphantes chamberlini Schenkel, 1950. Levi and Levi, 1951, p. 222, figs. 4, 6. This species has been collected with *L. calcarata* in the San Juan Mountains, Colorado, and may be the female of that rare species. Cut Bank Creek, 5200 ft.

Lepthyphantes pollicaris Zorsch, 1937, p. 897, figs. 91-93, ♂. Fig. 8. Under stones and logs. Carthew Lakes, 6500-7200 ft.; Grinnell Glacier trail, 5500 ft.; Bowman Lake, 4000 ft.; Numa Ridge, 5000 ft.

Lepthyphantes rainieri Emerton, 1926. Zorsch, 1937, p. 895, figs. 83-87. On vegetation. Bertha Lake trail, 5400 ft.

Lepthyphantes sammamish, new species. Figures 11-13.

Female: Carapace yellow with radiating dusky marks and dusky margin. Clypeus

and chelicerae yellow with light dusky shading. Maxillae, legs and palpi yellow, coxae yellow-white. Sternum and labium yellow, heavily shaded with dusky, anterior margin dark gray. Abdomen dorsum yellow-white, lightly shaded with dusky; venter slightly darker with indications of a pair of lateral light lines. Spinnerets yellow-white, surrounded by a dark dusky ring. The female paratype from Montana is darker in coloration. Both eye rows straight. Anterior median eyes slightly smaller than other eyes, which are subequal. Anterior median eyes one-half diameter apart, three-fourths diameter from laterals. Posterior medians three-fourths diameter apart, same distance from laterals. Anterior and posterior lateral eyes touching. Clypeus equals four diameters of anterior median eyes. Epigynum illustrated by figure 11. Total length, 3.2 mm. Carapace 1.53 long, 1.19 wide. First femur, 1.36; patella and tibia, 1.70; metatarsus, 1.15; tarsus, 0.72. Second patella and tibia, 1.36; third, 1.19; fourth, 1.62.

Male: In color the male is similar but darker than the female allotype. Carapace yellow-orange with dusky radiating marks and a dusky shield-shaped mark on the back of the head. The sternum is greenish shaded with dark dusky. The abdomen dorsum is dark dusky flecked with white and with a narrow median light line, venter glossy dark gray with a pair of lateral longitudinal light lines. Both eye rows straight. Anterior median eyes slightly smaller than others, which are subequal. Anterior medians less than one-half diameter apart, one-half diameter from laterals. Posterior medians less than one diameter apart, same distance from laterals. Anterior and posterior laterals touching. Clypeus slightly higher than three diameters of anterior median eyes. Palpus illustrated by figures 12 and 13. Total length, 2.8 mm. Carapace, 1.36 long, 1.10 wide. First femur, 1.36; patella and tibia, 1.62; metatarsus, 1.11; tarsus, 0.77. Second patella and tibia, 1.45; third, 1.19; fourth, 1.53. This species is tentatively placed in *Lepthyphantes* because of its similarity to the members of that genus. It differs, however, in that the epigynum lacks the characteristic scape.

Type specimens: The male holotype and female allotype were collected on May 23, 1953 at Lake Sammamish State Park in King County, Washington, by B. Malkin and C. Taylor. A female paratype was collected in Glacier National Park, Montana, in the St. Mary River valley, 4900 ft., on Aug. 7, 1953.

Linyphia marginata C. L. Koch, 1834. Kaston, 1948, p. 122, figs. 220-230. In webs between rocks or in shrubs. Many Glacier, 5000 ft.; Roes Creek, 5100 ft.; Bowman Lake, 4100 ft.; Numa Ridge, 5000 ft.; Fish Lake, 4100 ft.; Sprague Creek, 6000 ft.

Linyphia pusilla Sundevall, 1830. Kaston, 1948, p. 124, fig. 231-236. Sweeping in wet meadow. Bowman Lake, 4000 ft.

Meioneta ordinaria Chamberlin and Ivie, 1947, p. 59, figs 74, 75. Under logs and stones. Waterton Lake, 4200 ft.; Bowman Lake, 4000 ft.

Meioneta sp. Carthew Lakes, 6500-7200 ft., ♀; pass above Cobalt Lake, 7300 ft., ♂.

Pityohyphantes cristatus Chamberlin and Ivie, 1942, p. 58, figs. 141-143. Although females were very common in shrubs in forested parts of the parks, the identification of this species was based on the males. Only two males were collected, one from Rowe Brook, 6000 ft., the other from Cut Bank Creek, 6000 ft. Both were ascribed to *P. cristatus* in spite of the considerable differences in the tibial spurs of the two specimens.

Subfamily Erigoninae (Dwarf spiders)

Ceraticelus atriceps (O. P.- Cambridge), 1874. Crosby and Bishop, 1925, p. 15, figs. 15-18. Fig. 6. Sweeping vegetation. Josephine Lake, 4800 ft.; North Fork road at Kintla Creek, 3900 ft.

Ceraticelus crassiceps Chamberlin and Ivie, 1938, p. 68, figs. 52-54. Fig. 7. Sweeping vegetation. Near Babb, Glacier Co., 4500 ft.; Cut Bank Creek, 5200 ft.; North Fork road at Kintla Creek, 3900 ft.; Bowman Lake, 4100 ft. (very common).

Ceraticelus fissiceps (O. P.- Cambridge), 1874. Crosby and Bishop, 1925, p. 22, figs. 39-43, 111. Fig. 5. Sweeping in lodgepole. Bowman Lake, 4100 ft. (very common).

Ceraticelus rowensis, new species. Figures 1-4.

Female: Carapace brown to orange-brown, eye region black. Some specimens have dusky radiating marks on carapace. Clypeus black near eyes, orange-brown at margin. Sternum orange-brown to dark brown, labium dark brown. Chelicerae, maxillae and legs yellow-gray. Abdomen gray to light orange, sclerotized parts orange. Cephalothorax highest in eye region. Anterior eye row straight, posterior row slightly recurved. Anterior median eyes one diameter apart,

two diameters from laterals. Posterior medians one and one-half diameters apart, slightly more than one diameter from laterals. Anterior and posterior laterals nearly touching. Diameter of anterior medians 0.7 of posterior medians, which are equal in size to posterior laterals. Width of oval anterior laterals equals diameter of posterior medians. Clypeus as high as five diameters of anterior median eyes. Abdomen sparsely clothed with dark hairs, marked with four dorsal sclerotized muscle scars, a ring around pedicel and a band anterior to spinnerets ventrally. Epigynal area separated from epigastric plates by a narrow non-sclerotized strip on each side. Epigynum and female genitalia illustrated by figures 1 and 2. Total length 1.8-2.1 mm. Total length of female allotype, 1.85. Carapace 0.78 long, 0.65 wide, 0.34 high. First patella and tibia, 0.65; second, 0.59; third, 0.52. Fourth femur, 0.60; patella and tibia, 0.66; metatarsus, 0.42; tarsus, 0.30.

Male: Carapace orange-brown with a central dusky mark. Larger lobe of head dusky greenish with a pair of longitudinal dark dotted lines. Smaller lobe black. Sclerotized parts of abdomen orange, remainder dusky on yellowish background. A large scutum covers most of dorsum of abdomen, sclerotized rings around pedicel and spinnerets. Head region bulbous (fig. 3), divided into two lobes by a deep constriction between the anterior and posterior median eyes. Lateral eyes nearly touching. Diameter of anterior median eyes 0.7 of other eyes, which are subequal. Tibial apophysis deeply notched and with a large tooth (fig. 4) though both notch and tooth are reduced in a specimen from Sunwapta Pass, Alberta. The males of this species differ from all others in the genus in the shape of the carapace (fig. 3) and the palpus (fig. 4). Total length of male holotype, 1.75 mm. Carapace 0.84 long, 0.65 wide, 0.49 high at lobe on head. First patella and tibia, 0.65; second, 0.59; third, 0.52. Fourth femur, 0.60; patella and tibia, 0.68; metatarsus, 0.43; tarsus, 0.27.

All specimens were collected running on moss and rocks in sunshine.

Type locality: The male holotype, female allotype and one male and nine female paratypes were collected in Waterton National Park, Alberta, at Upper Rowe Lake, 7100 ft., on July 24, 1953.

Records: Hidden Lake Pass, 7100 ft., Aug. 8, 1953, 2 ♂, 1 ♀; Sunwapta Pass, 6900 ft.,

in Jasper National Park, Alberta, Aug. 10, 1951, 1 ♂.

Ceraticelus sp. Sweeping vegetation. Josephine Lake, 4800 ft., ♀.

Ceratinella brunnea Emerton, 1882, p. 36, pl. 8, fig. 3. Sweeping in lodgepole forest. Bowman Lake, 4100 ft.

Ceratinops sp. Two Medicine Lake, 5200 ft., ♀.

Collinsia clypiella (Chamberlin), 1920. Crosby and Bishop, 1928, p. 64, figs. 78-80, ♂. Fig. 17. Josephine Lake, 4800 ft.

Collinsia ksenia (Crosby and Bishop), 1928, p. 428, figs. 81-83. Fig. 18. At timberline under stones. Iceberg Lake, 6000 ft. Described from Mt. Rainier National Park, Washington, but also known from British Columbia and Alaska.

Collinsia plumosa (Emerton), 1882. Crosby and Bishop, 1928, p. 70, figs. 97-99, 101, ♂. Chamberlin, 1948, p. 490, figs. 6, 7, ♀. Fig. 16. Under rocks. Belly River (coll. J. G. Edwards).

Collinsia wilburi, new species. Figures 14-15, 27.

Male: Carapace orange with radiating dusky marks and dusky margin. Thoracic groove a short longitudinal brown mark. Clypeus orange shaded with dusky; chelicerae, maxillae, and legs orange. Coxae yellow-orange. Sternum orange shaded with dusky, a dark band inside orange margin. Abdomen gray flecked with whitish, faint indication of dorsal transverse whitish marks. Spinnerets and epigastric plates whitish. Both eye rows straight or nearly straight. Anterior median eyes smallest, in a ratio of 2:3 to others, which are subequal. Anterior medians one diameter apart, more than one diameter from laterals. Posterior medians almost one diameter apart, one diameter from laterals. Anterior and posterior laterals nearly touching. Clypeus straight, as high as three diameters of anterior median eyes. Chelicerae very large with a well developed tooth and a cluster of hair tipped tubercles on anterior face (fig. 27). It can be distinguished from other members of the genus by the palpus (figs. 14-15). Total length: 2.1 mm. Carapace, 1.06 long, 0.77 wide. First femur, 0.85; patella and tibia, 0.98; metatarsus, 0.59; tarsus, 0.47. Second patella and tibia, 0.89; third, 0.72; fourth, 0.98.

The placement of this species in *Collinsia* is tentative.

Type locality: The male holotype was found in Glacier National Park, Montana, at Iceberg Lake, 6000 ft., under stones, on July 15, 1953.

Colonus ?siou Chamberlin, 1948, p. 525, fig. 48, 49. Under stones. Iceberg Lake, 6000 ft., ♀.

Colonus sp. Sweeping vegetation. North Fork road near Ford Creek, 3800 ft., ♀.

Disembolus chera (Chamberlin and Ivie), 1933. *D. stridulans* Chamberlin and Ivie, 1945, p. 226, figs. 14-18. At timberline under rocks. Hidden Lake Pass, 7100 ft.

Dismodicus modicus Chamberlin and Ivie, 1947, p. 35, fig. 32. Sweeping vegetation. Josephine Lake, 4800 ft.; Bowman Lake, 4100 ft.

Erigone denticulata Chamberlin and Ivie, 1938, p. 57, fig. 2. Two Medicine Lake, 5200 ft.

Erigone sp. At timberline under rocks. Hidden Lake Pass, 7100 ft., ♀.

Islandiana alata (Emerton), 1919, p. 3, figs. 5-7. [not *Aduva alata* (Emerton), Bishop and Crosby, 1936] Above timberline under rocks. Swiftcurrent Mountain, 8000 ft.

Maso sundevalli (Westring), 1851. Kaston, 1948, p. 145, fig. 346-350. Sweeping wet meadow. Bowman Lake, 4,000 ft.

Pelecopsis sculptum (Emerton), 1917. Crosby and Bishop, 1931, p. 382, figs. 80-85. Grinnell Glacier trail, 5500 ft.

Sisicottus sp. Above timberline, under rocks. Swiftcurrent Mountain, 7500 ft., ♀.

? *Tigellinus* sp. At timberline, under stones. Upper Rowe Lake, 7100 ft., ♀; Iceberg Lake, 6000 ft., ♀; Swiftcurrent Mountain, 7500 ft., ♀.

Walckenaera vigilax (Blackwall), 1853. Kaston, 1948, p. 206, figs. 639-640, 659-661. At timberline under stones. Upper Rowe Lake 7100 ft.; Iceberg Lake, 6,000 ft.

erigonid In lodgepole pine log. Bowman Lake, 4000 ft., ♀.

Argiopidae (Orb weavers)

Araneus gemmoides Chamberlin and Ivie, 1935, p. 22, fig. 80, ♀. Levi, 1951, p. 12, figs.

14-16, ♂. Outside Many Glacier Hotel (coll. J. G. Edwards).

Araneus marmoreus Clerck, 1757. *Epeira raji*, Kaston, 1948, p. 257, figs. 816-822. In shrubs along meadows or in woods. Town of Waterton, 4300 ft.; Roes Creek, 5100 ft.; Cut Bank Creek, 5200 ft.; Bowman Lake, 4100 ft.

Araneus nordmanni (Thorell), 1870. Kaston, 1948, p. 250, figs. 783-784, 793-795. Very common in forested parts of the eastern slope, especially in the St. Mary River Valley.

Araneus patagiatus Clerck, 1757. *E. dumentorum*, Kaston, 1948, p. 255, figs. 788, 804, 813. Common throughout park on buildings at lower elevations.

Araneus solitarius (Emerton), 1884. Kaston, 1948, p. 250, figs. 785-786, 796-797. Sweeping in aspen woods. Marias Pass summit, 5200 ft.

Araneus trifolium (Hentz), 1847. Kaston, 1948, p. 258, figs. 823-825. Common in shrubs along forest edge up to an elevation of 5200 ft.

Araniella displicata (Hentz), 1847. Kaston, 1948, p. 258, fig. 806, ♀. Collected commonly by sweeping in light woods at low elevations.

Cyclosa conica (Pallas), 1772. Kaston, 1948, p. 236, figs. 711-713. Common on the west slope in light forest. On the east slope, collections were made at Josephine Lake, 4800 ft.; St. Mary River Valley, 4900 ft.

Neoscona arabesca (Walckenaer), 1841. Kaston 1948, p. 245, figs. 750, 771-773, 775. Sweeping shrubs. Josephine Lake, 4800 ft.

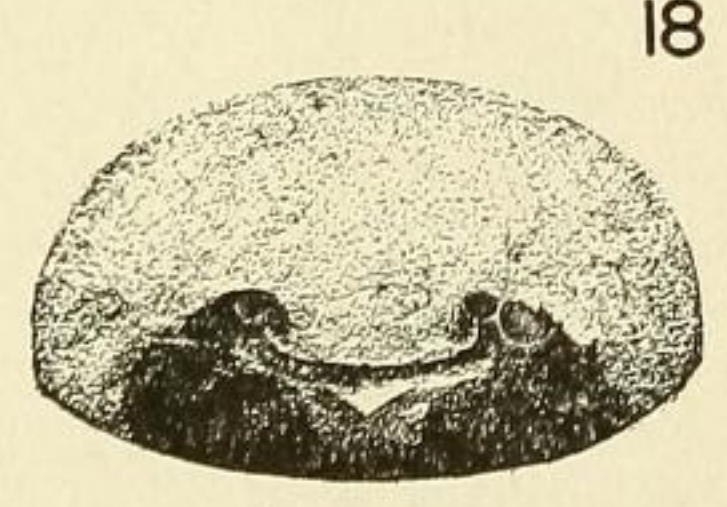
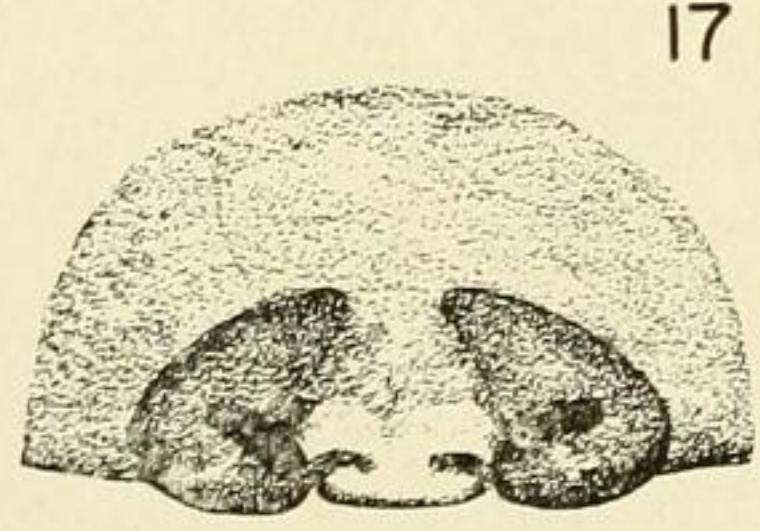
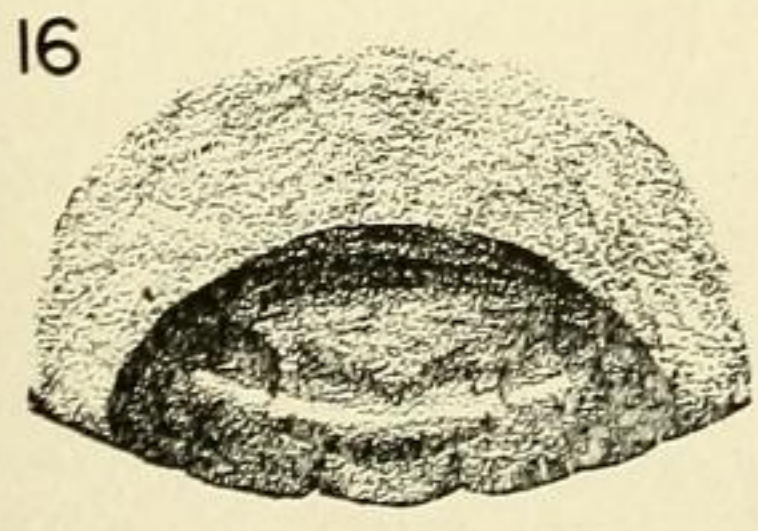
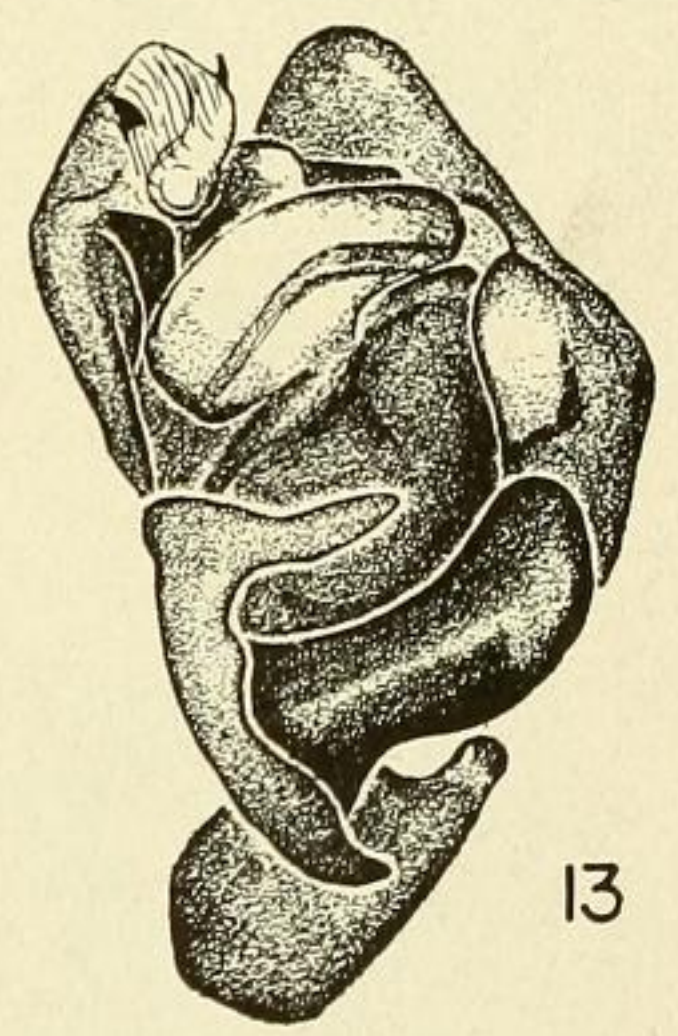
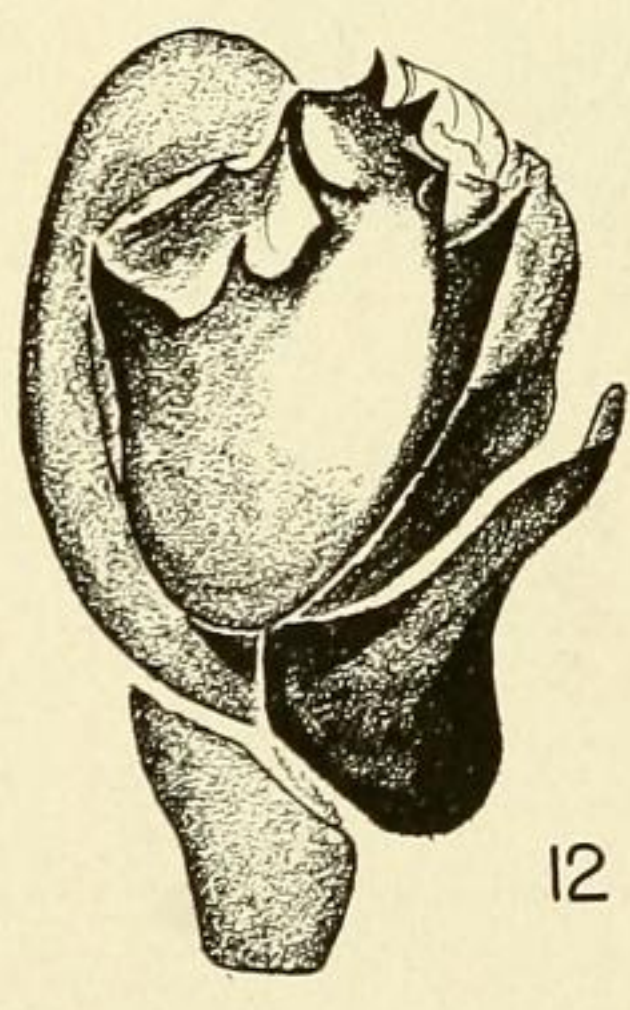
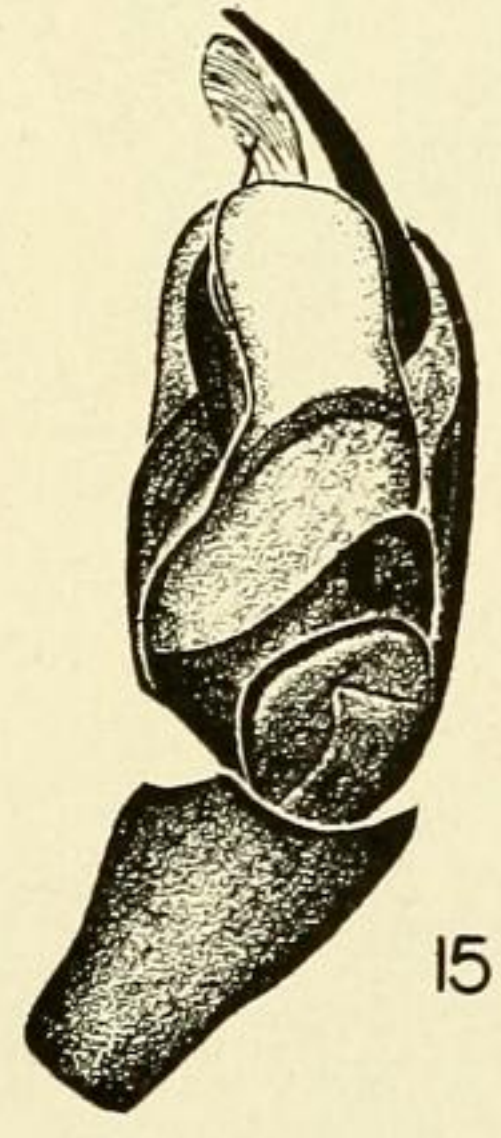
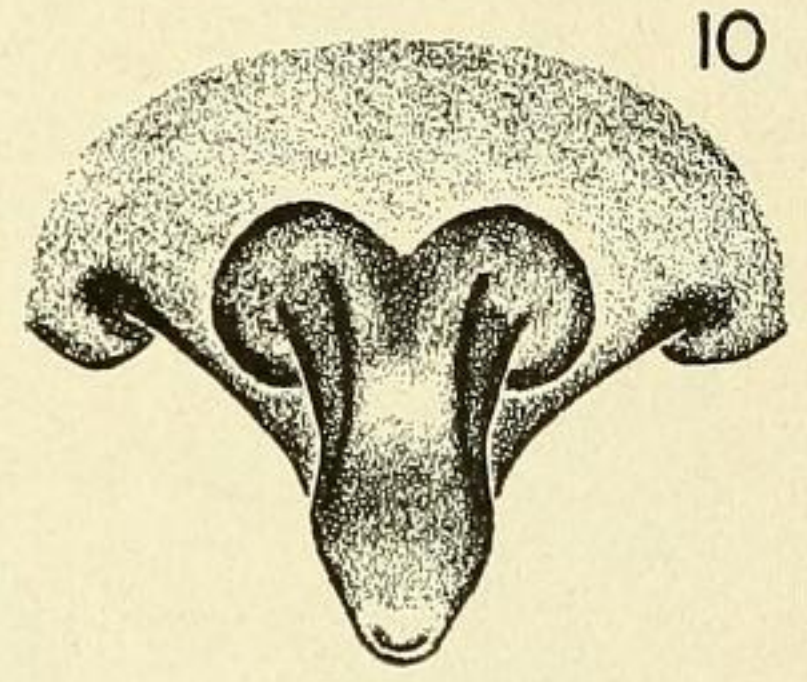
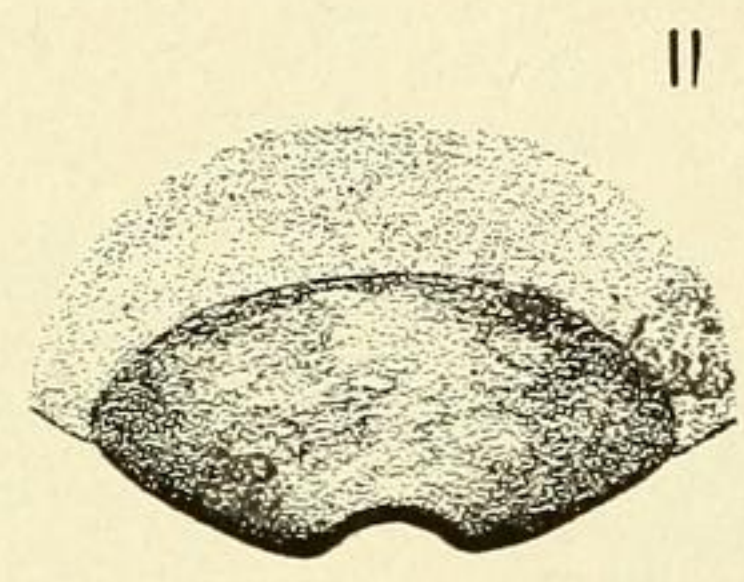
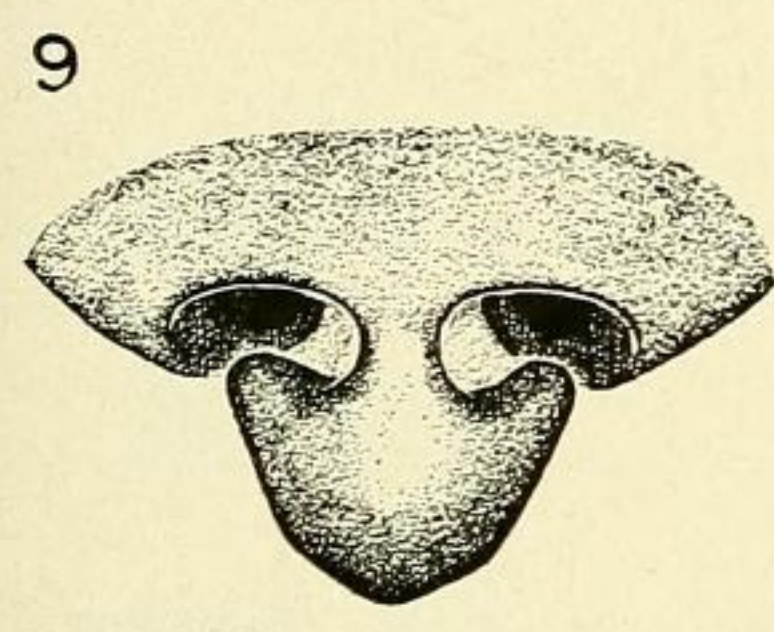
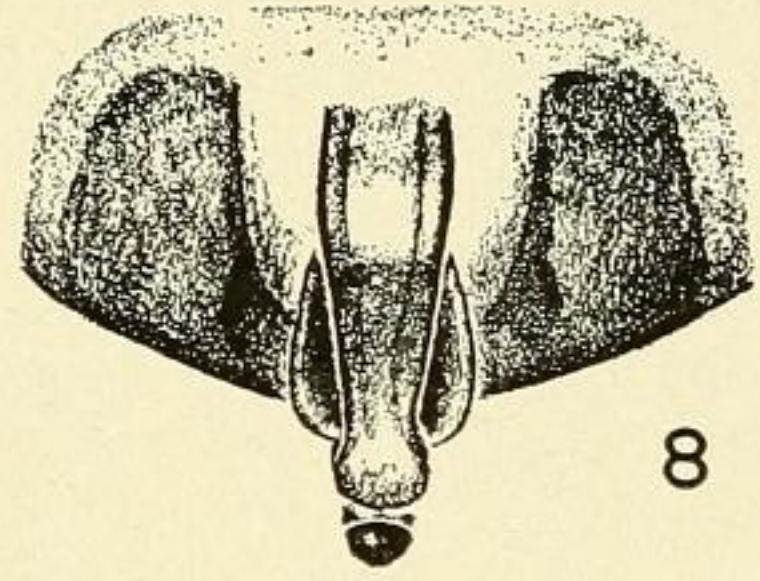
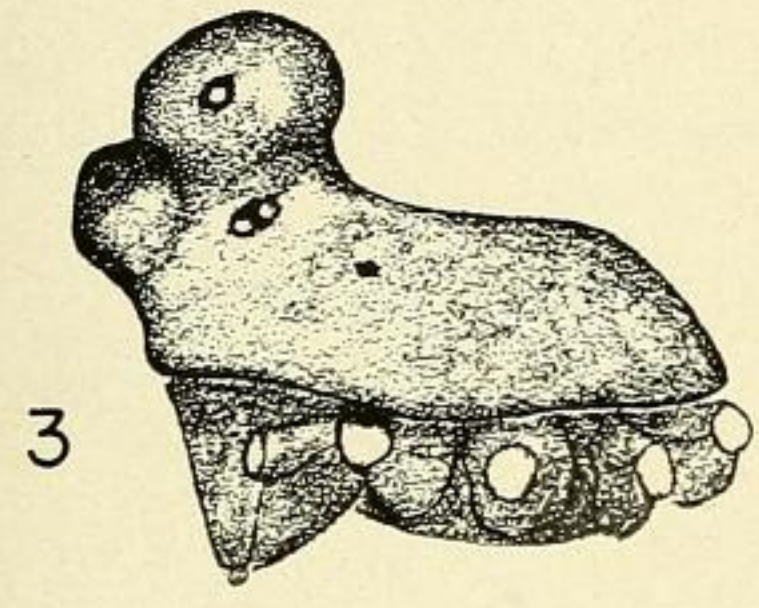
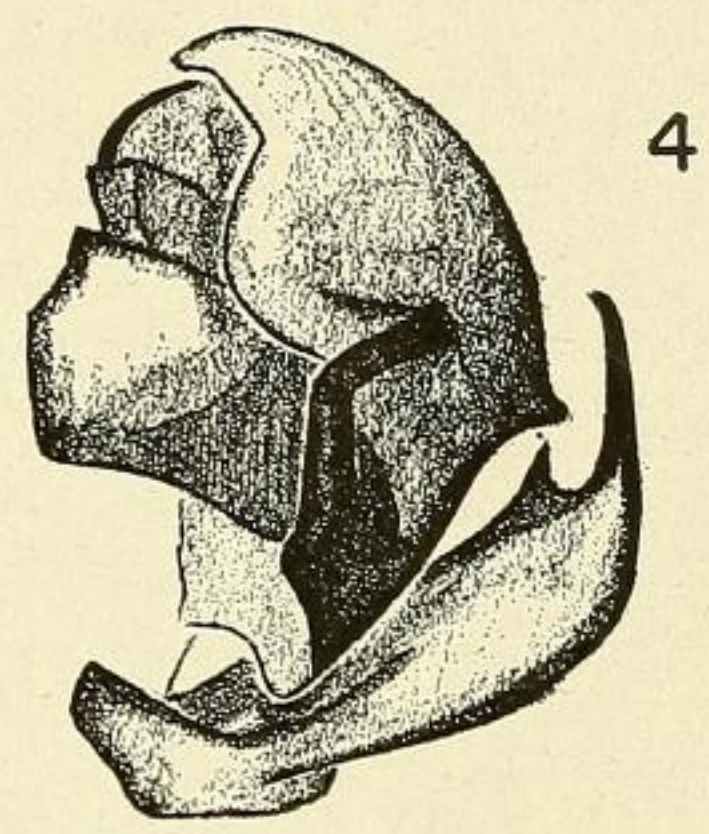
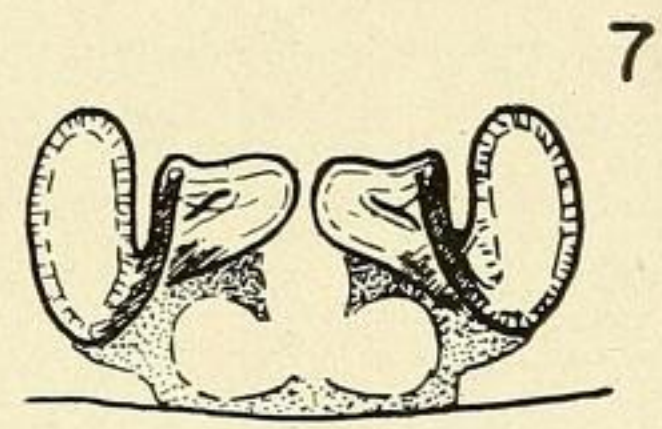
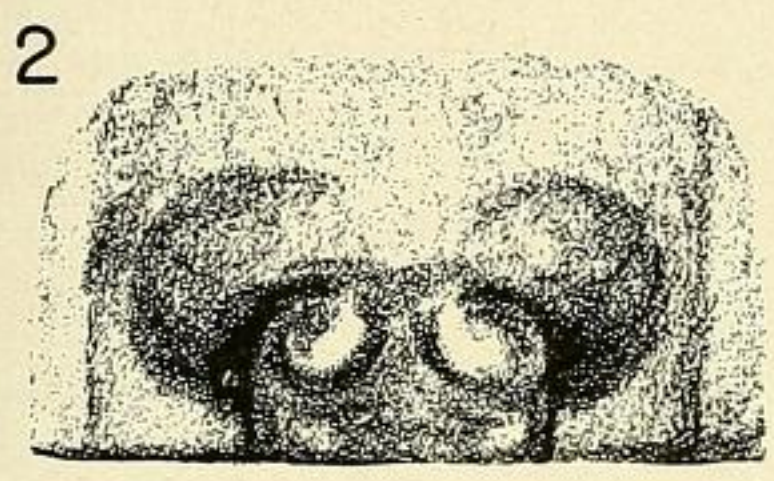
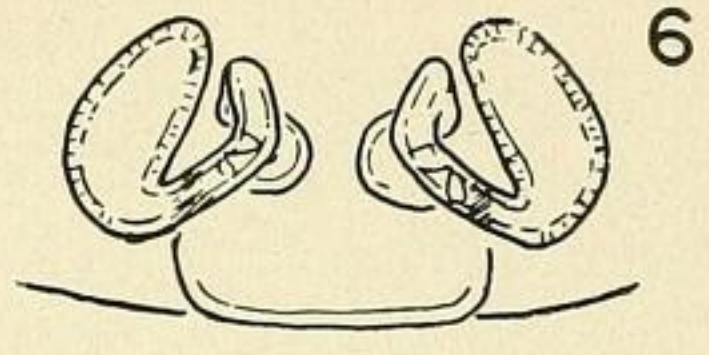
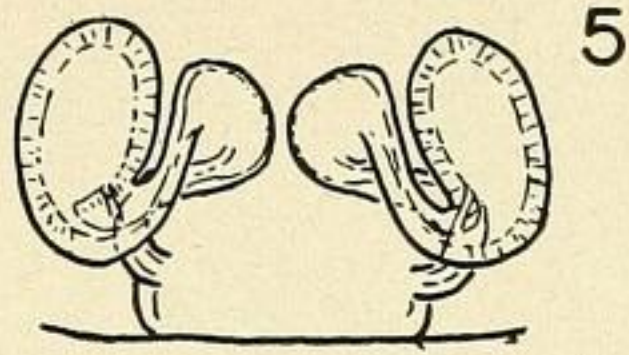
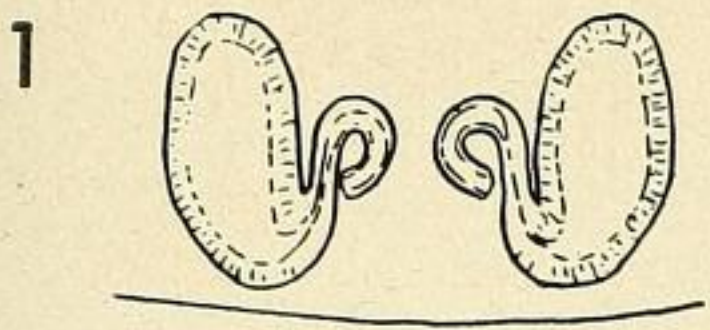
Singa variabilis Emerton, 1884. Kaston, 1948, p. 241, figs. 760-765. Bowman Lake, 4000 ft.

Tetragnatha extensa (Linnaeus), 1758. *T. manitoba* Chamberlin and Ivie, 1942, p. 61, figs. 153-158. Sweeping meadows. Bowman Lake, 4000 ft.; North Fork road near Logging Creek, 3400 ft.

Tetragnatha laboriosa Hentz, 1850. Kaston, 1948, p. 269, figs. 850-851, 859-861. Collected

PLATE 1

Figs. 1-4. *Ceraticelus rowensis*, new species. 1. Female genitalia, dorsal view. 2. Epigynum. 3. Carapace of male, lateral view. 4. Left palpus, ectal view. Fig. 5. *Ceraticelus fissiceps* (O. P.-Cambridge), female genitalia, dorsal view. Fig. 6. *Ceraticelus atriceps* (O. P.-Cambridge), female genitalia, dorsal view. Fig. 7. *Ceraticelus crassiceps* (Chamberlin and Ivie), female genitalia, dorsal view. Fig. 8. *Lepthyphantes pollicaris* Zorsch, epigynum. Fig. 9. *Lepthyphantes berthae*, new species, epigynum. Fig. 10. *Lepthyphantes aldersoni* new species, epigynum. Figs. 11-13. *Lepthyphantes sammamish*, new species. 11. Epigynum. 12. Palpus, submesal view. 13. Palpus, subectal view. Figs. 14-15. *Collinsia wilburi*, new species. 14. Palpus, mesal view. 15. Palpus, ventral view. Fig. 16. *Collinsia plumosa* (Emerton) epigynum. Fig. 17. *Collinsia clypiella* (Chamberlin), epigynum. Fig. 18. *Collinsia ksenia* (Crosby and Bishop), epigynum.



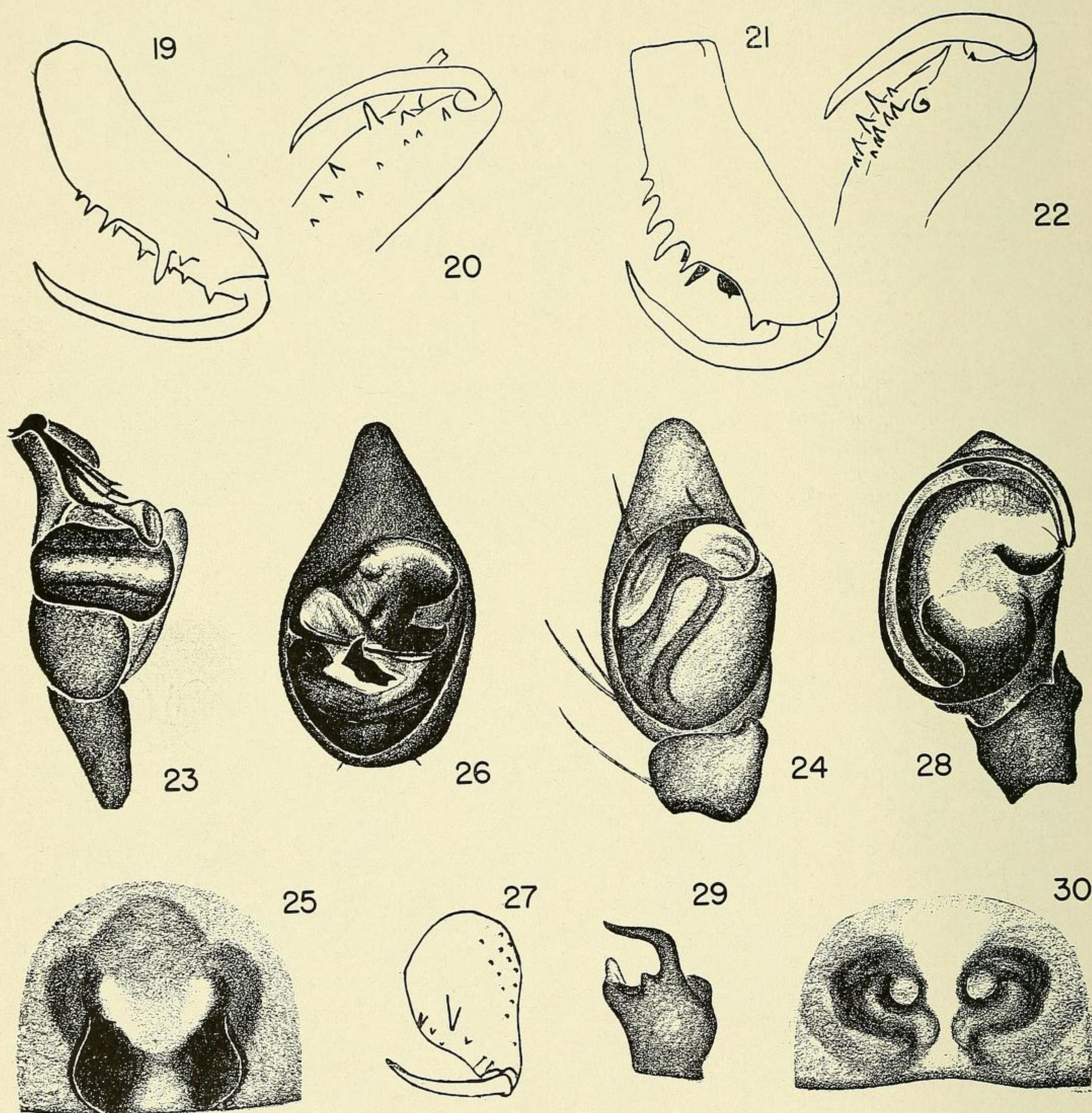


PLATE 2.

Figs. 19-23. *Tetragnatha numa*, new species. 19. Left male chelicera, anterior view. 20. Posterior view. 21. Female chelicera, anterior view. 22. Posterior view. 23. Palpus, ventral view. Figs. 24-25. *Thanatus* sp. 24. Palpus, ventral view. 25. Epigynum. Fig. 26. *Pardosa wyuta* Gertsch, palpus. Fig. 27. *Collinsia wilburi*, new species, left chelicera, anterior view. Figs. 28-30. *Cryphoea peckhami* Simon. 28. Palpus, ventral view. 29. Tibia of palpus, dorsal view. 30. Epigynum.

commonly throughout park by sweeping in meadows and aspen groves.

Tetragnatha numa, new species. Figures 19-23.

Female: Carapace and maxillae yellow-gray with some dusky markings. Chelicerae yellowish, each with a median dusky line. Sternum sooty along margin, yellow centrally. Palpi and legs yellow, distal portions of tarsi and metatarsi dusky. Abdomen dorsum silver spotted on gray-pink background with an indistinct folium, and a pair of longitudinal yellow lines. Venter of abdomen has a broad black median stripe with a narrow line of silver spots on each side. Sides of venter tan with scattered silver spots. Spinnerets brown. Abdomen somewhat thicker at base and notched above pedicel; turned up at end above spinnerets. Both eye rows are slightly recurved. Anterior median eyes are one diameter apart, two diameters from anterior laterals, and almost one and one-half diameters from posterior medians. Posterior medians are one and three-fourths diameters apart and about the same distance from the posterior laterals which are about one and one-fourth diameters from anterior laterals. Posterior medians are about 1.1 diameters, anterior laterals about 0.8 diameter of other eyes, which are subequal. Chelicerae are slightly more than half the length of the carapace. Anterior margin of fang furrow has a medium sized tooth at the apex, and after a space, five more medium to small teeth (fig. 21). The posterior margin has a medium tooth at the apex, a space, then a rather large tooth which is twisted 180° on its axis, and a row of five teeth (fig. 22). The fangs are stout, evenly curved, and only slightly more than half the length of the chelicerae. Total length 7.5 mm. Carapace, 2.2 long, 1.3 wide, 0.7 high. First femur, 4.5; patella and tibia, 5.5; metatarsus, 5.0; tarsus, 1.2. Second patella and tibia, 3.2; third, 1.5; fourth, 3.0.

Male: Coloration of cephalothorax like that of the female except that carapace has a pair of dusky lines extending from the lateral eyes to the thoracic depression. Abdomen dorsum closely silver spotted on a gray-pink background. Posterior third of abdomen has three or four pairs of dark spots on yellow stripes. Venter gray-brown with a pair of longitudinal silver spotted yellow lines. Spinnerets brown. Posterior eye row slightly recurved, anterior row nearly straight. Anterior median eyes one diameter

apart, one and one-half diameters from laterals, and slightly more than one diameter from posterior medians. Posterior medians one and one-half diameters apart, same distance from posterior laterals, which in turn, are two diameters from anterior laterals. In size the posterior median eyes are 1.2, posterior laterals 0.9, and anterior laterals 0.6 of anterior median eyes. The clypeus is as high as two diameters of the anterior median eyes. The chelicerae more than half the length of the carapace. The dorsal spur on the apical third of each chelicera is shallowly bifid. Anterior margin of the fang furrow has a small apical tooth and after a space, a large flattened tooth followed by three smaller teeth (fig. 19). The posterior margin has five well spaced teeth (fig. 20). The fangs are slightly sinuate and are about two-thirds the length of the chelicerae. The palp is illustrated by figure 23. Total length, 3.0 mm. Carapace, 1.4 long; 0.9 wide. First femur, 2.8; patella and tibia, 3.3; metatarsus, 2.5; tarsus, 1.0. Second patella and tibia, 2.2; third, 1.1; fourth, 2.1.

This species can be distinguished from other members of the genus by the large tooth on the posterior margin of each female chelicera and by the male palpus and chelicerae. It is named after Numa Ridge, near which the specimens were found.

Type locality: The male holotype and female allotype were collected by sweeping near Bowman Lake, 4100 ft., in Glacier National Park, Montana, on August 2, 1953.

Tetragnatha versicolor Walckenaer, 1841. Kaston, 1948, p. 270, figs. 852, 862-964. Commonly taken by sweeping in meadows. The webs may overhang water.

Agelenidae (Funnel-web weavers)

Agelenopsis utahana (Chamberlin and Ivie), 1933. Chamberlin and Ivie, 1941, p. 600, figs. 12, 23, 38. Collected from funnel webs among low shrubs in forest. Waterton Lake, west shore, 4200 ft.; Olson Creek, 5000 ft.; Many Glacier, 5000 ft.; Josephine Lake, 4800 ft.; Roes Creek, 5100 ft.; Bowman Lake, 4000 ft.; Numa Ridge.

Cryphoeca peckhami Simon, 1898. Figs. 28-30. Under logs and stones. Bertha Lake, 5800 ft.; Waterton Lake, west shore, 4200 ft.; Iceberg Lake, 6000 ft.; Roes Creek, 5100 ft.

Lycosidae (Wolf spiders)

Arctosa alpigena (Doleschal), 1852. Levi and Levi, 1951, p. 223, figs. 9, 20. Running

on surface of ground. Summit Lake (Waterton Park), 6300 ft.; Upper Rowe Lake, 7100 ft.; Rowe Brook, 6000 ft.; Olson Creek, 5000 ft.; Iceberg Lake, 6000 ft.

Lycosa pratensis Emerton, 1885. Kaston, 1948, p. 330, figs. 1092-1094, 1117-1118. Gunsight Lake, 5300 ft.; Bowman Lake, 4000 ft.

Pardosa anomala Gertsch, 1933 (a), p. 26, fig. 36, ♀. Levi and Levi, 1951, p. 223, fig. 10, ♂. This species was commonly collected on the east slope running on the ground at elevations near timberline. It was not collected on the west slope.

Pardosa coloradensis Banks, 1894. *P. sternalis* Chamberlin, 1908, p. 185 (in part) pl. 14, fig. 2, ♀. *P. ontariensis* Gertsch, 1933 a, p. 18, fig. 27, ♂. Josephine Lake, 4800 ft.

Pardosa concinna (Thorell), 1877. *P. muscicola* Emerton, 1911, p. 401, pl. 5, fig. 2. Cut Bank Creek, 5200 ft.

Pardosa fuscula (Thorell), 1875. Levi and Field, 1954, p. 456, figs. 65, 69. Cameron Lake, 5500 ft.

Pardosa groenlandica (Thorell), 1872. Levi and Levi, 1951, p. 225, figs. 13, 14. Commonly found running on the ground above timberline.

Pardosa mackenziana (Keyserling), 1876. Kaston, 1948, p. 338, figs. 1133-1136. Very commonly found running along the ground in all parts of the park, though slightly less abundant above timberline.

Pardosa moesta Banks, 1892. Kaston, 1948, p. 334, figs. 1122, 1123, 1137. Bowman Lake, 4000 ft.; North Fork road at Anaconda Creek, 3400 ft.

Pardosa solitudo Levi and Levi, 1951, p. 225, figs. 11, 16. Piegan Pass, 7900 ft.

Pardosa sternalis (Thorell), 1877. Chamberlin, 1908, p. 185, pl. 13, figs. 5-6. At timberline. Summit Lake, 6300 ft.

Pardosa wyuta Gertsch, 1934. *P. atra* Chamberlin, 1908, p. 188, pl. 8, figs. 3, 8, ♀. Fig. 26. Iceberg Lake trail, 5900 ft.

Tarentula aculeata (Clerck), 1757. Kaston, 1948, p. 312, figs. 1024-1025, 2139-2140. Many Glacier, 5000 ft.; Josephine Lake, 4800 ft.; Cracker Lake, 6000 ft.

Tarentula kochii Keyserling, 1876. Chamberlin, 1908, p. 263, pl. 21, figs. 4, 5. Numa Ridge, 4000 ft.; Glacier Park Headquarters, 3300 ft., (coll. J. Kendall).

Gnaphosidae (Running spiders)

Drassodes neglectus (Keyserling), 1887. Kaston, 1948, p. 351, figs. 1176, 1188-1189, 1195. Under rocks. Near Carthew Lakes, 7400 ft.

Gnaphosa brumalis Thorell, 1875. Kaston, 1948, p. 346, figs. 1156-1157, 1185. Under stones at or above timberline. Carthew Lakes, 6500-7200 ft.; Little Chief Mountain, 7500 ft. (coll. J. G. Edwards); Cut Bank Pass, 7600 ft.; pass above Cobalt Lake, 7300 ft.

Gnaphosa muscorum (L. Koch), 1866. Kaston, 1948, p. 344, figs. 1152-1155, 1160, 1177. Under stones. West shore of Waterton Lake, 4200 ft.; pass above Cobalt Lake, 7300 ft.

Gnaphosa parvula Banks, 1896. Kaston, 1948, p. 346, figs. 1161-1162, 1184. Under lodgepole log. Bowman Lake, 4000 ft.

Orodassus coloradensis (Emerton), 1877. *Drassodes melius* Chamberlin, 1919, p. 246, pl. 16, figs. 4, 5. Under logs and rocks. West shore of Waterton Lake, 4200 ft.; Josephine Lake, 4800 ft.; Swiftcurrent Ranger Station (coll. J. G. Edwards); Two Medicine Lake, 5200 ft.; Bowman Lake, 4100 ft.; Numa Ridge, 5000 ft.

Poecilochroa montana Emerton, 1890, p. 175, pl. 4, fig. 2. Olson Creek, 5000 ft.; Canyon Creek, 5700 ft.

Zelotes subterraneus (C. L. Koch), 1839. Kaston, 1948, p. 356, figs. 1248-1251. Under rocks and logs. Summit Lake, 6300 ft.; Swiftcurrent Mountain, 8000 ft.; Josephine Lake, 4800 ft.; Cracker Lake, 6000 ft.; Roes Creek, 5100 ft.; Two Medicine Lake, 5200 ft.; Bowman Lake, 4100 ft.

Clubionidae (Sac-spiders)

Clubiona canadensis Emerton, 1890. Kaston, 1948, p. 376, figs. 1288-1290, 1344-1346. Common in forested parts of parks (4100-7000 ft.), rolled up in leaves (especially leaves of *Alnus* sp. and *Rubus* sp., and sometimes of *Acer* sp.).

Clubiona trivialis C. L. Koch, 1841. Locket and Millidge, 1951, p. 140, figs. 72, 73. Carthew Lakes, 6500-7200 ft., under stones in krummholz (very common); Bowman Lake, 4100 ft., sweeping.

Micaria altana Gertsch, 1933 (b), p. 6, fig. 5, ♀; 1935, p. 17, fig. 38, ♂. Running on trail. Swiftcurrent Valley, 5200 ft.

Micaria hesperella Gertsch and Jellison, 1939. *M. constricta* Emerton, 1894, p. 414, pl. 2, fig. 5. *M. canadensis* Roewer, 1951, p. 446. Under rocks or running on rocks at or near timberline. Carthew Lakes, 6500-7200 ft.; Summit Lake, 6300 ft.; Upper Rowe Lake, 7100 ft.; Iceberg Lake, 6000 ft.; Ptarmigan Lake, 6600 ft.; Cobalt Lake, 6800 ft.; pass above Cobalt Lake, 7300 ft.

Scotinella pelvicolens (Chamberlin and Gertsch), 1930, p. 138, figs. 6-8. West shore of Waterton Lake, 4200 ft.; Grinnell Glacier trail, 5500 ft.; Roes Creek, 5100 ft.

Thomisidae (Crab spiders)

Misumena vatia (Clerck), 1757. Kaston, 1948, p. 411, figs. 1481-1482, 1496-1498. Commonly collected by sweeping meadows.

Philodromus alascensis Keyserling, 1884. Levi and Levi, 1951, p. 230, figs. 33, 34. On snow. Boulder Pass (coll. J. G. Edwards).

Philodromus aureolus (Clerck), 1757. Kaston, 1948, p. 436, figs. 1557-1559. North Fork road near Logging Creek, 3400 ft.

Thanatus sp.⁴ Figures 24-25. On and under rocks in talus. Many Glacier, 5000 ft., ♂, ♀; between Lincoln and Gunsight Passes, 6500-7000 ft., ♂. This species is currently being described from the Teton Mountains in Wyoming by Dr. D. C. Lowrie.

Tibellus oblongus (Walckenaer), 1802. Kaston, 1948, p. 440, figs. 1607-1608, 1616. Collected by sweeping meadow. Near town of Waterton; near Babb, Glacier County, 4500 ft.

Xysticus benefactor Keyserling, 1880. Gertsch, 1939, p. 399, figs. 246, 247, 260. Collected by sweeping in meadow. Near Babb, Glacier County, 4500 ft.

Xysticus labradorensis Keyserling, 1887. Gertsch, 1939, p. 401, figs. 248, 249, 268. Under rocks at or above timberline. Carthew Lakes, 6500-7200 ft.; Swiftcurrent Mountain, 8000 ft.; Dawson Pass, 7500 ft.

Xysticus lutulentus Gertsch, 1934. Gertsch, 1939, p. 396, figs. 242, 243, 262. Many Glacier, 5000 ft.; Iceberg Lake, under stones, 6000 ft.; Canyon Creek, rolled up in leaves, 5700 ft.

Salticidae (Jumping spiders)

Chalcoscirtus carbonarius Emerton, 1917, p. 271, fig. 23. On and under stones above timberline. Carthew Lakes, 6500-7200 ft. (very common); Cracker Lake, 6000 ft.; Cut Bank Pass, 7600 ft.; Dawson Pass, 7500 ft.

Evarcha hoyi (Peckham), 1883. Kaston, 1948, p. 469, figs. 1713-1717, 2134-2136. Collected from varied habitats, sweeping and under rocks. West shore of Waterton Lake, 4200 ft.; Many Glacier, 5000 ft.; Bowman Lake, 4100 ft.; North Fork road near Log-

ging Creek, 3400 ft.; and near Anaconda Creek, 3400 ft.

Metaphidippus californicus (Peckham), 1888. Peckham and Peckham, 1909, p. 466, fig. 5. Under stones. Carthew Lakes, 6500-7200 ft.

Metaphidippus clematus Levi and Levi, 1951, p. 232, figs. 37, 39, 40, 42. Sweeping in aspen grove. Near Babb, 4500 ft.

Metaphidippus nigromaculatus (Keyserling), 1884. Dendryphantes jeffersoni, Chamberlin and Gertsch, 1929, p. 110, fig. 51. Under stones above timberline. Carthew Lakes, 6500-7200 ft.; Piegan Pass, 7900 ft.; pass above Cobalt Lake, 7300 ft.

Metaphidippus uteanus (Chamberlin and Gertsch), 1929, p. 110, fig. 50, 51. Bertha Lake trail, 5400 ft.

Paraphidippus marginatus (Walckenaer), 1837. Kaston, 1948, p. 479, figs. 1762-1765, 1782-1784, 2131-2132. Near Babb, Glacier County, 4500 ft.

Pellenes lagganii Peckham and Peckham, 1909, p. 560, pl. 49, fig. 2, ♂. Levi and Levi, 1951, p. 232, figs. 47, 49, ♀. Under stones. Bertha Lake, 5800 ft.

Phidippus altanus Gertsch, 1934, p. 12, fig. 13, ♂. Levi and Levi, 1951, p. 232, figs. 48, 50, ♀. Ptarmigan Falls (coll. J. G. Edwards).

Phidippus johnsonii Peckham and Peckham, 1883. Peckham and Peckham, 1909, p. 404, pl. 31, fig. 1. Among stones. West shore Waterton Lake, 4200 ft.; Many Glacier, 5000 ft.; Josephine Lake, 4800 ft.; Roes Creek, 4800 ft.; near Triple Divide Pass, 7000-7600 ft.

Sitticus finschii (L. Koch), 1879. Levi and Levi, 1951, p. 232, figs. 38, 41, 44. Under stones near timberline. Near Triple Divide Pass. 7000 ft.; between Lincoln and Gunsight Passes, 6500-7000 ft.

Sitticus palustris (Peckham and Peckham), 1883. Kaston, 1948, p. 458, figs. 1660-1662, 1667-1668. Wet meadow. Bowman Lake, 4000 ft.

Sitticus ranieri Peckham and Peckham, 1909, p. 520, pl. 43, fig. 5. On and under rocks near timberline. Above Cameron Lake, (coll. J. G. Edwards); Grinnell Glacier trail, 6000 ft.; Cracker Lake, 6000 ft.; Hidden Lake Pass, 7100 ft.; between Lincoln and Gunsight Passes, 6500-7000 ft.

Uloboridae (Feather-foot spiders)

Hyptiotes gertschi Chamberlin and Ivie, 1935, p. 12, figs. 38, 39. Roes Creek, 5100 ft.

⁴ This species has been described as *Apollophanes patricia* Lowrie and Gertsch, 1955, Amer. Mus. Novitates, no. 1736, p. 18, figs. 25, 26, 28. An additional record is of one male, Rainbow Peak, 8000 ft., Glacier Park (coll. J. G. Edwards).

Dictynidae (Hackled band weavers)

Callobius nomeus (Chamberlin), 1919, p. 240, pl. 14, figs. 1, 2. Josephine Lake, 4800 ft.; Cut Bank Creek, 5100-5200 ft.; Two Medicine Lake, 5200 ft.; North Fork road at Kintla Creek, 3900 ft.; Avalanche Creek, 3500 ft.

Dictyna alaskae Chamberlin and Ivie, 1947, p. 13, figs. 2, 3. Rowe Brook, 6000 ft.; Bowman Lake, 4100 ft.

Dictyna annulipes Blackwall, 1846. *D. muraria*, Kaston, 1948, p. 506, figs. 1893, 1919-1926. Bowman Lake, 4100 ft.

Dictyna coloradensis Chamberlin, 1919, p. 241, figs. 6-8. West of Babb, Glacier County.

Dictyna major Menge, 1869. *D. vincens* Chamberlin, 1919, p. 243, figs. 1, 2. Collected fairly commonly by sweeping in high grass at lower elevations with the exception of one female which was collected at Upper Rowe Lake, 7100 ft.

Dictyna peragrata Bishop and Ruderman, 1946, p. 3, figs. 5-8. Rowe Brook, 6000 ft.; Josephine Lake, 4800 ft.; Two Medicine Lake, 5200 ft.; Bowman Lake, 4100 ft.; Sprague Creek camp ground, 3200 ft.

Dictyna phylax Gertsch and Ivie, 1936, p. 7, figs. 29, 30. Bowman Lake, 4100 ft.

Lathys alberta Gertsch, 1946, p. 3, fig. 11. Carthew Lakes, 6500-7200 ft.; Piegan Pass, 7900 ft.; Dawson Pass, 7500 ft.

Pagomys monticola Gertsch and Mulaik, 1936, p. 2, fig. 2. Under stones, Iceberg Lake, 6000 ft.; Cracker Lake, 6000 ft.

Titanoeca sp. Cracker Lake, 6000 ft., ♀; Hidden Lake Pass, 7100 ft., ♀; between Lincoln and Gunsight Passes, 6500-7000 ft., ♀.

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