Mygalomorph spiders from southwestern Oregon, USA, with descriptions of four new species

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Abstract

Extensive pitfall trapping in the Siskiyou and southern Cascade Mountains in southwestern Oregon, USA, revealed the presence of four new species of Antrodiaetus spiders (Antrodiaetidae) as well as numerous examples of the rarely reported Hexura rothi (Mecicobothriidae). The new species are: Antrodiaetus ashlandensis, A. coylei, A. effeminatus, and A. metapacificus. Additional records were also obtained for Antrodiaetus pugnax and Atypoides gertschi (Antrodiaetidae). Distributional data are provided for each species. The four new species are described and illustrated and a taxonomic key to all mygalomorph spiders from southwestern Oregon is provided. Further, each of the previously described Antrodiaetus spp. from the region is diagnosed. The morphology of the male genital plate is proposed as a potentially useful taxonomic character.

Key words: Araneae, Mygalomorphae, Antrodiaetidae, Dipluridae, Mecicobothriidae, Antrodiaetus, Atypoides, Hexura, Microhexura, Oregon, Cascade Mountains, Siskiyou Mountains

Introduction

In Oregon, mygalomorph spiders have only been recorded from the families Dipluridae [only Microhexura idahoana Chamberlin & Ivie (see Coyle 1981)], Mecicobothriidae [two rare species of Hexura Simon (see Gertsch & Platnick 1979)] and Antrodiaetidae. The Antrodiaetidae is made up of three genera and 28 species of folding trap-door spiders from North America and Japan (Platnick 2005). Coyle (1968, 1971, 1974, 1994), Coyle and Icenogle (1994), and Hendrixson and Bond (2004) have revised the taxonomy of the
member genera and reviewed the known biological and ecological information. Some additional ecological information was provided by Crawford and Edwards (1989), McIver et al. (1992), and Opler and Lattin (2001). The antrodiaetid genus *Aliatypus* Smith is known from northern California and points south and east, but no records are known from Oregon (Coyle & Icenogle 1994: fig. 1). Eight species (four newly described herein) of *Antrodiaetus* and *Atypoides gertschi* Coyle are found in southwestern Oregon. During extensive pitfall trapping studies in the Ashland/Medford and Grants Pass/Cave Junction regions numerous new records were obtained as well as significant new distributional and biological information. It is the purpose of this article to document new data on the biology of these spiders and to name the four new species. Additionally, a taxonomic key to the Mygalomorphae of the region is provided. Diagnoses are also provided for all the *Antrodiaetus* spp. recorded from southwestern Oregon.

**Materials and methods**

All spiders were collected using pitfall traps. Traps consisted of a 2 liter plastic bucket (14 cm diameter opening) fitted with a metal funnel and covered with a 25 x 25 cm plastic rain cover, supported with nails, 5 cm above the trap. Trap buckets were buried in the ground with their tops placed flush with the surface of the forest floor. A 250 ml glass canning jar partially filled with ethylene glycol (50% solution) was placed beneath each funnel to catch and preserve arthropods falling into the traps. In the laboratory, spiders were separated from other arthropods and preserved in 70% ethanol. The collection date presented under “Material Examined” and “Type Material” is the date that pitfall samples were collected. In most cases, this period represented 14 days, although the final trapping interval during 1999 was 21 days. The range of dates for which each pitfall trap was open is described within “Study Areas.” Spider abundances are presented as the total number of individuals collected per day for all traps combined within a region during each trapping period.

**Study Areas.** Spiders were collected during studies examining: 1) the response of litter arthropods to prescribed fire in the eastern Siskiyou Mountains (Niwa & Peck 2002); 2) how forest thinning affects litter arthropod communities in the southern Cascade Mountains (Peck & Niwa 2004), and; 3) landscape-level relationships between forest arthropods and plant communities in the western Siskiyou Mountains (Niwa & Peck unpubl. data). The study areas are described below.

**Eastern Siskiyou Mountains.** This study took place during 1998 within the Ashland watershed, approximately 6.4 km south of Ashland, Oregon, on the Ashland Ranger District, Rogue River National Forest. All sites were within 2 km of N42°08’, W122°42’ and ranged in elevation from 900 to 1500 m (Fig. 1). Sites were dominated by white fir [*Abies concolor* (Gordon & Glendinning) Lindley ex Hildebrand] and Douglas-fir [*Pseudotsuga menziesii* (Mirbel) Franco], but also contained minor components of
ponderosa pine (*Pinus ponderosa* Douglas ex Lawson) and sugar pine (*Pinus lambertiana* Douglas). In total, 18 stands were sampled: nine had received prescription underburning and nine were adjacent, unburned control sites. Prescribed burning took place between <1 and 15 years prior to sampling. All stands were in mid- to late-successional stages.

**FIGURE 1.** Map of Oregon showing study areas within the Siskiyou and Cascade Mountains and a list of mygalomorph species found in each area [relief map modified from: http://www.flag.wr.usgs.gov/USGSFlag/Data/maps/Oregon.gif (accessed 31 August 2005)]. Insert shows position of region within the USA.
The Ashland watershed is located on the eastern edge of the eastern Siskiyou Mountains (Waring 1969), within the northeastern part of the Klamath Mountains Province (Irwin & Hotz 1981). Soils in the area are dominated by highly erodible granitics of the Mt. Ashland Batholith. Slopes are generally steep resulting in unstable soils and occasional landslides.

Like most of southwestern Oregon, winter months are generally cool and wet while summer months are hot and dry. Most precipitation falls between October and April. Monthly precipitation recorded during 1998 at a nearby weather station (526 m) is shown in Fig. 2.


Pitfall traps were open on the following dates: 3–17 June, 17 June–8 July, 8–21 July, 4–18 August, 18 August–1 September, 15–29 September, and 29 September–13 October. Twelve traps, placed 50 m apart, were set within each site.

Overall, 3441 adult spiders were identified in this study, with 520 (15.1%) being mygalomorphs (all within the Antrodiaetidae).

**Southern Cascade Mountains.** During 1999, work took place within the Medford Resource Area, Bureau of Land Management, of the Cascade Mountains of southern
Oregon. Sites were located southeast of Ashland, and were within a 10 km radius of N42°07’, W122°26’. Elevation ranged from 1092 to 1556 m. Dominant overstory trees varied slightly among sites, but were primarily white fir or Douglas-fir, but also included sugar pine, ponderosa pine, and incense-cedar (Libocedrus decurrens Torrey). Sixteen sites were sampled: eight thinned stands and eight adjacent, unthinned stands. Thinning first occurred between 16 and 41 years prior to the study. All stands were within late-successional stages of development, and were within the white fir series, except one, which was within the Douglas-fir series (Atzet et al. 1996).

Geological features of the area consist of tertiary volcanic rocks of the Western Cascade Range, tertiary and quaternary volcanic rocks of the High Cascade Range, and quaternary surficial deposits and intrusive rocks (USDI 2000). Soils at the study sites are loam in nature, ranging from very cobbly to gravelly (Johnson 1993).

Mean annual precipitation is 86.9 cm (recorded at Howard Prairie Reservoir, < 8 km from closest site; 1392 m elevation), with 69.6% falling November–March, largely in the form of snow. Precipitation falling during 1999 is shown in Fig. 2.

Pitfall traps were open during six 2-week intervals: 7–21 June, 21 June–6 July, 19 July–2 August, 2–17 August, 30 August–13 September, and 13–27 September. Ten traps were placed at 50 m intervals within each site.

Antrodiaetid spiders were the only mygalomorphs encountered and they comprised 4.2% (156 of 3695) of the adult spiders collected during this study.

Western Siskiyou Mountains. Research during 2001 surveyed arthropods within a variety of plant associations within the white fir and Douglas-fir series. The region of study was divided into two areas, separated by the Illinois Valley, approximately 50 km apart. One area was centered approximately 40 km west of the town of Grants Pass (N42°35’, W123°51’) and was within the Galice Ranger District, Siskiyou National Forest and the Grants Pass Resource Area, Medford District, Bureau of Land Management. The second area was centered near Oregon Caves National Monument (N42°10’, W123°24’) and was within the Illinois Valley Ranger District, Siskiyou National Forest and the Ashland Resource Area, Medford District, Bureau of Land Management. Both areas are within the western Siskiyou Mountains, although the Oregon Caves National Monument area is on the eastern margin of this region (Waring 1969). Sites ranged between 562 to 1636 m elevation.

Seven plant associations were surveyed, with each association being replicated twice within each area. Plant associations were chosen to represent a range of environmental conditions, from relatively warm and dry (PSME/Dry Shrub) to cool and wet (ABCO-ABMAS/QUSA2). The plant associations are listed below with the approximate average annual temperature and rainfall, elevation, respectively, in parentheses. The plant associations and their attributes are described by Atzet et al. (1996). All stands were in mid- to late-successional stages of development.
ABCO-ABMAS/QUSA2: White fir-Shasta Red Fir (*Abies magnifica shastensis* Lemmon)/Sadler Oak (*Quercus sadleriana* R. Brown) (5.3°C, 185 cm, 1582 m)
ABCO/SYMO: White fir/Creeping Snowberry (*Symphoricarpos mollis* Nuttall) (5.0°C, 140 cm, 1570 m)
ABCO/BENE/ACTR: White fir/Dwarf Oregon-Grape (*Berberis nervosa* Pursh)/Vanilla leaf [*Achlys triphylla* (Smith) de Candolle] (6.7°C, 147 cm, 1306 m)
ABCO/RHMA3-QUSA2: White fir/Pacific Rhododendron (*Rhododendron macrophyllum* D. Don ex G. Don)-Sadler Oak (7.8°C, 173 cm, 1148 m)
PSME/QUVA: Douglas-fir/Huckleberry Oak (*Quercus vaccinifolia* Kellogg ex Curran) (7.3°C, 180 cm, 1182 m)
PSME-QUCH2/BENE2: Douglas-fir-Canyon Oak (*Quercus chrysolepis* Liebmann)/Dwarf Oregon-Grape (9.0°C, 124 cm, 79 m)
PSME/Dry Shrub: Douglas-fir/mixed dry shrubs (9.5°C, 122 cm, 758 m)

The geology of the area is dominated by marine volcanic and sedimentary rocks ranging in age from early Paleozoic to middle Mesozoic but also includes numerous bodies of granitic and ultramafic, serpentined rocks (Irwin & Hotz 1981). The topography is typically steep and highly dissected, with the average slope at the study sites being 38%.

The climate varies considerably in this area but is generally wetter and cooler than the eastern Siskiyou Mountains. Total precipitation recorded near Cave Junction (388 m elevation) during 2001 was 158 cm (Fig. 2).

Pitfall traps sampled arthropods during seven consecutive 2-week intervals between 11 June and 17 September, and one 3-week period between 17 September and 9 October. Five pitfall traps, spaced 50 m apart along transects, were placed within each site.

Mygalomorph spiders comprised 569 of 2737 (20.8%: 14.4% Mecicobothriidae, 6.4% Antrodiaetiidae) adult spiders collected during this study.

**Key and Descriptions.** The key and diagnoses list characters that can be used in identifying antrodiaetids from southwestern Oregon. In some cases, color and size can be useful in preliminary sorting but these characters are not always diagnostic for all species.

Measurements (in mm) and leg macrosetal counts are first presented for the holotype, followed by smallest and largest paratypes in parentheses (brackets for setal counts). In general, we have followed the methods for obtaining measurements as detailed by Coyle (1971). However, we have included characters that give an overall impression (size and color) of the species as well as those that are taxonomically important. The only new character introduced is the shape of the male genital plate. Although this character was useful for identifying specimens from southwestern Oregon, it is not known whether it will be equally useful elsewhere. When examining the genital plate, it is important to be sure that it is laying flat, as it often rolls inward and viewing it directly from a ventral view may make the plate appear thinner than it actually is. The genital plate should be examined in species from other regions as well. Coyle’s (1971) nomenclature for setal types and
positions was followed. We found it difficult to assign macrosetae on tibia I to the two categories designated by Coyle and therefore urge caution when making these counts. Likewise, determining the relationship (appressed or free) between the inner and outer palpal conductor sclerite tips was difficult. Changing the angle that these sclerites are viewed, by rotating the palp slightly during examination, can sometimes make the tip of a free sclerite appear appressed.

Holotypes are deposited in the National Museum of Natural History, Smithsonian Institution (NMNH) and paratypes are deposited in the American Museum of Natural History, New York (AMNH); J. Cokendolpher Collection (JCC); Museum of Texas Tech University (TTU); U.S. Department of Agriculture - Forest Service (USFS), Western Forest Insect Collection, Oregon State University, Corvallis, Oregon (WFIC). Additional non-type material is deposited in: JCC; James McIver Collection (JMC), La Grande, Oregon; Oregon State Arthropod Collection, Oregon State University (OSAC).

**FIGURE 3.** Map of southwestern Oregon (insert shows position of region within state) showing the distribution of *Antrodiaetus occultus* Coyle (triangles), *Antrodiaetus montanus* (Chamberlin & Ivie) (diamond), *Atypoides gertschi* Coyle (squares), and *Hexura rothi* Gertsch & Platnick (circles). Symbols from this study are closed whereas those recorded by Coyle (1971) and Gertsch & Platnick (1979) are open.
FIGURE 4. Map of southwestern Oregon (insert shows position of region within state) showing the distribution of *Antrodiaetus pacificus* (Simon) (circles) and *Antrodiaetus pugnax* (Chamberlin) (diamonds). Symbols from this study are closed whereas those recorded by Coyle (1971) are open.

**Taxonomy**

The mygalomorph spiders of southwestern Oregon can be distinguished by the following key and by characters shown in Table 1.

**Key to Southwestern Oregon Mygalomorphae**

1a. Opisthosoma without dorsal sclerotized patches; size smaller (body length 3–6 mm) (Fig. 8) ... [Dipluridae: *Microhexura idahoana* Chamberlin & Ivie, found elsewhere in Oregon, but so far not known from the southwestern part of the state. See Coyle (1981) for details].

1b. Opisthosoma with 1–4 dorsal sclerotized patches; size larger (body length 6–15+ mm) (Figs. 9–15) .................................................................................................................  2

2a. Distal segment of posterior lateral spinneret slender, at least 5 times as long as width at
middle of segment, flexible, pseudosegmented (Fig. 16); web a sheet above ground ...

Mecicobothriidae: Hexura rothi Gertsch & Platnick [Hexura picea Simon occurs slightly further north in Oregon, see Gertsch & Platnick (1979) for details].

2b. Distal segment of posterior lateral spinneret no more than 3 times as long as width at middle of segment, not flexible nor pseudosegmented (Figs. 18, 20); burrow in ground with flexible collar that can be opened and closed ... Antrodiaetidae

3a. With three pairs of spinnerets (anterior pair small but present even in earliest instars) (Fig. 18: arrow), adult male chelicera with large apophysis covered with setae (Fig. 17)

... Atypoides gertschi Coyle

3b. With two pairs of spinnerets (Fig. 20), male chelicera without large apophysis (Fig. 19) ... Antrodiaetus (adult males only) ____________________________ 4

4a. Tibia and metatarsus I each with ventral prominence and a group of macrosetae on the tibial I swelling (Fig. 48) Antrodiaetus pugnax (Chamberlin)

4b. Tibia and metatarsus I ventrally without strong macrosetae or enlarged (Fig. 47) ....... 5

5a. Upper ectal cheliceral surface with bare area without setae (Fig. 19); male genital plate straight to recurved (Figs. 22, 32) ................................................................. 6

5b. Upper ectal cheliceral surface uniformly covered with setae (Fig. 21); male genital plate recurved (Fig. 30) Antrodiaetus montanus (Chamberlin & Ivie)

6a. Tip of palpal outer conductor sclerite closely appressed to inner conductor tip (Figs. 50, 52); genital plate not split (Figs. 24, 32) ................................................................. 7

6b. Tip of palpal outer conductor sclerite not appressed to inner conductor tip (Fig. 49, 51); sclerotized portions of genital plate split (Figs. 22, 31) ................................................................. 9

7a. Dorsum of opisthosoma with 2–3 separate sclerotized patches (Fig. 15, see arrows); metatarsus I not distinctly sinuous in shape Antrodiaetus pacificus (Simon)

7b. Dorsum of opisthosoma with single sclerotized scutum (Figs. 12, 14); metatarsus I sinuous in shape (Figs. 41, 45) ................................................................. 8

8a. Body larger (dorsal shield of the prosoma 4.9–6.4 mm long), chelicera with distodorsal projection (Fig. 35) Antrodiaetus coylei n. sp.

8b. Body smaller (dorsal shield of the prosoma 3.9–4.7 mm long), chelicera without small distodorsal projection (Fig. 37) Antrodiaetus metapacificus n. sp.

9a. Tibia I without distinct brush of macrosetae (Fig. 42, 43); genital plate weakly sclerotized (Figs. 26–27) Antrodiaetus effeminatus n. sp.

9b. Tibia I with brush of macrosetae (Figs. 38, 47); genital plate distinctly sclerotized (Figs. 22, 31) Antrodiaetus ashlailandensis n. sp.

10a. Male genital plate strongly recurved (Fig. 31); prolateral group of macrosetae on tibia I extending to distal end of segment (Fig. 47); palpal tibia 2.1–2.3 times as long as wide Antrodiaetus occultus Coyle

10b. Male genital plate straight to weakly recurved (Figs. 22, 23); prolateral group of macrosetae on tibia I not extending to distal end of segment (Fig. 38); palpal tibia 2.5–2.7 times as long as wide Antrodiaetus ashlandensis n. sp.
**TABLE 1.** Comparison of characters for *Antrodiaetus* spp. from southwestern Oregon.

<table>
<thead>
<tr>
<th>Character</th>
<th>ashlandensis n. sp.</th>
<th>coylei n. sp.</th>
<th>effeminatus n. sp.</th>
<th>metapacificus n. sp.</th>
<th>montanus n. sp.</th>
<th>occultus n. sp.</th>
<th>pacificus n. sp.</th>
<th>pugnax n. sp.</th>
</tr>
</thead>
<tbody>
<tr>
<td># opisthosomal sclerotized patches</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>2–3</td>
<td>2–3</td>
<td></td>
</tr>
<tr>
<td>genital plate (split = +)</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>genital plate (weakly sclerotized = +)</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>genital plate (procurred = +)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>cheliceral distodorsal projection</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>cheliceral upper ectal surface (bare = -)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>tibia I prolateral brush of macrosetae</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>tibia I prolateral ensiform macrosetae</td>
<td>40–44%</td>
<td>21–42%</td>
<td>50–60%</td>
<td>28–29%</td>
<td>48–93%</td>
<td>37–74%</td>
<td>0–3%</td>
<td>67–100%</td>
</tr>
<tr>
<td>tibia I prolateral macrosetae</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>+ = reaching distal end of segment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tibia I retrolateral macrosetae*</td>
<td>7–8 (4–5)</td>
<td>5–6 (1–8)</td>
<td>7</td>
<td>6–7</td>
<td>6–23</td>
<td>2–9</td>
<td>3–17</td>
<td>2–9</td>
</tr>
<tr>
<td>tibia I ventral heavy macrosetae</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>metatarsus I in lateral view</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>enlarged</td>
</tr>
<tr>
<td>metatarsus I (sinuous = +)</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>metatarsus I ventral macrosetae</td>
<td>-</td>
<td>-</td>
<td>A</td>
<td>-</td>
<td>A</td>
<td>-</td>
<td>-</td>
<td>A+B</td>
</tr>
<tr>
<td>(rarely A)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>tip of palpal outer conductor sclerite</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>+ = appressed to inner conductor sclerite</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>palpal tibia length / width</td>
<td>2.5–2.7</td>
<td>2.8–3</td>
<td>1.9–2.1</td>
<td>2–2.4</td>
<td>2.5–2.8</td>
<td>2.1–2.3</td>
<td>2.3–2.5</td>
<td>2.2–2.4</td>
</tr>
<tr>
<td>body length (mm)</td>
<td>9.6–11.5</td>
<td>10.6–13.7</td>
<td>6.7–8.3</td>
<td>6.3–8.5</td>
<td>10.8–12.5**</td>
<td>8.4–10.3**</td>
<td>13.3–14.9**</td>
<td>9.4–13**</td>
</tr>
<tr>
<td>prosomal dorsal shield length (mm)</td>
<td>5–5.9</td>
<td>4.9–6.4</td>
<td>3.4–4.5</td>
<td>3.9–4.7</td>
<td>5–7</td>
<td>4.2–6.2</td>
<td>4.1–6.9</td>
<td>4.2–5.6</td>
</tr>
</tbody>
</table>

* Numbers in parentheses are intermediate sized setae; these were not mentioned by Coyle (1971) and may be part of the range recorded by Coyle for described species.

** Measurements not provided by Coyle (1971); numbers given are for those from southwestern Oregon.

**Descriptions**


**Material Examined** (m = male, f = female, i = immature). Oregon (all collected in 2001 by Niwa and Peck USFS): Curry County: Galice Ranger District, Siskiyou National Forest, N42°38’46”, W123°55’00” to N42°36’06”, W123°51’23” (1128–1402 m elevation), 25 June (7f, 11i), 9 July (5f, 18i), 23 July (10i), 6 Aug. (2f, 20i), 20 Aug. (2f, 11i), 4 Sept. (6f, 7i), 17 Sept. (6m, 8f, 4i), 9 Oct. (136m, 7f, 14i). Grants Pass Resource Area, Medford District, Bureau of Land Management, N42°38’46”, W123°54’46” to N42°36’02”, W123°53’43” (1036–1280 m elevation), 25 June (3f, 4i), 9 July (3f, 11i), 23 July (1i), 6 Aug. (9i), 20 Aug. (2f, 8i), 4 Sept. (1i), 17 Sept. (1f, 6i), 9 Oct. (29m, 6f, 13i). Josephine County: Galice Ranger District, Siskiyou National Forest, N42°36’18”, W123°47’13” to N42°32’53”, W123°35’59” (640–1234 m elevation), 25 June (8f, 18i), 9 July (2f, 9i), 23 July (4i), 6 Aug. (9i), 20 Aug. (1f, 5i), 4 Sept. (1f, 1i), 17 Sept. (2m), 9
Oct. (28 m, 1 f, 6 i). Grants Pass Resource Area, Medford District, Bureau of Land Management, N42°36′35″ to N42°32′52″, W123°37′05″ (533–1539 m elevation), 25 June (5 f, 7 i), 9 July (1 f, 7 i), 23 July (1 f, 6 i), 6 Aug. (6 i), 20 Aug. (7 i), 4 Sept. (2 i), 17 Sept. (2 m), 9 Oct. (44 m, 2 f, 2 i). Illinois Valley Ranger District, Siskiyou National Forest, N42°16′35″, W123°22′53″ to N42°01′34″, W123°27′42″ (945–1646 m elevation), 25 June (7 f, 11 i), 9 July (5 f, 3 i), 23 July (10 i), 6 Aug. (6 i), 20 Aug. (2 f, 16 i), 4 Sept. (1 f, 1 i), 17 Sept. (11 i), 9 Oct. (29 m, 4 f, 2 i). Ashland Resource Area, Medford District, Bureau of Land Management, N42°17′27″, W123°21′36″ to N42°00′18″, W123°30′53″ (518–1372 m elevation), 25 June (3 f, 28 i), 9 July (3 f, 5 i), 23 July (13 i), 6 Aug. (1 f, 15 i), 20 Aug. (1 f, 8 i), 4 Sept. (1 f), 17 Sept. (1 f, 5 i), 9 Oct. (15 m, 3 f, 5 i).

**FIGURE 6.** Abundance of (male, female and immature) *Atypoides gertschi* Coyle collected in pitfall traps from eastern Siskiyou (during 1998) and southern Cascade (1999) Mountains.
FIGURE 7. Abundance of adult male Antrodiaetus spiders collected in pitfall traps from southwestern Oregon.
FIGURES 8–11. Dorsal view of male body. 8, *Microhexura idahoana* Chamberlin & Ivie (note spur on tibia I); 9, *Hexura rothi* Gertsch & Platnick; 10, *Atypoides gertschi* Coyle; 11, *Antrodiaetus ashlandensis* n. sp. Not to scale; see text for approximate sizes of the different species. Arrows indicate sclerotized patches.
Diagnosis. The presence of only four spinnerets in *H. rothi* will separate it from other members of the genus; which have six spinnerets.

Distribution. This species has only been recorded from Curry, Douglas, Jackson, Lane, and Josephine Counties of southwestern Oregon (Figs. 1, 3).

Wandering Activity. Collection of mature males was restricted to the early fall, with 96% trapped on 9 October 2001 (Fig. 5). Females were active over the entire sampling period and immature activity was highest in late June–early July and September–October.

Comments. Previous habitat information is limited to a single record collected from myrtle duff (Gertsch & Platnick 1979). Opler and Lattin (2001) speculated that *H. rothi* may be an old-growth forest obligate. Our data expand this knowledge of this species considerably, and indicate that *H. rothi* occupies a wide range of mid- and late-successional coniferous habitats. Although restricted to the western Siskiyou Mountains, it was found in all 28 sites surveyed. It was most abundant in cool, high elevation sites [ABC-ABMAS/QUSA2 and ABCO/SYMO plant association (25.4% and 21.8% of the total, respectively)] and least abundant in warm, lower elevation sites [PSME/Dry Shrub sites (5.8%)].

*Hexura rothi* appears to be more tolerant of drier conditions than *H. picea*, which is found in moister areas of northwestern Oregon and western Washington. Opler and Lattin (2001) suggested that *H. picea* requires the constant availability of moisture associated with old-growth and coastal habitats.

Within the study area, *H. rothi* appears to be widespread and abundant as it was the most common spider collected (395 individuals, or 14.4% of total spider abundance). Overall, it was 2.6 times more abundant in the Grant Pass area than in the Cave Junction area. Gertsch and Platnick (1979) reported that an egg sac was discovered with a female collected 22 July. The egg sac contained about 80 eggs.

*Atypoides gertschi* Coyle

Figs. 1, 3, 6, 10, 16–17


Material Examined (m = male, f = female, i = immature). Oregon (all collected by Niwa and Peck USFS): Jackson County, Ashland Watershed, Ashland Ranger District, Rogue River National Forest, 1998: N42°9’50.2”, W122°42’24.9” (926–1024 m elevation), 15 June (1i), 8 July (1i), 17 Aug. (1m, 1i), 1 Sept. (7m); N42°8’58.0”, W122°41’14.3” (1219–1268 m elevation), 15 June (1i), 8 July (1f, 1i), 20 July (1i), 17 Aug. (32m, 2i), 1 Sept. (16m), 29 Sept. (1m); N42°8’58.0”, W122°42’24.9” (1000–1146 m elevation), 20 July (1i), 17 Aug. (36m, 3i), 1 Sept. (23m); N42°8’5.7”, W122°42’24.9” (1463 m elevation), 15 June (2i), 8 July (2i), 17 Aug. (59m, 2i), 1 Sept. (43m), 29 Sept. (3m), 11 Oct. (2i); N42°8’5.7”, W122°41’14.3” (1317–1366 m elevation), 15 June (2f, 2i), 8 July (5i), 20
July (2i), 17 Aug. (20m, 4i), 1 Sept. (23m), 29 Sept. (2m), 11 Oct. (4i). Jackson County, Ashland Resource Area, Medford District, Bureau of Land Management, 1999: N42°8'58.0", W122°24'45.7" (1372–1524 m elevation), 2–4 Aug. (4m); N42°8'5.7", W122°25'56.3" (1372–1524 m elevation), 2–4 Aug. (1m); N42°10'42.4", W122°22'24.5" (1372–1524 m elevation), 2–4 Aug. (3m); 16–18 Aug. (1m), 13–15 Sept. (1m); N42°9'50.2", W122°21'13.8" (1372–1524 m elevation), 2–4 Aug. (2m); 16–18 Aug. (4m), 13–15 Sept. (1m).

Diagnosis. Anterior pair of spinnerets essentially round in A. gertschi; all spinnerets clearly longer than wide in other species of Atypoides.

Distribution. Cascade and eastern Siskiyou Mountains in southern Oregon south and east into the northern Sierra Nevada Mountains of California (Figs. 1, 3; Coyle 1968: map 1).

Wandering Activity. Male wandering activity was concentrated between late July and early September while females were active June–early July (Fig. 6). Immatures were collected throughout the trapping period in 1998 but only in late June in 1999.

Comments. Atypoides gertschi was found in the eastern Siskiyou and southern Cascades Mountains study areas. Within the eastern Siskiyou Mountains it was the third most abundant spider collected, comprising 8.1% of the total, and was collected in 12 of 18 sites. Although it was found in both burned and unburned sites (5 burned and 7 unburned sites), 72.1% of adults collected were from unburned sites. Atypoides gertschi was found in 8 of 16 sites in the southern Cascade Mountains (3 thinned and 5 unthinned sites), but was considerably less common, comprising only 0.6% of the total number of spiders collected. Overall, only 5 of 290 individuals collected were female. Known biological information for this species has been summarized by Coyle (1971).

Antrodiaetus ashlandensis n. sp.
Figs. 1, 7, 11, 19–20, 22–23, 34, 38–39, 49

Type Material. Oregon (all collected in 1998 by Niwa and Peck USFS): Jackson County, Ashland Watershed, Ashland Ranger District, Rogue River National Forest: N42°85'8.0", W122°42'24.9" (1000–1146 m elevation), 29 Sept. (3m, AMNH), 11 Oct. (male holotype, NMNH), (4 male paratypes, JCC); N42°8'50.2", W122°42'24.9" (926–1024 m elevation), 11 Oct. (4 male paratypes, WFIC); N42°8'58.0", W122°41'14.3" (1219–1268 m elevation), 29 Sept. (1 male paratype, JCC); N42°8'5.7", W122°42'24.9" (1463 m elevation), 11 Oct. (1 male paratype, JCC); N42°8'5.7", 122°41'14.3" (1317–1365 m elevation), 29 Sept. (2 male paratypes, AMNH), 11 Oct. (3 male paratypes, TTU).

Diagnosis. The separation of this species from others of the region requires examination of several characters. The combination of no cheliceral distodorsal projection or setal coat on upper ectal surface (Figs. 19, 34), having all three dorsal opisthosomal sclerotized patches separate (Fig. 11), and by having a prolateral brush of macrosetae on
tibia I (Fig. 38, 39) will distinguish the new species from all congeners except *A. pugnax* and *A. occultus*. It can be separated from *A. pugnax* by not having the leg I segments of the male enlarged (Fig. 48 versus Fig. 38) and from *A. occultus* it differs by not having the macrosetae of tibia I extending to the distal end (Fig. 47 versus Fig. 38).

**Etymology.** The species name is based on the region of Oregon where this spider was discovered.

**Distribution.** Known only from Ashland Ranger District, Rogue River National Forest, Jackson County, Oregon (Fig. 1).

**Description.** Female unknown. Male (*n* = 19): body large, total body length 11.4 (9.6, 11.5). Color: orangish-brown, sclerotized patches on opisthosoma more evenly brown, dark brown pigment encircling anterior median eyes and between posterior median and lateral eyes.

Dorsal shield of prosoma 5.5 (5.05, 5.85) [mean ± s.d., 5.44 ± 0.23 (*n* = 19)] long, 4.35 (3.9, 4.55) wide, with setae scattered sparsely over pars thoracica except very densely along lateral and posterior borders.

Opisthosoma 5.9 (4.55, 5.65) long, 4.1 (3.3, 4.15) wide; all three dorsal sclerotized patches separate (Fig. 11); male genital plate with sclerotized parts divided, straight to recurved (Figs. 22–23).

Chelicera with large area on upper ectal surface without setae; without distodorsal projection (Figs. 19, 34).

Palp with tibia swollen. Tibia 2.56–2.68 times longer than wide; widest in proximal third; 3.2 (3.1, 3.35) long, 1.25 (1.2, 1.25) wide. Tip of outer conductor sclerite (Fig. 49) roundly pointed; not appressed to inner conductor sclerite. Tip of inner conductor sclerite well sclerotized and not curved.

Leg I (Figs. 38–39) without any segment being greatly enlarged or modified with processes; femur 5.6 (5.25, 5.8) long, patella 2.2 (2.15, 2.45) long, tibia 3.75 (3.6, 3.9) long, 0.8 (0.75, 0.95) wide, metatarsus 4.35 (4.1, 4.45) long, tarsus 2.7 (2.4, 2.75) long. Tibia I with relatively dense group of prolateral macrosetae medially (not reaching distal end of segment). Macrosetae with 40.5–43.3% being ensiform; with 26 (11 ensiform) [30 (13 ensiform), 37 (15 ensiform)] macrosetae. Tibia I with 11 (7 large) [11 (7 large), 13 (8 large)] medial (not extending to distal end) macrosetae ventrolaterally, the longest seta at most about width of tibia (about as long as prolateral macrosetae). Tibia I without large heavy macrosetae ventrally; tibia and metatarsus I not swollen in lateral view; metatarsus I sinuous, without macrosetae ventrally; other setae ventrally on metatarsus I = 2 times greatest width of segment.

**Wandering Activity.** All 19 males were collected on 29 September (6) and 11 October (13) 1998 (Fig. 7).

**Comment.** *Antrodiaetus ashlandensis* n. sp. was collected in 9 of 18 sites within the eastern Siskiyou Mountains study area. Six of the sites had previously experienced prescribed underburning.
FIGURES 12–15. Dorsal view of male body. 12, Antrodiaetus coylei n. sp.; 13, Antrodiaetus effeminatus n. sp.; 14, Antrodiaetus metapacificus n. sp.; 15, Antrodiaetus pacificus (Simon). Not to scale; see text for approximate sizes of the different species. Arrows indicate sclerotized patches.
Antrodiaetus coylei n. sp.
Figs. 1, 7, 12, 24–25, 35, 40–41, 50


Type Material. Oregon (all collected on 11 Oct. 1998 by Niwa and Peck USFS): Jackson County, Ashland Watershed, Ashland Ranger District, Rogue River National Forest: N42°9’50.2”, W122°42’24.9” (926–1024 m elevation) (male holotype, NMNH; 18 male paratypes, WFIC); N42°8’58.0”, W122°41’14.3” (1219–1268 m elevation) (3 male paratypes, TTU); N42°8’58.0”, W122°42’24.9” (1000–1146 m elevation) (21 male paratypes, JCC); N42°8’5.7”, W122°42’24.9” (1463 m elevation) (2 male paratypes, TTU); N42°8’5.7”, W122°41’14.3” (1317–1365 m elevation) (6 male paratypes, AMNH).

Diagnosis. This species differs from many members of the genus by having the three opisthosomal sclerotized patches fused into a single scutum (Fig. 12). Others with this characteristic occur in Japan, eastern North America, and the Pacific Northwest of the USA (Oregon: A. metapacificus n. sp. and Washington: A. cerberus Coyle). Antrodiaetus coylei n. sp. can be easily distinguished from A. metapacificus n. sp. and A. cerberus by having a small cheliceral distodorsal projection (Fig. 35).

Etymology. The specific epithet honors Dr. Fred Coyle for his many excellent studies in arachnology. His work has led the way for others to know Antrodiaetidae.

Distribution. Known only from the Ashland Ranger District, Rogue River National Forest, Jackson County, Oregon (Fig. 1).

Description. Female unknown. Male (n = 51): body large, total body length 12.2 (10.6, 13.65), and orangish-brown, appendages and sclerotized patches on opisthosoma more evenly brown, dark brown pigment encircling anterior median eyes and between posterior median and lateral eyes. In freshly collected material the body and legs appear more greenish-brown in coloration.

Dorsal shield of the prosoma 6.3 (4.95, 6.4) [mean ± s.d., 5.88 ± 0.32 (n = 50)] long, 4.55 (3.7, 4.8) wide, with thin weak setae scattered sparsely over pars thoracica except slightly denser along lateral and posterior borders.

Opisthosoma 5.9 (5.65, 7.25) long, 3.55 (3.5, 5.5) wide; all three dorsal sclerotized patches fused into single scutum (Fig. 12); male genital plate with sclerotized parts undivided, slightly to strongly recurved (24–25).

Chelicera with large area on upper ectal surface without setae; with distodorsal projection (Fig. 35).

Palp with tibia swollen. Tibia 2.3–2.7 times longer than wide; widest in proximal third; 3.55 (3.0, 3.4) long, 1.3 (1.15, 1.45) wide. Tip of outer conductor sclerite (Fig. 50) roundly pointed; closely appressed to inner conductor sclerite. Tip of inner conductor sclerite well sclerotized and not curved.

Leg I (Figs. 40–41) without any segment being greatly enlarged or modified with processes; femur 5.2 (4.8, 5.55) long, patella 2.3 (2.1, 2.4) long, tibia 3.75 (3.35, 3.65).
long, 1.35 (1.1, 1.2) wide, metatarsus 4.55 (4.1, 4.75) long, tarsus 2.35 (2.25, 2.6) long. Macrosetae with 21–42% being ensiform: with 48 (13 ensiform) [43 (9 ensiform), 38 (16 ensiform)] macrosetae. Tibia I with 11 (6 large) [5, 14 (6 large)] medial (not extending to distal end) macrosetae ventrally, the longest seta at most about width of tibia (about as long as prolateral macrosetae). Tibia I without large heavy macrosetae ventrally; tibia and metatarsus I not swollen in lateral view; metatarsus I sinuous, without macrosetae ventrally; other setae ventrally on metatarsus I = 1.3 times greatest width of segment.

**Variation.** One of the males is yellowish-brown in color; much lighter in coloration than any of the other specimens. It does not otherwise differ remarkably from the rest of the specimens and was collected in the same general area (from N42°8’58.0”, W122°42’24.9”) as normally colored males. Therefore, it is considered teneral and not normal variation in coloration.

**Wandering Activity.** All 51 males were collected on 11 October 1998 (Fig. 7).

**Comment.** *Antrodiaetus coylei* n. sp. was only collected in the eastern Siskiyou Mountains study area. It was collected in 16 of 18 sites but was not particularly abundant in any one site, ranging from 1–7 individuals per site.

*Antrodiaetus effeminatus* n. sp.

Figs. 1, 7, 13, 26–27, 36, 42–43, 46, 51, 53

**Type Material.** Oregon (collection on 9 Oct. 2001 by Niwa and Peck USFS): Josephine County, Ashland Resource Area, Medford District, Bureau of Land Management, N42°15’12”, W123°27’41” (518 m elevation), male holotype (NMNH), 1 female paratype (NMNH), 7 male paratypes (2, AMNH; 2 JCC; 1, TTU; 2, WFIC).

**Diagnosis.** The absence of a distinct prolateral brush of macrosetae on male tibia I (Fig. 46, compare legs I and II) and the short and relative uniform width of stalks of the seminal receptacles (Fig. 53) place this species in the *Lincolnianus* group used by Coyle (1971). Other members of this group are geographically distant in Arizona, New Mexico, and across the continental divide in Arkansas to Nebraska. Like, *A. apachecus* from Arizona and New Mexico, the new species has the outer conductor sclerite tip moderately thick and erect (Fig. 51). The new species is smaller than *A. apachecus* (4.6–5.4 versus 3.4–4.5 prodorsal shield length in males). It also differs in the details of the distal tip of the outer conductor sclerite tip of the male (compare Fig. 51 with Coyle, 1971: figs. 230–232).

**Etymology.** The specific epithet refers to the feminine likeness of the males tibia I, which lacks a distinct brush of macrosetae.

**Distribution.** Known only from a single location within the Ashland Resource Area, Medford District, Bureau of Land Management, Josephine County, Oregon (Fig. 1).

**Description.** Female (n = 1): body small, total body length 8.2, and slightly darker yellowish-brown than males, appendages and opisthosoma more evenly light brown with sclerotized patches on opisthosoma darker brown, dark brown pigment encircling anterior median eyes and between posterior median eyes and lateral eyes.
FIGURES 22–33. Genital plates of males. 22–23, Antrodiaetus ashlandensis n. sp.; 24–25, Antrodiaetus coylei n. sp.; 26–27, Antrodiaetus effeminatus n. sp.; 28–29, Antrodiaetus metapacificus n. sp.; 30, Antrodiaetus montanus (Chamberlin & Ivie); 31, Antrodiaetus occultus Coyle; 32, Antrodiaetus pacificus (Simon); 33, Antrodiaetus pugnax (Chamberlin). Inserts emphasize sclerotized regions. Scale line = 0.5 mm.

Dorsal shield of the prosoma 3.5 long, 2.65 wide, with setae scattered sparsely over pars thoracica except denser along lateral and posterior borders. Labrium with anterior two-thirds covered with longer setae, basal portion only with very short setae.

Opisthosoma 4.7 long, 3.4 wide; with two separate dorsal sclerotized patches. Bursa copulatrix (Fig. 53) somewhat divided into two regions, but seminal receptacles not
closely paired; stalks short and thick. Seminal receptacles with heavily sclerotized stalk of each receptaculum being relatively short and only slightly wider distally. Lateral lobes and bulbs slightly more slender than the medians; bowls weakly to not developed.

FIGURES 34–37. Ectal view of male left chelicera. 34, *Antrodiaetus ashlandensis* n. sp.; 35, *Antrodiaetus coylei* n. sp.; 36, *Antrodiaetus effeminatus* n. sp.; 37, *Antrodiaetus metapacificus* n. sp. Scale lines = 0.5 mm.

Leg I lengths: femur 2.7, tibia 1.65, metatarsus 1.5, tarsus 0.9. Leg IV lengths: femur 2.55, tibia 1.65, metatarsus 1.95, tarsus 1.05. Ratios (see Coyle, 1971): IVTL/IVTarL = 1.57, IVML/IML = 1.3.

Male (n = 8): body small, total body length 8.3 (6.7, 8.2), and straw to yellowish-brown, appendages and opisthosoma more evenly light brown with sclerotized patches on opisthosoma darker brown, dark brown pigment encircling anterior median eyes and between posterior median eyes and lateral eyes.

Dorsal shield of the prosoma 4.45 (3.4, 4.35) [mean ± s.d., 4.01 ± 0.34 (n = 8)] long, 3.2 (2.6, 3.2) wide, with setae scattered sparsely over pars thoracica except denser along lateral and posterior borders.
Opisthosoma 3.85 (3.3, 3.85) long, 2.7 (2.05, 2.7) wide; with three separate dorsal sclerotized patches (Fig. 13); male genital plate only faintly sclerotized, sclerotized areas divided (Figs. 26–27).

Chelicera with large area on upper ectlal surface without setae; without distodorsal projection (36).

Palp with tibia swollen. Tibia 1.95–2.1 times longer than wide; widest in proximal third; 1.9 (1.7, 1.85) long, 0.9 (0.8, 0.95) wide. Tip of outer conductor sclerite (Fig. 51) roundly pointed; not appressed to inner conductor sclerite, bent from it at tip. Tip of inner conductor sclerite well sclerotized and curved.
FIGURES 42–45. Male left tibia I and metatarsus I. 42–43, Antrodiaetus effeminatus n. sp. (42, prolateral view; 43, ventral view). 44–45, Antrodiaetus metapacificus n. sp. (44, prolateral view; 45, ventral view). Scales = 0.5 mm in 0.1 mm divisions.
Leg I (Figs. 42–43, 46) without any segment being greatly enlarged or modified with processes; femur 3.8 (3.3, 3.8) long, patella 1.6 (1.45, 1.6) long, tibia 2.65 (2.3, 2.6) long, 0.6 (0.55, 0.7) wide, metatarsus 3 (2.65, 3.05) long, tarsus 1.95 (1.75, 2) long. Tibia I without dense group of prolateral macrosetae medially; macrosetae with 50–60% being ensiform: with 12 (6 ensiform) [10 (6 ensiform), 11 (6 ensiform)] macrosetae. Tibia I with 7 (7,7) medial macrosetae ventrolaterally, these extending to distal end, the longest seta about width of tibia (noticeably longer than any prolateral macrosetae). Tibia I without large heavy macrosetae ventrally; tibia and metatarsus I not swollen in lateral view; metatarsus I slightly sinuous to straight, with one retrolateral distal macroseta (seta A) ventrally; other setae ventrally on metatarsus I = 1.5 times greatest width of segment.

**Wandering Activity.** This species was only recorded on 9 October 2001 (Fig. 7); four males were collected in the same pitfall trap with the single known female.

**Comments.** *Antrodiaetus effeminatus* n. sp. was collected at a single site within the Douglas-fir/dry shrub plant association of the western Siskiyou Mountains. Douglas-fir dominated (>60% cover) the middle- and overstory of this low elevation site (564 m), but California black oak (*Quercus kelloggii* Newberry) (11%), Pacific madrone (*Arbutus menziesii* Pursh) (11%) and tanoak (*Lithocarpus densiflorus* (Hooker & Arnott) (5%) were also common. Overall, 35 plant species were identified on the site. The site sloped steeply (45°) toward the east. *Antrodiaetus effeminatus* n. sp. was the only mygalomorph spider collected at this site.

**Antrodiaetus metapacificus** n. sp.

Figs. 1, 7, 14, 28–29, 37, 44–45, 52

**Type Material.** Oregon (all collected on 9 Oct. 2002 by Niwa and Peck USFS): Josephine County, Galice Ranger District, Siskiyou National Forest, N42°32’52”, W123°37’59” (652 m elevation), 1 male holotype (NMNH), 2 male paratypes (1, JCC; 1, WFIC).

**Diagnosis.** This species differs from many members of the genus by having the three opisthosomal sclerotized patches fused into a single scutum (Fig. 14). Others with this characteristic occur in Japan, eastern North America, and the Pacific Northwest of the USA (Oregon: *A. coylei* n. sp. and northeastern Washington: *A. cerberus* Coyle). *Antrodiaetus metapacificus* n. sp. can be distinguished from *A. coylei* n. sp. by lacking a small cheliceral distodorsal projection (Fig. 37) and differs from *A. cerberus* by the overall smaller size. The prosomal dorsal shield length is 5.2–5.4 in *A. cerberus* and 3.9–4.7 in the new species.

**Etymology.** Meta (Greek) means, among other things, to be derivative or related. In this case it is used to show the relationship of this species to *A. pacificus*. This species will key to *A. pacificus* in Coyle (1971). This primarily based on the notion that *A. pacificus* consists of individuals with less than 30% of the male tibia I macrosetae being ensiform. The percentage is actually much lower (0–3%) in the western examples of *A. pacificus* (see comments below under that species).
FIGURES 47, 48. Male left leg I, prolateral view of tibia, metatarsus, tarsus. 47, Antrodiaetus occultus Coyle; 48, Antrodiaetus pugnax (Chamberlin). Scale line = 0.5 mm.

FIGURES 49–52. Prolateral view of entire palp (left) and view of tip after palp rotated 90° on longitudinal axis of distal half of inner conductor sclerite. 49, Antrodiaetus ashlandensis n. sp.; 50, Antrodiaetus coylei n. sp.; 51, Antrodiaetus effeminatus n. sp.; 52, metapacificus n. sp. Scale lines = 0.1 mm.
FIGURES 53–54. Dorsal view of seminal receptacles. 53, *Antrodiaetus effeminatus* n. sp.; 54, *Antrodiaetus pacificus* (Simon). Scales = 0.01 mm in 0.001 mm divisions.

**Distribution.** Known only from a single location within the Galice Ranger District, Siskiyou National Forest, Josephine County, Oregon (Fig. 1).

**Description.** Female unknown. Male (n = 3): body small, total body length 8.45 (6.35, 7.9), and yellowish-brown, appendages and sclerotized patches on opisthosoma more evenly light brown with leg I patella to tarsus reddish-brown, dark brown pigment encircling anterior median eyes and between posterior median eyes and lateral eyes.

Dorsal shield of the prosoma 4.5 (3.95, 4.7) long, 3.2 (2.6, 3.35) wide, with setae scattered sparsely over pars thoracica except denser along lateral and posterior borders.

Opisthosoma 3.95 (2.4, 3.2) long, 2.4 (2.75, 3.2) wide; all three dorsal sclerotized patches fused into single scutum (in holotype the area after the first is almost divided, but this junction is undetectable in paratypes) (Fig. 14); male genital plate with sclerotized parts undivided, straight to recurved (Figs. 28–29).

Chelicera with large area on upper ectal surface without setae; without distodorsal projection (Fig. 37).

Palp with tibia swollen. Tibia 2–2.4 times longer than wide; widest in proximal third; 2.6 (2.05, 2.3) long, 1.28 (0.85, 1.05) wide. Tip of outer conductor sclerite (Fig. 52) roundly pointed; closely appressed to inner conductor sclerite. Tip of inner conductor sclerite well sclerotized and not curved.

Leg I (Figs. 44–45) without any segment being greatly enlarged or modified with processes; femur 3.9 (3.35, 3.65) long, patella 1.7 (1.5, 1.85) long, tibia 2.55 (2.25, 2.7) long, 0.5 (0.75, 0.9) wide, metatarsus 3.35 (2.8, 3.05) long, tarsus 2.4 (1.65, 1.8) long. Tibia I with relatively dense group of prolateral macrosetae medially (not reaching distal end of segment). Tibia I with relatively dense group of prolateral macrosetae medially (not reaching distal end of segment): 31 (9 ensiform) [28 (8 ensiform), 35 (10 ensiform)] macrosetae. Tibia I with 6 (6,7) medial (not extending to distal end) macrosetae ventrolaterally, the longest seta about width of tibia (noticeably longer than any prolateral
macrosetae). Tibia I without large heavy macrosetae ventrally; tibia and metatarsus I not swollen in lateral view; metatarsus I slightly sinuous to straight, without macroseta ventrally; other setae ventrally on metatarsus I = 2 times greatest width of segment.

**Wandering Activity.** This species was only recorded on 9 October 2001 (Fig. 7).

**Comments.** *Antrodiaetus metapacificus* n. sp. was found at a single site within the Douglas-fir/dry shrub plant association of the western Siskiyou Mountains. The overstory of this relatively low elevation site (652 m) was dominated by Douglas-fir (36% cover) but also included incense-cedar (12%) and Oregon ash (*Fraxinus latifolia* Bentham) (5%). Twenty-three understory plant species were recorded at the site, with pacific madrone (*Arbutus menziesii* Pursh) (6%), Oregon ash (5%) and tanoak (4%) most common. The site faced SE and had a slope of approximately 24°.

*Antrodiaetus montanus* (Chamberlin & Ivie)
Figs. 3, 21, 30


**Material Examined.** Washington: near Richland, Benton County, 2 males (JCC).

**Diagnosis.** The presence of setae on the upper ectal surface of the chelicera (Fig. 21) will separate this species from all others in the genus except for *A. hageni* (Chamberlin). From this latter species, the males differ by not having the metatarsus I swollen in the middle. In southwestern Oregon, it is the only member of the genus to have a procurved male genital plate (Fig. 30).

**Abbreviated Description.** All three dorsal opisthosomal sclerotized patches separate; male genital plate with sclerotized parts undivided, thin, and procurred; chelicera without distodorsal projection, with setae on upper ectal surface; with prolateral brush of macrosetae on tibia I, 48–93% of macrosetae ensiform; tibia I with 6–23 (2–13 ensiform) macrosetae retrolaterally, without large heavy macrosetae ventrally; tibia and metatarsus I not swollen in lateral view; metatarsus I weakly sinuous, with one large retrolateral distal macroseta (seta A) ventrally; tip of palpal outer conductor sclerite not closely appressed to inner conductor sclerite; palpal tibia 2.54–2.78 times longer than wide; males active above ground in early August to early November.

**Distribution.** Great Basin region from Utah and Nevada north to Oregon, Idaho, and Washington (Fig. 3; Coyle 1971: map 2).

**Comments.** The description is based upon data from Coyle (1971) as well as the examination of two males.
Antrodiaetus occultus Coyle
Figs. 3, 31, 47


Diagnosis. This species is the only member of the genus which has the tibia I prolateral macrosetae reaching the distal end of the segment on males (Fig. 47).

Abbreviated Description. All three dorsal opisthosomal sclerotized patches separate; male genital plate with sclerotized parts divided, straight to recurved (Fig. 31); chelicera without distodorsal projection, without setae on upper ectal surface; with prolateral brush of macrosetae on tibia I (Fig. 47) which reach distal end of segment, 37–74% of macrosetae ensiform; tibia I with 2–9 macrosetae retralaterally, without large heavy macrosetae ventrally; tibia and metatarsus I not swollen in lateral view; metatarsus I sinuous, without macrosetae ventrally; tip of palpal outer conductor sclerite not closely appressed to inner conductor sclerite; palpal tibia 2.11–2.25 times longer than wide; males active above ground from late September to early November.

Distribution. Western Oregon between the coast and the Cascade Mountain range (Fig. 3; Coyle 1971: Map 2).

Comments. Examination of voucher material from the study of McIver et al. (1992) revealed the presence of two species: individuals from old growth stands (JMC) are A. occultus and small, yellowish colored specimens (OSAC) from a clearcut stand (3 males) are possibly an undescribed species.

Antrodiaetus pacificus (Simon)
Figs. 1, 4, 7, 15, 32, 54


Material Examined (m = male, f = female). Oregon (all collected by Niwa and Peck USFS): Jackson County, Ashland Watershed, Ashland Ranger District, Rogue River National Forest, 1998: N42°9’50.2”, W122°42’24.9” (926–1024 m elevation), 20 July (7m), 17 Aug. (12m), 1 Sept. (7m, 1f), 29 Sept. (6m), 11 Oct. (3m); N42°8’58.0”, W122°41’14.3” (1219–1268 m elevation), 20 July (2m), 17 Aug. (7m), 1 Sept. (4m); N42°8’58.0”, W122°42’24.9” (1000–1146 m elevation), 8 July (1m), 20 July (4m, 1f), 17 Aug. (15m), 1 Sept. (8m), 29 Sept. (4m), 11 Oct. (4m); N42°8’5.7”, W122°42’24.9” (1463 m elevation), 15 June (1f), 20 July (3m), 17 Aug. (18m), 1 Sept. (3m); N42°8’5.7”, W122°41’14.3” (1317–1365 m elevation), 20 July (1m), 17 Aug. (12m), 1 Sept. (4m).
Jackson County, Ashland Resource Area, Medford District, Bureau of Land Management, 1999: N42°10'42.4", W122°22'24.5" (1372–1524 m elevation), 2–4 Aug. (19m), 16–18 Aug. (2m); N42°5'29.1", W122°27'6.9" (1372–1524 m elevation), 2–4 Aug. (15m), 16–18 Aug. (17m), 13–15 Sept. (1m). N42°5'29.1", W122°22'24.5" (1372–1524 m elevation), 2–4 Aug. (2m). Curry County, 2001: Galice Ranger District, Siskiyou National Forest, N42°38'46", W123°55'00" to N42°36'06", W123°51'23" (1128–1402 m elevation), 9 July (1m), 23 July (6m), 6 Aug. (5m), 20 Aug. (9m), 4 Sept. (6m), 17 Sept. (1m). Grants Pass Resource Area, Medford District, Bureau of Land Management, N42°38'46", W123°54'46" to N42°36'02", W123°53'43" (1036–1280 m elevation), 23 July (2m), 6 Aug. (7m), 20 Aug. (3m), 4 Sept. (1m). Josephine County, 2001: Galice Ranger District, Siskiyou National Forest, N42°36'18", W123°47'13" to N42°32'53", W123°35'59" (640–1234 m elevation), 23 July (4m), 6 Aug. (4m), 20 Aug. (3m), 4 Sept. (2m). Grants Pass Resource Area, Medford District, Bureau of Land Management, N42°36'35", W123°48'03" to N42°32'52", W123°37'05" (533–1539 m elevation), 23 July (2m), 6 Aug. (1m), 20 Aug. (2m), 4 Sept. (2m), 17 Sept. (2m). Illinois River Valley Ranger District, Siskiyou National Forest, N42°16'35", W123°22'23" to N42°01'34", W123°27'42" (945–1646 m elevation), 9 July (3m), 23 July (10m), 6 Aug. (4m, 1f), 20 Aug. (5m), 4 Sept. (4m), 17 Sept. (1m). Ashland Resource Area, Medford District, Bureau of Land Management, N42°17'27", W123°21'36" to N42°00'18", W123°30'53" (518–1372 m elevation), 25 June (1m), 9 July (3m), 23 July (10m), 6 Aug. (3m, 1f), 20 Aug. (4m, 1f), 4 Sept. (3m), 17 Sept. (2m), 9 Oct. (2m).

**Diagnosis.** The presence of a cheliceral distodorsal projection and low percentage of ensiform macrosetae in the prolateral brush on tibia I [0–3% (0–27% Blue Mountains population)] will separate this species from all others.

**Abbreviated Description.** With 2–3 separate dorsal abdominal sclerotized patches (Fig. 15); male genital plate with sclerotized parts same thickness throughout, undivided, recurved (Fig. 32); chelicerae with distodorsal projection, without setae on upper ectal surface; with prolateral brush of macrasetae on tibia I, 0–3% [0–27% Blue Mountains population] of macrasetae ensiform; tibiae I with 3–17 macrasetae retrolaterally, without large heavy macrasetae ventrally; tibia and metatarsus I not swollen in lateral view; metatarsus I weakly sinuous or straight, without macrasetae ventrally; tip of palpal outer conductor sclerite closely appressed to inner conductor sclerite; palpal tibia 2.39–2.51 times longer than wide.

**Distribution.** Pacific coast of North America from southern Alaska to central California (Figs. 1, 4; Coyle 1971: map 2).

**Wandering Activity.** During all three years, adult activity was generally highest between late July and early September, although individuals were collected during all months in which trapping occurred (Fig. 7).

**Comments.** Being found in all three study areas, *A. pacificus* was the most widespread and abundant mygalomorph spider collected. Overall, it was trapped in 57 of 62 sites...
surveyed. Its relative abundance was similar in each area, ranging from 3.7% of the total spider fauna in the south Cascade Mountains to 4.4% in the western Siskiyou Mountains.

Coyle (1971) may have grouped more than one species under A. pacificus. Like Crawford (1988), we believe that the characters presented by Coyle (1971) for specimens from the Blue Mountain (NE Oregon and SE Washington) population are sufficiently different from A. pacificus to justify separation of this taxon into two species; however, this taxonomic work is outside of the realm of the present publication. Our samples match the western coastal population, which represents the true A. pacificus. Coyle’s material may have included examples of one of our new species. In particular, he stated (p. 352): “Occasionally in the western samples and usually in the Blue Mountains samples the three sclerotized patches are continuous.” It is the “occasional western samples” that maybe unrecognized examples of the species we are herein naming A. coylei n. sp. or A. metapacificus n. sp. Our pitfall trap data indicate that A. pacificus, A. coylei n. sp. and A. metapacificus n. sp. are sympatric in some regions of southwestern Oregon.

Only six of the 313 adult specimens collected were females. Seminal receptacles (Fig. 54) are like those illustrated by Coyle (1971: figs. 284–291) for this species. The receptacula are evenly sized and the heavily sclerotized stalk of each receptaculum is relatively elongate with a distinctly enlarged terminal region supporting the transparent bulb.

Variation: The dorsal shield of the prosoma length was measured on all males obtained in 2001 in order to determine the largest and smallest specimens. The results of the measurements are (mean ± s.d.): 6.17 ± 0.33 (n = 119). To examine the possible effects of living in arid scrub brush versus woodlands, dorsal shield of the prosoma lengths were analyzed separately for both regions. The results show no significant difference T-test (t value = -0.11, P = 0.916) between the two ecotypes (scrub 6.17 ± 0.34; woods 6.18 ± 0.30).

Antrodiaetus pugnax (Chamberlin)
Figs. 1, 4, 7, 33, 48


Material Examined (m = male). Oregon, Jackson County, Ashland Watershed, Ashland Ranger District, Rogue River National Forest, 1998: N42°85’8.0”, W122°41’14.3” (1219–1268 m elevation), 29 Sept. (1m); N42°8’5.7”, W122°42’24.9” (1463 m elevation), 29 Sept. (11m), 11 Oct. (4m); N42°8’5.7”, W122°41’14.3” (1317–1365 m elevation), 29 Sept. (10m), 11 Oct. (5m). Josephine County, 2001: Illinois Valley Ranger District, Siskiyou National Forest, N42°07’23”, W123°24’25” to N42°08’05”, W123°20’30” (1280–1494 m elevation), 4 Sept. (16m), 17 Sept. (6m), 9 Oct. (9m). Ashland Resource
Area, Medford District, Bureau of Land Management, N42°01’34”, W123°27’42” (1646 m elevation), 4 Sept. (9m), 17 Sept. (2m), 9 Oct. (1m).

**Diagnosis.** The presence of a ventral prominence on tibia and metatarsus I and a group of macrosetae on the tibial I swelling (Fig. 48) will separate males of this species from all others in the genus.

**Abbreviated Description.** With three (occasionally two) separate dorsal opisthosomal sclerotized patches; male genital plate with sclerotized parts divided, straight to slightly recurved (Fig. 33); chelicera without distodorsal projection, without setae on upper ectal surface; with prolateral brush of macrosetae on tibia I (Fig. 48), 67–100% of macrosetae ensiform; tibia I with 2–9 macrosetae retrolaterally, without large heavy macrosetae ventrally; middle of tibia and metatarsus I each greatly swollen in lateral view; metatarsus I weakly sinuous, with pair (setae A–B) of distal macrosetae ventrally; tip of palpal outer conductor sclerite closely appressed to inner conductor sclerite; palpal tibia 2.26–2.42 times longer than wide.

**Distribution.** Oregon, southern Washington, into northwestern Idaho (Figs. 1, 4; Coyle 1971: map 2).

**Wandering Activity.** All individuals were trapped between late August and early October (Fig. 7).

**Comments.** *Antrodiaetus pugnax* was limited to the Siskiyou Mountains study areas. Within the eastern Siskiyou Mountains it was found in equal abundance in burned and unburned sites (16 in each). Within the western Siskiyou Mountains, it was restricted to plant associations within the white fir type near Oregon Caves National Monument. Of the 41 individuals collected in the latter area, 22 were in ABCO-SYMO, 14 were in ABCO-ABMAS/QUSA2 and 5 were in ABCO-BENE2/ACTR plant associations.

All 74 individuals collected were male.

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References


