REDISCOVERY OF CORYNPHILUS PUMILUS (KLUG), AND A NEW GENUS AND TWO NEW SPECIES OF SYMPHYTA FROM SOUTH AMERICA (HYMENOPTERA, PERGIDAE & XIPHYRIDAE)

David R. Smith

ABSTRACT. Corynophilus pumilus (Klug) (Pergidae) is redescribed, and Philinophera olivacea, n. gen., n. sp. (Pergidae), and Brachystipsis impunctus, n. sp. (Xiphyridae), are described. Specimens of C. pumilus were reared from leaf mines in Rosalia montana (Primulaceae) in Brazil, and they represent the first collection of the species since its description in 1834. Corynophilus is transferred from the Syzygiinae to the Acordoxeliniace. Philinophera is based on a specimen from Chile and shares characters with two subfamilies of Pergidae, Panedinae and Philoinae, and is placed in Philinopherinae. It has two preapical spines on the midtibia, a character unique in the family. Brachystipsis impunctus from Chile represents the third species in that genus.

KEYWORDS. Pergidae; Rosalia montana; Chile; South America; Xiphyridae.

I take this opportunity to document three species of Symphyta that have come to my attention since my treatments of the Xiphyridae (Smith, 1988) and Pergidae (Smith, 1990) of South America.

Pergidae

Corynophilus pumilus (Klug) (Figs. 1-7)

Klug (1834) described Corynophilus pumilus from a single male from "Brasilica". It was later placed in Corynophilus by Kirby (1882), who proposed that name for the preoccupied Cephalocera. In my study of the family Pergidae (Smith, 1990), the holotype of that species was the only specimen examined. It is in rather poor condition, and I was unable to clearly see significant characters to allow proper placement. It seemed best to assign it to the subfamily Syzygiinae. More recently Dr. Braulio F.S. Dias, Brazilia, D.F., Brazil, sent me a short series of a sawflies reared from leaf mines in Rosalia montana. Restudy of the holotype and comparison of the holotype side by side with these specimens showed that they are C. pumilus, the first specimens known to me since Klug's 1834 description. I am now able to adequately describe the species and correctly place it, transferring it to the subfamily Acordoxeliniace in my 1990 classification.

This is the first instance of a leaf mining habit in neotropical Pergidae. The only other Pergidae that are known to be leaf miners are the Australian Phylacteophasinae in Eucalyptus.

Female. Length 4.0 - 5.5 mm. Black with antenna more brownish and sometimes abdomen more brownish than black thorax; mandible yellowish with apex black. Head and body texture smooth and shining. Antenna (Fig. 2) stout, slightly clubbed, 7-segmented, first two segments about as long as broad, 3rd segment longer

than 4th, apical 3 segments slightly enlarged; antennal length slightly shorter than (0.9X) head width. Eye margins straight, not converging below, lower interocular distance 1.4X eye length; postocular area slightly broader (1.25X) than long; clypeus truncate; malar space nearly linear; each mandible with two small subapical teeth (Fig. 7); maxillary palpus 6-segmented, length shorter than eye length; labial palpus 4-segmented; labium with fused glossae and undivided paraglossae, the three subequal in size and shape, giving labium trilobed appearance (Fig. 6). Mesopleural sutures faint; mesopleural sutures obsolete behind; mesocutellum not carinate behind; cervical sclerites pointed on meson. Mid- and hindtibiae each with preapical spine; tarsal claws simple; hindbasitarsus slightly longer than following two tarsal segments combined. Forewing with 3 or 4 cubital cells, first cubital crossec cell may be distinct, faint, or apparently absent (wings as in figure 1). Hindwing with vein r-m not in a straight line. Length of hindbasitarsus subequal to length of three following tarsal segments together; inner hindtibial spur half length of hindbasitarsus; foretibia with 2 apical spurs. Sheath short and rounded at apex in lateral view, broad at base and tapering to apex in dorsal view (Fig. 4). Lancet as in figure 3.

Male. Length, 3.0 - 3.5 mm. Similar in color and structure to female. Genitalia as in figure 5.


Taxonomic placement. Corynophilus is more properly placed in the subfamily Acordulcerinae because of the following characteristics: 6-segmented maxillary palp; 4-segmented labial palp; trilobed labium; presence of preapical spines on the mid- and hindtibiae; hair and distinct mesopleural suture; mesopleural sutures obsolete behind; and lack of anal cell in forewing. The Syzyginiinae have a 3-5 segmented maxillary palp; 2-3 segmented labial palp; single-lobed labium; and distinct mesopleural and mesopleural sutures.

The genus traces to couplets 5 and 6 in my 1990 key to genera of Acordulcerinae. These couplets include the genera with 7-segmented antennae: Acordulceridea, Swatran, and Bocalis. Corynophilus would go to Swatranus which has the third antennal segment longer than the fourth segment. The other two genera have the third antennal segment shorter than or subequal in length to the fourth segment. Corynophilus is separated from Swatranus as follows:

5. Third antennal segment longer than fourth segment .................. 6
   Third antennal segment shorter than or subequal in length to fourth segment

5a. Antenna filiform, slender; head in dorsal view strongly narrowed behind eyes; lower interocular distance shorter than eye length .......... Swatranus
   Antenna short, slightly clubbed; head in dorsal view somewhat broadened behind eyes; lower interocular distance greater than eye length .......... Corynophilus
Philoperra, gen. n.

**Type species:** Philoperra obscura Smith, by present designation.

Antennae long, slender, serrate in female. Palpi uniformly slender, maxillary palpus 6-segmented, labial palpus 4-segmented (unable to see labrum without damaging specimen). Mesoscutellum not bicolored; mesosternal-pleural sutures present; cenchri broad and close together, distance between them equal to half breadth of one. Forewing (Fig. 10) with median cell large; radial cell open at apex; crossvein 2r-m absent, therefore with 3 cubital cells; part of vein 2A+3A present, but obliterated apically, thus representing a partial anal cell; costa narrower than intercostal area except where swollen toward apex; hindwing with radial cell open at apex. Basal plates completely sclerotized, without membranous area. Midtibia with two preapical spines; hindtibia with one preapical spine; foretibia with two equal apical spines.

This genus is assigned to the subfamily Philomastiginae. Though some characteristics are shared with the Perreyiinae, as the presence of a partial anal cell and large cell M in the forewing, most are typical for the Philomastiginae, especially the presence of preapical spines on the mid- and hindtibiae which are lacking in the Perreyiinae. It is the first specimen I have seen that shares such significant characters with each subfamily, and it may represent a potential link between the two. It also shares characters with the monotypic Australian subfamily Syracocytechinae which has a petiolate anal cell in the forewing and has preapical spines on the mid- and hindtibiae. The partial anal cell in the forewing and presence of two preapical spines on the midtibia are so unique in the included species that conceivably a new subfamily could be considered. However, without speculating on its exact placement and affinities, I believe it is properly placed in the Philomastiginae pending discovery and study of additional material, especially the male.

The occurrence of two preapical spines on the midtibia deserves special emphasis. A number of Perigidae and Argidae have a single preapical spine, but this is the first known instance of two preapical spines in the Perigidae. It is found in only one other genus in the Thelyphonida, the Australian argid genus Zernary, which is considered a very primitive member of the Argidae. The families considered the most primitive in the Symphyta, Xyelidae, Pamphiliidae, and Megalodontidae, have three or more preapical spines on the mid- and hindtibiae, and also some Cephalidae have two preapical spines on the hindtibiae. However, this was unknown in other groups except for Zernary, and now Philoperra. The discovery of this in the Perigidae may be of significant value in studies of the phylogeny of the family or superfamily.

The anal cell of the forewing is complete only in the Perreyiinae and Syracocytechinae in the Perigidae. In other groups such as the Australian Eurytidae and neotropical Conocoxinae, only a short stub of vein 2A+3A is present. The presence of a long vein 2A+3A in Philoperra represents an intermediate loss of this vein.

This genus is separated from the other two genera of South American Philomastiginae, Ceratoscarus and Ecopanus, by the partial presence of vein 2A+3A and presence of three cubital cells in the forewing and presence of two preapical spines on the midtibia.

The genus name is a combination of Philomastiginae and Perreyiinae, indicating its affinities to each taxon; gender, feminine.
Figs. 1-7. Corynecephalus pumilus: 1, Forewing and hindwing; forewing length = 3.0 mm. 2, Antenna; length = 0.8 mm. 3, Female lancet; length = 0.6 mm. 4, Female sheath, lateral and dorsal views; length = 0.8 mm. 5, Male genitalia, ventral view of genital capsules on left; lateral view of penis valve on right; length of genital capsule = 0.5 mm. 6, Palpi; length = 0.4 mm. 7, Left mandible; length = 0.4 mm.
Philoperra obscura, sp. n.
(Figs. 8-13)
Female. Length, 10.0 mm. Antenna, head and thorax black; abdomen and most of basal plates orange, basal plates laterally and sheath black; with hind femur, inner surface of hind coxa, outer surface of mid femur, and outer surface of apical half of fore femur orange. Wings uniformly lightly black infuscated; veins and stigma black. Texture of head and body smooth and shining with widely scattered punctures on thorax; abdomen with fine transverse microsculpture. Antennal length 2X head width; 21–22 segmented (apical segments fused and difficult to distinguish); 1st and 2nd segments about as broad as long; 3rd segment longer than 4th segment and subequal in length to following 3 segments; 3rd segment with short apical projection; segments 4–17 each with short rounded projection (Fig. 11); segments 18 to apex without projections. Malar space subequal to distance between antennal sockets and nearly 2X broader than diameter of front ocellus; clypeus truncate; postocular area 3X broader than long; inner margins of eyes converging below, lower interocular distance 1.5 X eye length, head from above broadened behind eyes; maxillary and labial palpi slender, shorter than eye length. Tarsal claws simple; hind tarsal spurs shorter than length of following two tarsal segments combined; inner hind tibial spur long and stout, its length 0.75X length of hind tarsus, and longer than width of hind tibia at its apex; outer hind tibial spur short and slender, about a third of length of inner spur and less than half width of hind tibia at its apex. Sheath with posteriorly projecting scopae (Fig. 12). Labeled as in figure 13.
Male. Unknown.

Xiphidiidae
Brachyxyphus impunctatus, sp. n.
(Figs. 14, 17, 18)
Female. Length, 15–20 mm: Antenna and head black; mandible except apex brownish; thorax black with mesepisternum and mesonotum orange except for black downturned lateral areas; abdomen orange with basal plates, apical tergum, and sheath black; legs black. Wings uniformly darkly black infuscated; veins and stigma black. Texture smooth and shining without surface sculpture except for some widely spaced punctures on interantennal area, para-antennal areas, supraelytral area, clypeus and mandible; short transverse carina near apex of mesoscutellum, and area from carina to apex of scutellum dull and rugose; standing hairs sparse on head and thorax and those present much shorter than length of 2nd antennal segment. Antenna filiform, 24–25 segmented. Malar space about half length of 3rd antennal segment; inner margins of eyes straight, not converging, lower interocular distance 1.7X eye length; postocular area about as long as broad and defined by distinct lateral furrows. Apical hindtarsal segment enlarged, its length nearly 1.5X length of hindtarsus; tarsal claw with small inner tooth. Sheath rounded at apex in lateral view, uniformly slender in dorsal view (Fig. 14).
Male. Length, 12 mm. Color similar to female with apical half of apical tergum blackish. Structural characters as for female except apical segment of hindtarsus normal, its length about 0.7X length of hindbasitarsus.

Holotype. Female, labeled “T. Rio Blanco, Curacautin, 6, 18-Febbrero, 43, 1050, 1500 m, coll. L.E. Pena.” Deposited at the Museo Nacional de Historia Natural, Santiago, Chile.
Figs. 15–18. *Brachysiphus hyalinus* from "Punta Arenas" and *B. impunctatus* holotype female. 15, Dorsal view of head and thorax of *B. hyalinus*. 16, Lateral view of head and thorax of *B. hyalinus*. 17, Dorsal view of head and thorax of *B. impunctatus*. 18, Lateral view of head and thorax of *B. impunctatus*. Length of head + thorax of both species = 8.0 mm
Paratypes. Chile: Pelluhue, Costa Maule, 2-Aug.-53, 600 m, coll: L.E. Pena (1 female, deposited with the holotype); Gorbea [spelling uncertain, handwritten on label], 14 Enero 1952 (1 male, National Museum of Natural History, Washington, D.C.).

Discussion. This species is easily distinguished from *B. grandis* Phillipi and *B. hyalinus* Kirby by its smooth and shining texture and lack of dense, long hairs on the head and thorax (compare figures 15-18). In addition, the malar space of the other *Brachyxyphus* species is broader, subequal to the length of the 3rd antennal segment; the head and thorax are black with the tegula yellowish; the abdomen is orange with the basal plates, part of the first two terga, the apical two terga, and sheath black; and the apical hindtarsal segment is about 1.2X the length of the hindbasitarsus. In *B. hyalinus*, the wings are hyaline to yellowish, and in *B. grandis* the wings are blackish.

This unusual species necessitates a slight change in the generic definition of the *Brachyxyphus* and *Brachyxyphus*. Sorrin (1988) indicated that these taxa have the head dull and deeply sculptured, and that there are standing hairs on the head that are subequal to or longer than the length of the pedicel. This is true for the previously known species, *B. grandis* and *B. hyalinus*. This new species shares all characters with the tribe and its only genus, including the presence of lateral furrows which distinctly define the postocular area, but it is entirely smooth and shiny and lacks the dull surface sculpture and dense standing hairs present in the other species.

The specimen of *Brachyxyphus hyalinus* compared and photographed (Figs. 15, 16) is a female from “Punta Arenas”, in the Museo Nacional de Historia Natural, Santiago, Chile.

Acknowledgments. With thanks to Brusilof F.S. Dias, Reserva Ecológica do IBGE, Brasilia, D.F., for finding and housing the specimen of *C. pumilia* and sharing its host information; to F. Koch, Museum für Naturkunde der Humboldt-Universität zu Berlin, for naming King’s holotype; and to Mario Elgueta D., Museo Nacional de Historia Natural, Santiago, Chile, for the loan of specimens. Linda Lawrence, staff illustrator for the Systematic Entomology Laboratory, prepared the figures of the antennae, wings, and ovipositor of *C. pumilia.*

I express appreciation to the following for reviewing this manuscript: W.W. Middlekauff, University of California, Berkeley; Henry Godet, Biological Resources Division, Agriculture Canada, Ottawa; and N.E. Woodley and D.A. Nickle, Systematic Entomology Laboratory, U.S.D.A., Washington, D.C.

REFERENCES


Received 16.06.1993; accepted 10.11.1994.