OFFADENS, A NEW GENUS OF SMALL MINNOW MAYFLIES
(EPMEROPTERA: BAETIDAE) FROM AUSTRALIA

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Abstract.—Offadens, new genus (Ephemeroptera: Baetidae), is described and includes the Australian O. sobrinus, new species, and O. soror (Ulmer), new combination. The genus is unique among baetid larvae because of the presence of a small tooth between the incisors and prostheca of the right mandible. Offadens sobrinus is described from larvae from New South Wales, and is distinguished from O. soror by the deeply cleft incisors of the right mandible and longer and narrower segment 2 of the labial palps with a narrow distomedial process. The morphology of the maxillary palps of O. soror is discussed.

Key Words: Ephemeroptera, Baetidae, Offadens, new genus, new species, new combination, Australia

Small minnow mayflies (Ephemeroptera: Baetidae) are poorly known in Australia. Thirteen species in the genera Baetis Leach (4 spp.), Bungona Harker (1 sp.), Centropilum Eaton (2 spp.), Claceon Leach (5 spp.), and Pseudocloeon Klapálek (1 sp.) have been known historically, and Lugo-Ortiz and McCafferty (1998) recently described two new species of Claceodes Traver from the eastern part of the continent. The taxonomic status of those Australian species assigned to Baetis, Centropilum, and Pseudocloeon is uncertain because of outmoded generic concepts. This dearth of faunistic data on Australian Baetidae stands in marked contrast to the knowledge of most other mayfly families reported from the continent, presumably because baetids are generally small and therefore difficult to collect and study.

We herein describe a new genus of Baetidae from Australia. We describe a new species based on larvae collected from the southeastern part of the continent and assign to the new genus one of the species originally described in Baetis. Except where otherwise noted, the specimens studied are housed in the Purdue Entomological Research Collection, West Lafayette, Indiana.

Offadens Lugo-Ortiz and McCafferty, new genus

Larva.—Head: Labrum (Fig. 1; Suter 1986: Fig. 21j, k) with anterior margin almost straight and with deep anteromedial notch. Hypopharynx (Fig. 2; Suter 1986: 21r) with lingua with distomedial convexity. Left mandible (Fig. 3; Suter 1986: 21n, o) with incisors fused; prostheca robust, apically denticulate. Right mandible with incisors fused (Suter 1986: 21p, q) or deeply cleft (Fig. 4); prostheca slender, medially with minute, fine, simple setae; small tooth between prostheca and mola and at base of mola. Maxillary palp (Fig. 5) two segmented, extending beyond galealacinia. Labium (Fig. 6; Suter 1986: 21m) with glossa subequal in length to paraglossa; palp three segmented; segment 2 with distomedial projection. Thorax: Legs (Fig. 7; Suter 1986: 21f) with femora lacking villopore; tarsal claws (Fig. 8; Suter 1986: 21g) elon-
gate. Abdomen: Terga (Fig. 9) with abundant small scale bases and regularly spaced marginal spines posteriorly. Gills (Fig. 10; Suter 1986: 21i, 1') platelike, held dorsolaterally, with minute marginal serrations and fine, simple setae. Paraproct (Fig. 11; Suter 1986: 21h) with marginal spines. Cercus with abundant short, fine, simple setae medially; terminal filament with abundant short, fine, simple setae laterally.

Adult.—Forewing (Suter 1986: Fig. 21a) with paired marginal intercalaries. Hindwing (Suter 1986: Fig. 21b) with small, acute costal projection in basal one third; three longitudinal veins present, middle vein forked. Male genital forceps (Suter 1986: Fig. 21d) three segmented; segment 2 strongly bowed inwardly; segment 3 elongate, ellipsoidal.

Etymology.—The generic name is a combination of the Latin words offa (morsel) and dens (tooth). It is in reference to the small tooth between the incisors and mola of the right mandible of the larva. The name is masculine.

Type species.—Offadens sobrinus Lugo-Ortiz and McCafferty, new species.

Species included.—Offadens sobrinus Lugo-Ortiz and McCafferty, new species; O. soror (Ulmer), new combination.

Distribution.—Australia: New South Wales, South Australia, Tasmania, Western Australia.

Discussion.—Offadens is similar to Baetis in several respects, but is not a member of the Baetis complex of genera (see, e.g. Waltz et al. 1994, Lugo-Ortiz and McCafferty 1997). The presence of a small tooth between the prosthca and mola of the right mandible (Fig. 4; Suter 1986: Fig. 21p) and the lack of the femoral villopore (Waltz and McCafferty 1987: Figs. 1, 4, 5, 12, 17) clearly distinguish larvae of Offadens from those of Baetis and its cognate genera. Adults of Offadens cannot be adequately distinguished at this time from those of other baetid genera with double marginal intercalaries in the forewings.

Apart from the fact that Offadens cannot be considered to belong to the Baetis complex of genera because it lacks the villopore, its phylogenetic relationships cannot be determined at this time. It is possible that Offadens is endemic to Australia as we have not seen other baetids with a similar right mandibular tooth. Cognate taxa may come to light as the baetid fauna of Australia and Southeast Asia are more thoroughly examined and documented.

**Offadens sobrinus** Lugo-Ortiz and McCafferty, new species

(Figs. 1–11)

Larva.—Body length: 4.5–5.5 mm. Caudal filament length: 2.3–2.8 mm. Head: Coloration pale yellow-brown, with no distinct pattern. Antenna approximately 2.5× length of head capsule. Labrum (Fig. 1) with submarginal row of four to six long, fine, simple setae. Hypopharynx as in Fig. 2. Left mandible (Fig. 3) with outer set of incisors with one large and two small denticles; inner set with four small denticles. Right mandible (Fig. 4) with outer incisors with large, thumblike denticle and inner incisors with four denticles. Maxillary palp (Fig. 5) two segmented; segment 1 approximately 0.68× length of segment 2. Labium (Fig. 6) with palp segment 1 as long as segments 2 and 3 combined; segment 2 approximately 2.5× length of segment 3, with narrow distomedial process and four to six short, fine, simple setae dorsally; segment 3 subconical, with abundant short, fine, simple setae scattered over surface. Thorax: Coloration pale yellow-brown, with no distinct pattern. Hindwing pads present. Legs (Fig. 7) with femora with row of long, robust, simple setae dorsally and short, stout, simple setae scattered ventrally; tibiae with row of robust, simple setae ventrally, slightly increasing in length distally, and minute, fine, simple setae dorsally; tarsal claws (Fig. 8) slightly elongate, with 8–10 denticles. Abdomen: Coloration pale yellow-brown, with no distinct pattern. Terga (Fig. 9) with abundant scale bases and regularly spaced posterior marginal spines; spines ap-
proximately 1.5× longer than basal width. Gills (Fig. 10) on abdominal segments 1–7, plate-like, with translucent tracheation. Paraproct (Fig. 11) with 16–18 marginal spines. Cercus pale yellow-brown; terminal filament approximately 0.78× as long as cercus.

Adult.—Unknown.


Etymology.—The specific epithet is the Latin word for cousin.

Discussion.—_Offadens sobrinus_ is distinguished from _O. soror_ (see below) by the deeply cleft incisors of the right mandible (Fig. 4) and the longer and narrower segment 2 of the labial palps with a narrow distomedial process (Fig. 6).

_Offadens soror_ (Ulmer), _n. comb._

_Baetis soror_ Ulmer 1908:44 (male, female adults); Suter 1986:354 (larva).


Discussion.—_Offadens soror_ is distinguished from _O. sobrinus_ (see above) by the fused incisors of the right mandible (Suter 1986: Fig. 21p, q) and the shorter segment 2 of the labial palps with a small distomedial process (Suter 1986: Fig. 21m).

Suter (1986: Fig. 211) indicated that the maxillary palps of _O. soror_ were three segmented. Our examination of specimens of _O. soror_ revealed only two segments. We expect that Suter’s (1986) depiction of a third segment is due to a mounting artifact, as in some specimens the tip of segment 2 of the maxillary palps tends to constrict somewhat when mounted. On the other hand, if correctly depicted, Suter’s specimens possibly represent a variant of the species.

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LITERATURE CITED


