

FOUR NEW SPECIES OF NEOTROPICAL BAETIS

(EPHEMEROPTERA: BAETIDAE)

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ABSTRACT—Four new species of *Baetis* are described and figured from Uruguay.

The specimens of *Baetis* described herein were collected in Uruguay by Dr. C. S. Carbonell of the Department of Entomology, Faculty of the Humanities and Sciences of the University of the Republic of Uruguay. Representatives of each species will be placed in the entomological collection of that university.

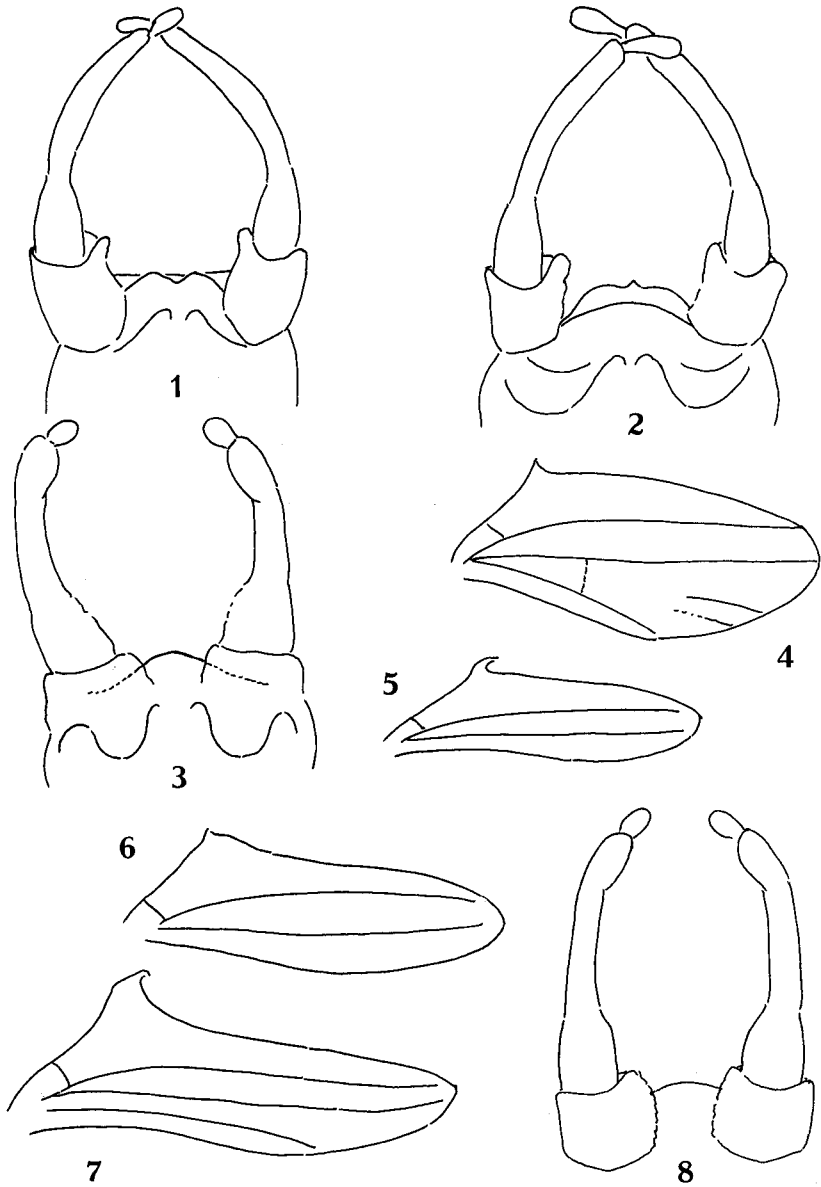
***Baetis aneto*, n. sp.**

(Figs. 1, 4)

Represented by ♂ and ♀ imagos and subimagos. Costal angulation of hind wing acute but not hooked, 3 longitudinal veins; dark brown dorsal or dorso-lateral markings on certain abdominal terga.

Male imago.—Body 4–5 mm.; fore wing 3.5–4 mm. Head pale reddish brown. Scape and pedicel of antenna pale reddish brown, darker at joinings; flagellum yellowish brown. Turbinate eyes yellowish orange; in dorsal view, hemispheroidal (inner margin straight); not contiguous dorsally; on moderate stalks. Pronotum yellowish to pale reddish brown, shaded along postero-median and lateral areas with smoky brown. Meso- and metathorax bright to dark reddish brown; yellowish brown in areas around and preceding wing bases, also on membrane between pro- and mesosterna; metanotal shield brighter reddish brown than other areas. Wings hyaline whitish: both fore and hind wings very narrowly reddish brown at extreme bases, this color continued for a short distance along Sc and Rl of fore wing. Stigmatic cross veins of fore wing 4–5 in number, slanting, a few may be incomplete; some anastomosis; stigmatic area semi-opaque. No marginal intercalaries in Sc space, those in radial space quite short. Costal angulation of hind wing acute; 3 longitudinal veins, 3 shorter than 1 and 2; usually 1, sometimes 2 marginal intercalaries between veins 2 and 3. Hind wing as in fig. 4. Legs yellowish; claws and tarsal joinings dusky. Abdomen yellowish; apical segments shaded with pale reddish brown. Anterior and posterior margins of basal and middle segments (terga and sterna) may be very narrowly darker, on terga principally in dorsal areas; posterior margins of terga 8–10 may be very narrowly darkened. Narrow black hairline, with short lateral extensions on terga and sterna, along pleural fold on basal and middle segments. Terga variously marked with grayish to dark brown patches, some variations of these as noted: (1) wedged-shaped submedian marks on tergum 3 only; (2) squarish blotches open at anterior margin and enclosing a yellow patch, on terga 2 and 3, narrow dark gray posterior margin on tergum 5, crescent-shaped blotch across tergum 6; (3) irregularly shaped dark

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Figs. 1-8. 1 and 4, *Baetis aneto*, n. sp.: 1, ♂ genitalia; 4, hind wing. 5 and 8, *B. aymara*, n. sp.; 5, hind wing; 8, ♂ genitalia. 2 and 6, *B. coveloae*, n. sp.; 2, ♂ genitalia; 6, hind wing. 3 and 7, *B. yaro*, n. sp.; 3, ♂ genitalia; 7, hind wing.

brown blotches each side of terga 2, 3 and 6, smaller and more lateral on 4 and 5, plus triangular dark brown blotches at mid-areas on 3 and 6; (4) brown blotches on terga 2 and 3, smaller marks on 3 and 6, these lateral on 2, median on 3 and 6. Other variations also occur. Cerci whitish, not darkened at joinings. Genitalia as in fig. 1.

Female imago.—Body 3.5–4.5 mm.; fore wing 3.75–4.25 mm. Head flesh color to yellowish; may have dark shading between eyes on vertex. Thorax yellowish to flesh color on pleura and venter, pale reddish brown dorsally; mesonotal shield generally narrowly dark-margined; pronotum slightly paler than mesonotum. Wings essentially as in ♂; 4–6 stigmatic cross veins in fore wing, anastomosis very slight. Legs as in ♂. Abdomen (when not filled with ova) yellowish; pleural hairline as in ♂. Tergal markings as variable as in ♂; may be even more extensive or confined to submedian oblique streaks on terga 2 and 3, or on tergum 3 only. Cerci as in ♂.

Holotype, male.—Uruguay, Prov. Salto. Salto Grande, Rio Uruguay; 10–XI–55. C. S. Carbonell, collector. In collection of Department of Entomology, University of Uruguay, Montevideo, Uruguay.

Allotype, female.—Same data as holotype; in private collection of J. R. Traver.

Paratypes, 5♂♂ and 62♀♀ imagos.—Uruguay, Prov. Paysandu; Santa Rita, Rio Uruguay, 8–XI–55; 9♂♂ and 20♀♀.—same data as holotype. Specimens equally divided between Dept. of Entomology, Univ. of Uruguay, and private collection of JRT.

This species is named for a South American Indian tribe. Many other females and subimagos of both sexes taken at the above localities are not included among the paratypes.

South American species described in *Baetis* having 3 veins in the hind wing, none of these veins forked, include *opacus* (1915), *abundans* (1912), and *gloriosus* (1923), all described by Navas; it is now known that all 3 of these are *Callibaetis*, not *Baetis*. *Baetis melleus* Needham and Murphy (1924) is quite unlike *B. aneto* as to hind wing, genitalia and body coloration. From Costa Rica, Navas described *B. sinuosus* (1924); it differs markedly in coloration from *aneto*.

***Baetis aymara*, n. sp.**

(Figs. 5, 8)

Represented by ♂ and ♀ imagos. Costal angulation of hind wing hooked, 2 longitudinal veins only; abdominal terga pale, unmarked.

Male imago.—Body 5 mm.; fore wing 4.5 mm. Head and antennae yellowish. Ocelli black-ringed at base, most prominent on middle ocellus. Turbinate eyes quite large, yellow-orange, in dorsal view somewhat hemispheroidal; on stalks of moderate height. Thorax yellowish to pale reddish brown. Pronotum paler than mesonotum, inconspicuous oblique black submedian streaks from anterior margin; no other distinctive markings on thorax. Mesoscutellum paler than shield, margined narrowly with dusky. Wings whitish, hyaline; stigmatic area of fore wing semi-opaque; no marginal intercalaries in Sc space; 4–6 stigmatic cross veins,

somewhat slanting, 1 of these may be incomplete. Hind wing slender, 2 longitudinal veins only; costal angulation hooked, as in fig. 5. Legs yellowish; tarsal segments may be very narrowly darkened at joinings. Abdomen whitish with faint yellowish tinge, apical segments very pale reddish brown, semi-opaque, basal and middle segments translucent. Tiny black stigmatic dots on basal and middle segments, connected along pleural fold by a faint blackish hairline. Terga 9 and 10, and in 1 specimen 7 and 8 also, very narrowly darker on posterior margins. Cerci pale yellowish white, not darker at joinings. Genitalia as in fig. 8.

Female imago.—Body 4 mm.; fore wing 5 mm. Smaller than ♂ but similarly colored; hind wing similar but more slender.

Holotype, male.—Uruguay, Prov. Treinta y Tres. Quebrada de los Cuervos, 17–XII–52. C. S. Carbonell, collector. In collection of Department of Entomology, University of Uruguay.

Paratypes.—2♂♂ and 1♀ imago; same data as holotype. One ♂ in collection of Department of Entomology, University of Uruguay; others in private collection of J. R. Traver.

This species is named for a South American Indian tribe. The only previously described Neotropical species of *Baetis* known to have only 2 longitudinal veins in the hind wing and a strongly hooked costal angulation on that wing is *B. garcianus* Traver (1938) from Puerto Rico. *B. aymara* lacks the lateral blotches on abdominal terga present in *garcianus*; the genitalia of these 2 species are dissimilar.

***Baetis coveloae*, n. sp.**

(Figs. 2, 6)

Represented by 32♂♂ imagos. Costal angulation of hind wing rather blunt, 2 longitudinal veins only; abdominal terga fawn-color, unmarked; median spine on penis cover.

Male imago.—Body 5 mm.; fore wing 4.5–5.25 mm. Head reddish brown; scape of antenna dark brown, pedicel paler brown, each narrowly darker at joinings; flagellum yellowish. Turbinate eyes orange, narrow dark ring at base of each; oval in dorsal aspect, well separated dorsally; on rather tall stalks. Thorax rather dark reddish brown above and below; metanotum and in some specimens mesonotal area brighter red-brown. Legs yellowish; femora may be slightly brown-tinted; femora and tibiae narrowly darker at joining; tarsi very pale. Wings whitish, hyaline; reddish brown tinge at extreme wing bases; longitudinal veins faintly yellowish; stigmatic area of fore wing opaque; 4–6 slanting stigmatic cross veins often widely spaced, 1 or 2 may be incomplete, 1 may be forked, incomplete anastomosis may be present. In Sc marginal space, 1 or 2 short intercalaries. Hind wing 2-veined, occasionally 1 or more cross veins faintly indicated; costal angulation and adjacent area reminiscent of genus *Dactylobaetis* Traver and Edmunds (1968). See fig. 6. Abdomen fawn-color, pale reddish brown, venter slightly paler than dorsum; apical segments darker, somewhat opaque. Posterior margins of all segments narrowly dark brown, darker on terga than sterna; narrow dark line along pleural fold. Cerci very pale yellowish white, unmarked. Genitalia as in fig. 2.

Holotype, male.—Uruguay, Prov. Maldonado. Cerro Animas, 14-IX-50, C. S. Carbonell, collector. In collection of Department of Entomology, University of Uruguay.

Paratypes.—31 ♂ imagos; all from same locality as holotype. 1 ♂, 13-VIII-50; 3 ♂ ♂, 16-VII-50; 27 ♂ ♂, same date as holotype. C. S. Carbonell, collector. Specimens divided equally between Entomological collection of the University of Uruguay and private collection of J. R. Traver.

This species is named in honor of Señora Lucrezia Covelo.

Although the hind wing is very similar to many species of *Dactylobatis*, Traver and Edmunds (1968), this species is placed tentatively in *Baetis* rather than *Dactylobaetis*, since the presence of intercalaries in the Sc space of the fore wing and the spine on the penis cover distinguish it from any species thus far known in *Dactylobaetis*. Immature nymphs of the latter genus are known to occur in Maldonado Province; only the rearing of mature nymphs would determine to which genus the species *coveloae* really belongs.

***Baetis yaro*, n. sp.**

(Figs. 3, 7)

Represented by a single ♂ imago. Costal angulation of hind wing hooked, 3 longitudinal veins; abdominal terga fawn-color, chestnut brown submedian patches on 2-7.

Male imago.—Body 7 mm.; fore wing 7 mm. Head pale reddish brown, flagellum of antenna yellowish. Turbinate eyes orange, oval in dorsal aspect, not quite contiguous dorsally; on rather low stalks. Thorax reddish brown; median dorsal stripe on mesonotum slightly darker than other areas, enclosing a very narrow black streak in posterior half. Meso- and metasterna darker than other parts of sterna. Femora and fore tibia very pale reddish brown, other tibiae and all tarsi yellowish; femoro-tibial joining, tarsal joinings and claws reddish brown. Wings whitish, hyaline. No marginal intercalaries in Sc space of fore wing; about 8 slanting cross veins in opaque stigmatic area, spaced unevenly, 1 of these incomplete, not reaching Sc. Hind wing 3 veined, 3rd vein shortest; costal angulation prominent, hooked at tip, widened at base, as in fig. 7. Abdomen fawn-color, light reddish brown, venter somewhat paler than dorsum, terga 8 and 9 darker than those preceding. Abdominal terga 2-7 with wedge-shaped chestnut brown patches laterally, these largest and most distinct on basal segments, leaving antero-lateral angles paler. Intersegmental areas pale; very narrow black hairline along pleural fold, darkest on basal segments; submedian oblique streaks from anterior margins on sterna 7 and 8, faint indications of shorter streaks from anterior margins laterad of oblique dashes. Cerci pale yellowish white, the 2 basal segments darkened at joinings. Genitalia as in fig. 3.

Holotype, male.—Uruguay, Prov. Maldonado. Cerro Animas, 16-VII-50, C. S. Carbonell, collector. In collection of Department of Entomology, University of Uruguay.

This species is named for an Uruguayan Indian tribe. The hind wing of *B. yaro* is quite similar to that of *B. melleus* Needham and Murphy (1924), and the genitalia of these 2 species are not unlike. The strikingly marked abdomen of *yaro* distinguishes it at once from *B. melleus*, to which species it seems most closely allied.

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OLIGOCARICIS LEA A SYNONYM OF SMICRONYX SCHOENHERR

(COLEOPTERA: CURCULIONIDAE)

Lea (1926, Proc. Linn. Soc. New South Wales 51:327-362) described *Oligocaricis* and the single included species, *O. longirostris*, from two male specimens, of which one, in the R. Helms collection, was from the Behn River in north-western Australia and the other, in the British Museum, from the Adelaide River in Northern Territory, Australia. In examining the latter specimen at the British Museum, I found that it is quite typical of the genus *Smicronyx* Schoenherr, 1843. It shows the usual external characters of *Smicronyx*, including the fine constriction separating the rostrum from the rest of the head and the small partly connate tarsal claws. It also has the exodont mandibles that I noted (1962, Proc. U.S. Nat. Mus. 113:200) in many species of *Smicronyx*. I have not seen or located the other of Lea's two specimens, but I have also seen nothing in the original description that would indicate a significant difference between the specimens.

In addition to proposing the transfer of *Oligocaricis longirostris* Lea to *Smicronyx*, I am here designating the specimen from the Adelaide River as lectotype of that species. According to the accessions catalog of the British Museum, the specimen was collected at the Adelaide River on August 8-13, 1890 by Mr. J. J. Walker during a cruise of the H.M.S. Penguin. This is the first record of the occurrence of any species of *Smicronyx* in Australia.

I thank the staff of the Department of Entomology, British Museum (Nat. History) for the aid and courtesies extended to me when these observations were made.—D. M. ANDERSON, *Systematic Entomology Laboratory, Agricultural Research Service, U.S. Department of Agriculture, c/o U.S. National Museum, Washington, D.C. 20560.*