



## A new species of *Campsurus* (Ephemeroptera: Polymitarciidae: Campsurinae) from Argentina and Uruguay and redescription of *C. evanidus* and *C. jorgenseni* with new synonymies

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### Abstract

The subfamily Campsurinae (Ephemeroptera: Polymitarciidae) includes one of the most speciose genera of Ephemeroptera, *Campsurus* (with 40 known species), with a Pan-American distribution and its greatest diversity in South America. The following new synonymies are proposed: *C. evanidus* Needham & Murphy, 1924 (= *C. juradinus* Navás, 1930) and *C. jorgenseni* Esben-Petersen, 1912 (= *C. scutellaris* Needham & Murphy, 1924). Redescriptions, drawings and photographs are provided for both species. *C. vulturorum* **sp. nov.** from Argentina and Uruguay is described and illustrated for all life stages. It is characterized, in the adult stage, by: very large size (male fore wings 15.9–20.5 mm, female fore wings 21.0–28.0 mm), posterior margin of male abdominal sternum IX convex and rounded, pedestals subrectangular with a short projection on outer-posterior margin; penes widely separated distally, each arm formed by two lobes; and in mature nymphs by: mandibular tusks robust with a large submedian tubercle and six subapical rounded and small tubercles, maxilla with a short flat and triangular membranous gill on cardo.

**Key words:** Ephemeroidea, burrowing mayflies, *Campsurus juradinus*, *Campsurus scutellaris*, Neotropical mayflies

### Resumen

La subfamilia Campsurinae (Ephemeroptera: Polymitarciidae) incluye uno de los géneros más diversos de Ephemeroptera: *Campsurus*, (con 40 especies descritas) con una distribución panamericana y con el mayor número de especies en América del Sur. Se proponen las siguientes nuevas sinonimias: *C. evanidus* Needham & Murphy, 1924 (= *C. juradinus* Navás, 1930) y *C. jorgenseni* Esben-Petersen, 1912 (= *C. scutellaris* Needham & Murphy, 1924). Se presentan redescriptiones, dibujos y fotografías para ambas especies. *Campsurus vulturorum* **sp. nov.** de Argentina y Uruguay es descrita a partir de todos sus estados, se caracteriza en el estado adulto por: tamaño muy grande (alas anteriores del macho 15.9-20.5 mm, alas anteriores de la hembra 21.0–28.0 mm), margen posterior del 9º esterno abdominal masculino convexo y redondeado, pedestales subrectangulares con una corta proyección en el margen posterior externo, penes muy separados distalmente, cada uno formado por dos lóbulos; y en las ninfas maduras: colmillos mandibulares robustos con un gran tubérculo submediano y 6 tubérculos pequeños y redondeados subapicales, maxila con una branquia membranosa corta, delgada y triangular en el cardo.

### Introduction

Polymitarciidae is a group of “burrowing mayflies” (Ephemeroidea), characterized by its nymphs adapted to live in tunnels they build in different substrates such as soft mud, hard clay, plant tissues (McCafferty 1975) and with very short-lived adults. The family is composed by three subfamilies: Polymitarciinae, Asthenopodinae and Campsurinae. The last one with three genera: *Campsurus* Eaton, *Tortopus* Needham & Murphy and the recently

described *Tortopsis Molineri* (Molineri 2010) and more than 50 species, showing a Pan-American distribution with its greatest diversity in South America (Domínguez *et al.* 2006; Molineri & Emmerich 2010). The genus *Campsurus*, including 40 described species, is the most speciose of the South American mayfly genera; however, its knowledge is still limited. It is probably that many currently described species are synonymous. However, this genus continues to be one of the most speciose of the order Ephemeroptera.

In this paper adults of both sexes of *Campsurus evanidus* Needham & Murphy and *Campsurus jorgenseni* Esben-Petersen are redescribed and illustrated. New country records and synonymies are given for both species. Finally, a new species from Uruguay and Northeastern Argentina *Campsurus vulturorum* **sp. nov.** is described and illustrated from nymphs, male and female imagos.

## Material and methods

All material was fixed and preserved in 96% alcohol, except where otherwise stated. Dissected parts were mounted in Canada Balsam except wings, which were mounted dried. Sterna VIII of female adult were dissected and treated with potash for 10-15 minutes before mounting them in Canada Balsam. Some pinned specimens were rehydrated following Alba Tercedor (1987). Pictures were taken with Camera Canon Power shot G11 coupled to a Zeiss stereomicroscope Stemi SV 11 and Microscope Zeiss Axiostar. In some cases a series of partially focused images were processed with the software CombineZP ([www.hadleyweb.pwp.blueyonder.co.uk](http://www.hadleyweb.pwp.blueyonder.co.uk)) to obtain final pictures of better quality. Study material is deposited in CUIC (Cornell University Insect Collection, Ithaca, New York, USA), IML (Instituto Miguel Lillo, Tucumán, Argentina), MACN (Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina), MUR (Museo de la Facultad de Ciencias de la Universidad de la República, Montevideo, Uruguay) and MZSP (Museu de Zoologia de Sao Paulo)

## Results and discussion

### *Campsurus vulturorum* **sp. nov.**

**Material.** Holotype male Imago from Uruguay, Maldonado, Ruta 60, Km 23, Arroyo El Rodeo, S 34° 40' 20" W 55° 14' 15", 75 m, 4/III/08, at dusk, D. Emmerich & S. Pérez cols.; allotype female imago, same data as holotype. Paratypes: nineteen male imagos and 9 female imagos, same data as holotype. Five male imagos and 5 female imagos, same data as holotype except: 7/XI/08, D. Emmerich col.; one male and 1 female imagos, Uruguay, Treinta y Tres, Quebrada de los Cuervos, Arroyo Los Helechos, S 32° 55' 27.3" W 54° 27' 34.4", 125 m, 8/XI/04, at dusk, D. Emmerich & E. Morelli cols. One male imago and 1 female imago from Uruguay, Rivera, Santa Ernestina, Ruta 29, Arroyo sin nombre, near Mina Corrales, S 31° 32' 23.8" W 55° 33' 42", 146 m, 10/XI/2008, at dusk, D. Emmerich col. Two male subimagos Argentina, Misiones, Dpto Alem, 5 km W Cerro Azul, RN 14, Arroyo Mártires, 17/XI/1998, E. Domínguez, C. Molineri, C. Nieto & M. Orce cols. Seven mature nymphs, Uruguay, Canelones, Carrasco, "lagunas areneras Minetti", 17/VI/51.

**Depositories.** Holotype and allotype, six male imagos, six female imagos, two male subimagos and three nymphs housed in IML (Instituto Miguel Lillo, Tucumán, Argentina); remaining material in MUR (Museo de la Facultad de Ciencias de la Universidad de la República, Uruguay).

Male imago. Length (mm): body, 16.0–21.5; fore wing, 15.9–20.5; hind wing, 7.0–9.5; cerci, 43.0–50.0; fore leg, 8.0–9.0. General coloration whitish with well-defined black markings. Head (Fig. 1) whitish, completely shaded black dorsally; shading slightly more diffuse on occipute, except medial pale mark near hind margin. Antennae whitish, shaded slightly with purplish. Thorax. Pronotum whitish, except pronotal hump translucent; large medial area shaded with black except on posterior ¼; medial line on distal ½, hind margin and posterior half of lateral margin shaded black (lateral marks wider); prosternum translucent. Meso- and metanotum cream, shaded with black on carinae; transverse dash anterior to wing insertion and on a posterior V-shaped mark shaded diffusely with gray on mesoscutellum and around parapsidal sutures; rest of meso- and metathorax pale cream without marks (Fig. 1); inner margins of furcasternal plates diverging on posterior ½. Legs: fore legs whitish, widely shaded with grayish purple (darker on tibiae), except on a pale dorsal mark on proximal third of femur; apices of tarsites paler

(Fig. 2); middle and hind legs whitish translucent. Wings. Membrane of fore wing (Fig. 9) hyaline; C, Sc and R1 purplish, turning hyaline on distal half; remaining longitudinal and cross veins translucent hyaline; hind wing (Fig. 10) veins translucent hyaline. Abdomen translucent whitish shaded with brownish gray on terga except medial line; terga II–VII with pale lateral dashes, terga VIII–X shaded widely except on a pair of submedian pale spots (Figs 3–4); abdominal sterna pale without shading, except a pair of small black dashes on sternum X. Genitalia (Figs 11–16): sternum IX whitish, slightly projected medially (arrow in Fig. 12), pedestals whitish except posterolateral projection yellowish (Figs 12, 16), forceps whitish, penes whitish except membranous ventral lobe hyaline and dorsal sclerotized portion (ventrally curved) yellowish (Figs 13–15). Caudal filaments translucent whitish.

Female imago. Length (mm): body, 19.0–25.0; fore wing, 21.0–28.0; hind wing, 8.2–12.0; cerci, 6.7–7.2. General coloration similar to male (Figs 5–8). Legs whitish shaded with purplish in fore femur and grayish on middle coxa (Fig. 6). Mesopleura with small blackish mark ventrally to wing insertion. Wings membrane translucent slightly smoky yellow, costal area shaded with purplish almost entirely. Abdomen shaded darker and more widely with gray than in male; sternum X shaded black on anterolateral corners (Figs 7–8). Sternum VIII on anterior margin with a pair of posteriorly divergent sockets (Fig. 17).

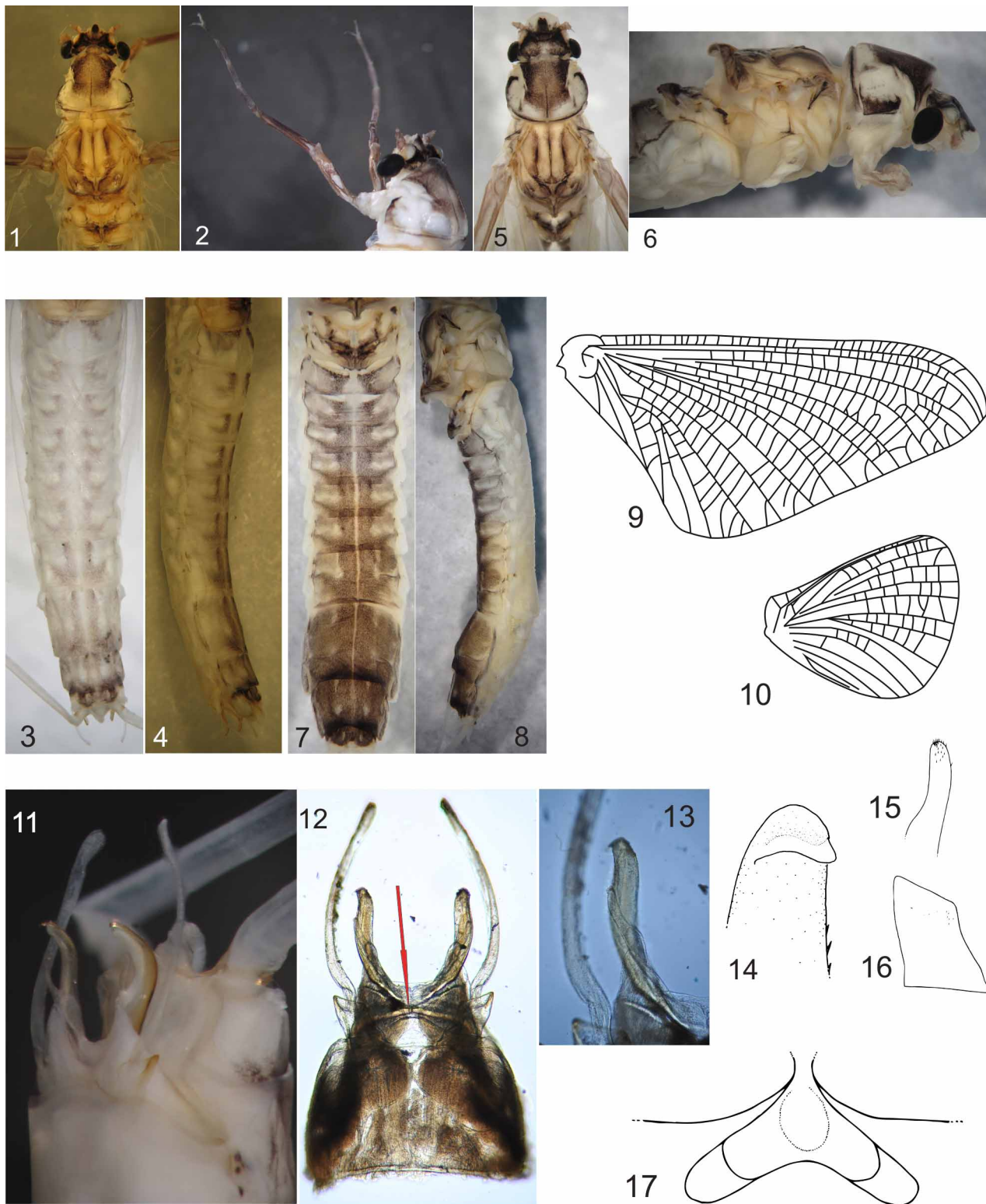
Eggs. Maximum length, 330–355  $\mu\text{m}$ ; maximum width, 255–290  $\mu\text{m}$ . Yellowish white, bowl shaped, oval, with a relatively large polar cap situated at the apex of the main axis (Fig. 56 B).

Nymph. Length (mm). Male: body, 17.0; cerci, 17.0; caudal filament, 8.0. Female: body, 24.5–30.0; cerci, 9.0; caudal filament, 7.5–8.0. General coloration yellowish with brownish marks (Fig. 18). Head shaded with purplish brown between lateral ocelli and netted pattern on occipute (Fig. 19). Mandibular tusks slightly curved dorsally at the apex, with numerous setae dorsally; inner margin with a prominent subbasal tubercle and 6 smaller more distal tubercles; outer margin of mandibles with 3–4 rows of stout spines and numerous setae (Figs 20–22). Maxillae with a short ventral gill (Fig. 23). Thorax. Pronotum whitish-yellow shaded with brownish as in male; prosternum translucent with a medial gray mark anterior to coxae; mesonotum extensively shaded with purplish brown, darker on posterior margin; wing buds translucent, shaded slightly with purplish on base, costal margin and main veins (Fig. 19). Legs. Fore legs yellowish white; fore tibia-tarsus strongly flattened with a large dorso-distal projection (Fig. 24), ventral surface with 4 rows of filtering setae: a basal transversal row, and three longitudinal rows (Fig. 25), dorsal surface almost completely covered with short spines and simple setae; femur with anterobasal U-shaped row of filtering setae, and contiguously with a posterior elongated tuft of simple setae; dorsal margin of femur with posterobasal and distal tufts of setae (Fig. 25). Middle and hind legs whitish yellow almost completely covered with yellowish setae. Abdomen whitish, shaded with purplish gray dorsally except on pale medial line, terga shaded mainly on submedian area and near posterior margin; terga III–VIII with pale semicircular sublateral marks, terga VIII–X shaded more extensively except on 1 or 2 pairs of sublateral pale marks (Fig. 18). Gills. Abdominal gill I bilobed and translucent, gills II–VII shaded with purplish darker on trachea and posterior margin except articulation between basal and distal portions of dorsal lamellae pale; fringes whitish except on distal half of posterior margin light purplish at base. Caudal filament whitish.

**Etymology.** From the Latin word *vultur*, plural genitive: *vulturorum* (= of the vultures). From the name of one of the localities “Quebrada de los Cuervos” where the species was collected.

**Diagnosis and discussion.** *Campsurus vulturorum* can be distinguished from all other species of the genus by the following combination of characters, in the adults: 1) posterior margin of male abdominal sternum IX convex, rounded (Figs 11–12); 2) pedestals subrectangular, with a short projection on outer-posterior margin (Figs 12, 16); 3) penes widely separated distally, each arm formed by two lobes, a larger sclerotized dorsal lobe, and a ventral smaller and membranous lobe (Figs 13–15); 4) male gonopore large, clearly visible before an apical rounded ventral projection on the dorsal penean lobe (Fig. 14); 5) very large size (male fore wings 15.9–20.5 mm, female fore wings 21.0–28.0 mm); 6) blackish pigments strongly marked on head and pronotum, mainly on medial line and posterolateral margins of pronotum (Figs 1, 5); 7) abdominal color pattern as in figures 3–4 and 7–8; 8) female sternum VIII with paired and posteriorly divergent sockets on anterior margin as in figure 17. In mature nymphs: 1) mandibular tusks robust with a large submedian tubercle and 6 subapical rounded denticles (Figs 20–22); 2) maxilla with a short flat and triangular membranous gill on cardo (Fig. 23). The association between adults and nymphs is tentative, based on shared color pattern, wing venation and genital rudiments.

**Distribution.** Uruguay and Northeastern Argentina (Misiones)



**FIGURES 1–17.** *Campisurus vulturorum* sp. nov. Male and female imagos. Male. 1, Head and thorax d.v; 2, fore legs dorso-lateral view; 3, Abdomen d.v; 4, Abdomen l.v; Female. 5, head and thorax d.v; 6, head, thorax and fore leg l.v; 7, abdomen d.v; 8, abdomen l.v; Male. 9, fore wing; 10, hind wing; 11, genitalia ventrolateral view; 12, genitalia v.v; 13, penes detail v.v; 14, penis dorsal lobe detail, v.v; 15, penis ventral lobe detail, v.v; 16, pedestal detail, v.v; 17, Female sockets, v.v.





**FIGURES 18–25.** *Campsurus vulturorum*, sp. nov. Nymph. 18, male and female nymphs (right mandibles were extracted), d.v; 19, head and thorax d.v; 20, right mandible, v.v; 21, right mandible tubercles, inner-ventral view; 22, right mandible, d.v; 23, right maxilla (detail of ventral gill), inner-ventral view; 24, right fore leg, d.v; 25, right fore leg, v.v.

### *Campsurus evanidus* Needham & Murphy

*Campsurus evanidus* Needham & Murphy, 1924: 18; Traver, 1947: 379; Domínguez *et al.* 2006: 570.

*Campsurus juradinus* Navás, 1930: 129; Traver, 1947: 371; Domínguez *et al.* 2006: 572. NEW SYNONYM.

**Type material.** *Campsurus juradinus* Navás, male holotype (MACN, originally pinned, now rehydrated and in alcohol) from Argentina, Entre Ríos, Gualeguaychú (probably río Uruguay), S 33° 01' 10" W 58° 30' 23" (approximate), 19/IV/1924, Col. Prof. M.D. Jurado.

*Campsurus evanidus* Needham & Murphy type slides: holotype male imago, genitalia and wings (CUIC n° 619.1), allotype female adult wings (CUIC n° 619.2), paratype male genitalia (CUIC n° 619.4), paratype male genitalia (CUIC n° 619.3) from Brazil, Minas Gerais, Rio Sao Francisco, Pirapora, S 17° 19' 58" W 44° 53' 53" (approximate), 11-13/XI/1919.

**Additional material.** One male and 2 female imagos (MUR, determined by Traver) from Uruguay, Artigas, 26/I/1952. Two male and 1 female imagos and 2 male subimagos, from Uruguay, Durazno, Sarandí del Yí, Río Yí, S 33° 20' 41" W 55° 37' 07", 132 m, 22/II/2008, D. Emmerich & C. Molineri, cols. Fifteen male and 3 female imagos from Bolivia, Río Blanco near Once Por Ciento, road between Santa Cruz and Trinidad, S 15° 21' 39.7" W 63° 17' 28.8", 250 m, 14/VI/2000, E. Domínguez col.

Male imago. Length (mm): body, 9.8–14.5; fore wing, 10.0–12.5; hind wing, 4.5–6.3; cerci, 27.0–34.0; fore leg, 5.0–6.5. General coloration whitish with well-defined black markings. Head whitish, completely shaded with black dorsally (Fig. 26). Antennae whitish translucent shaded light brownish. Thorax (Fig. 26). Pronotum whitish, except pronotal hump translucent; large medial area shaded with black; medial line and hind margin shaded black; posterior half of lateral margin shaded with gray; prosternum yellowish white with a medial gray line. Mesonotum cream shaded with black on carinae; transverse dash anterior to wing insertion, and on an anterior and posterior V-shaped mark (Fig. 26), shaded diffusely with gray on mesonotum; metanotum cream, shaded dorsally with brownish gray; remainder of meso- and metathorax pale cream without marks; mesofurcasternum heavily shaded black or gray; inner margins of furcasternal plates diverging on posterior one-half. Legs: fore legs whitish widely shaded with grayish on tibia and tarsi; fore coxa with a subapical gray spot and femur only with a fine longitudinal gray line; middle and hind legs whitish translucent. Wings. Membrane hyaline; fore wings (Fig. 31) with veins C, Sc and R<sub>1</sub> purplish turning hyaline on distal half; remaining longitudinal and cross veins translucent hyaline; hind wing (Fig. 32) veins translucent hyaline. Abdomen translucent whitish shaded with gray on median zones of all terga: a slightly paler median line is present on all terga except on VIII, median gray marks of terga as in figures 27–28; abdominal sterna pale without shading, except a pair of small gray dashes on sternum X. Genitalia: sternum IX whitish, acutely projected medially (Figs 33–35), pedestals and forceps whitish, penes whitish except dorsal sclerotized margin orangeish (Figs 35–36). Caudal filament translucent whitish.

Female imago. Length (mm): body, 11.0–16.8; fore wing, 12.0–18.0; hind wing, 5.7–8.0; cerci, 5.0–5.5. General coloration similar to male (Figs 29–30). Legs whitish shaded with gray on coxae I–II. Wing membrane translucent whitish, costal area shaded with purplish white until 3/4 from base. Abdomen with somewhat more extended gray areas on terga. (Fig. 30) Sternum VIII with a pair of partially fused, elongated and diverging sockets near anterior margin (Figs 37–38).

Eggs. Maximum length, 315–325 µm; maximum width, 265–270 µm yellowish white, bowl shaped, oval, with an extremely reduced polar cap (sometimes indistinguishable or absent) situated at the apex of the main axis (Fig. 56 C).

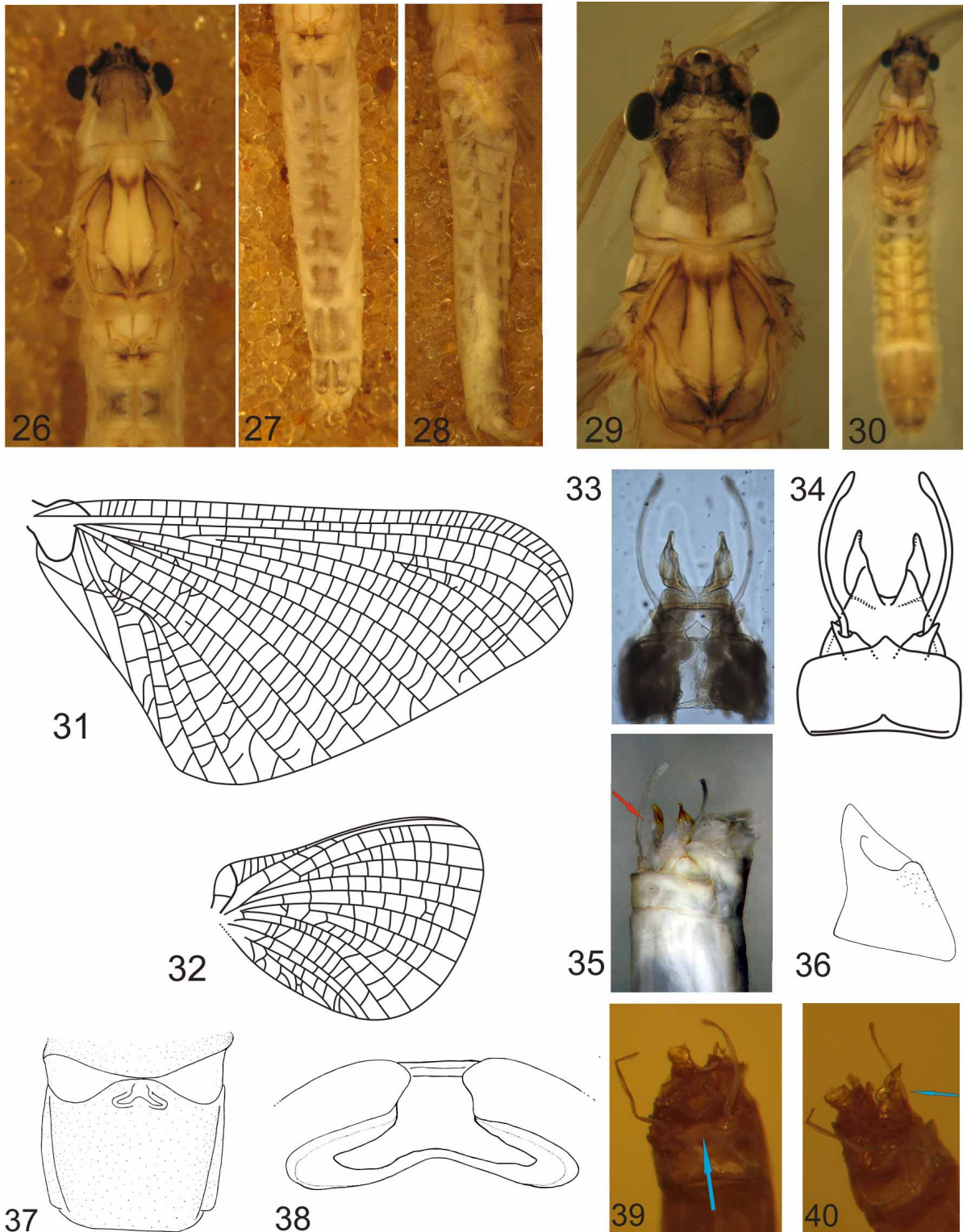
**Diagnosis and discussion.** *Campsurus evanidus* can be distinguished from all other species of the genus by the following combination of characters: 1) posterior margin of male abdominal sternum IX convex, acute (Figs 33–35); 2) pedestals subtriangular, outer-posterior margin acutely projected (Fig. 36); 3) penes separated and slightly diverging distally, each arm formed by a large and sclerotized lobe, and sometimes a small ventral membranous lobe is distinguishable (Fig. 35); 4) medium to large size (length of male fore wings 10.0–12.5 mm, female fore wings 12.0–18.0 mm); 5) blackish pigments on head and pronotum distinct, mainly on posterior half of medial line, posterolateral margins of pronotum not strongly shaded (Figs 26, 29); 7) abdominal color pattern as in figures 27–28 (male) and 30 (female); 8) female sternum VIII with paired sockets on anterior margin, sockets elongated and posteriorly divergent (Fig. 38).

*Campsurus juradinus* was described by Navás (1930) from a pinned male imago. Recently the type material, thought lost, was found among some vouchers in MACN. The study of the genitalia prior and after rehydration proved it to be very similar to *C. evanidus*, this and the general aspect and wing venation strongly suggest that *C. juradinus* is a junior subjective synonym of *C. evanidus*. Two pictures of the dry genitalia are provided for comparison (Figs 39–40).

**Distribution.** Argentina (Corrientes) new country record, Bolivia (Santa Cruz) new country record, Uruguay (Durazno and Artigas) new country record. Brazil (Minas Gerais) original description.

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**FIGURES 26–40.** *Campsurus evanidus*. Imagos. Male. 26, Head and thorax, d.v; 27, abdomen, d.v; 28, abdomen, l.v; Female. 29, Head and thorax, d.v; 30, Abodmen, d.v; Male. 31, Fore wing; 32, Hind wing; 33–34, Genitalia, v.v; 35, ventrolateral view; 36, pedestal detail, v.v; 37, Female sternum VIII v.v; 38, Female sockets detail, v.v; 39, Genitalia of Holotype of *C. juradinus*, v.v; 40, same l.v.



***Campsurus jorgenseni* Esben-Petersen**

*Campsurus jorgenseni* Esben-Petersen, 1912: 333; Ulmer, 1920: 116; Lestage, 1923: 122; Needham & Murphy, 1924:16; Ulmer, 1942: 114; Traver, 1950: 593; Domínguez *et al.* 2006: 572.

*Campsurus scutellaris* Needham & Murphy, 1924: 19; Traver, 1947: 380; Domínguez *et al.* 2006: 578. NEW SYNONYM

**Type material.** *Campsurus scutellaris* holotype male (CUIC n° 621) from Argentina, Iguazu falls, 22/I/1919, J.C. Bradley col.

**Additional material.** Four male imagos, Brasil, Mato Grosso do Sul, Chapadão do Sul, Fazenda Pedra Branca, Ríó Sucuriú, S 19° 15' 23.9" W 52° 47' 22.9", 8/VI/2008, Karina Righi col. (2 males housed in MZSP and 2 males in IML) ; 13 male and 2 female imagos, Mato Grosso do Sul, Ivinheima, 5/V/2005, S. M. Melo col. (7 males and 1 female housed in MZSP; 6 males and 1 female in IML)

Male imago. Body, 7.7–9.8 mm; fore wing, 7.3–9.0 mm; hind wing, 3.1–4.3 mm; foreleg, 3.3–4.2 mm; cerci, 20.0–22.5 mm. General coloration whitish to brownish. Head (Fig. 41) shaded widely with black, paler on occipute; antennae grayish light-brown. Thorax (Fig. 41). Pronotum completely shaded with black, becoming paler posteriorly; pronotal hump translucent, presternum pale. Meso- and metanotum yellowish brown shaded with purplish black on carinae, more diffusely on sclerites; meso- and metasterna paler, not shaded. Legs yellowish. Fore coxae with a pair of black marks, fore femur, tibia and first tarsite shaded with brownish gray; legs II and III yellowish shaded slightly with gray. Wings. Membrane hyaline; Fore wings (Fig. 44) with veins C, Sc and R<sub>1</sub> tinged with purplish brown on basal half, other longitudinal veins light brownish basally turning translucent apically, remaining veins translucent; hind wing (Fig. 45) shaded with purplish brown at base. Abdomen yellowish light brown widely shaded with gray and black dorsally as in figures 42–43; sterna with shading more restricted to lateral areas, with a pair of submedian black spots on sternum I. Genitalia (Figs 49–52) brownish white except penaeal arms yellowish translucent. Caudal filaments whitish translucent, except light brownish at basal annuli.

Female imago. Body, 7.2 (empty)–9.7 (with eggs) mm; fore wing, 9.0 mm; hind wing, 3.0–3.3 mm; cerci, 2.5–2.8 mm. Only females from the paler population were studied. General color whitish, shaded gray as in male described above (Figs 46–47). Abdomen shaded more strongly on rear segments (Fig. 47). Sternum VIII with a median pair of subcircular sockets near anterior margins (Fig. 48).

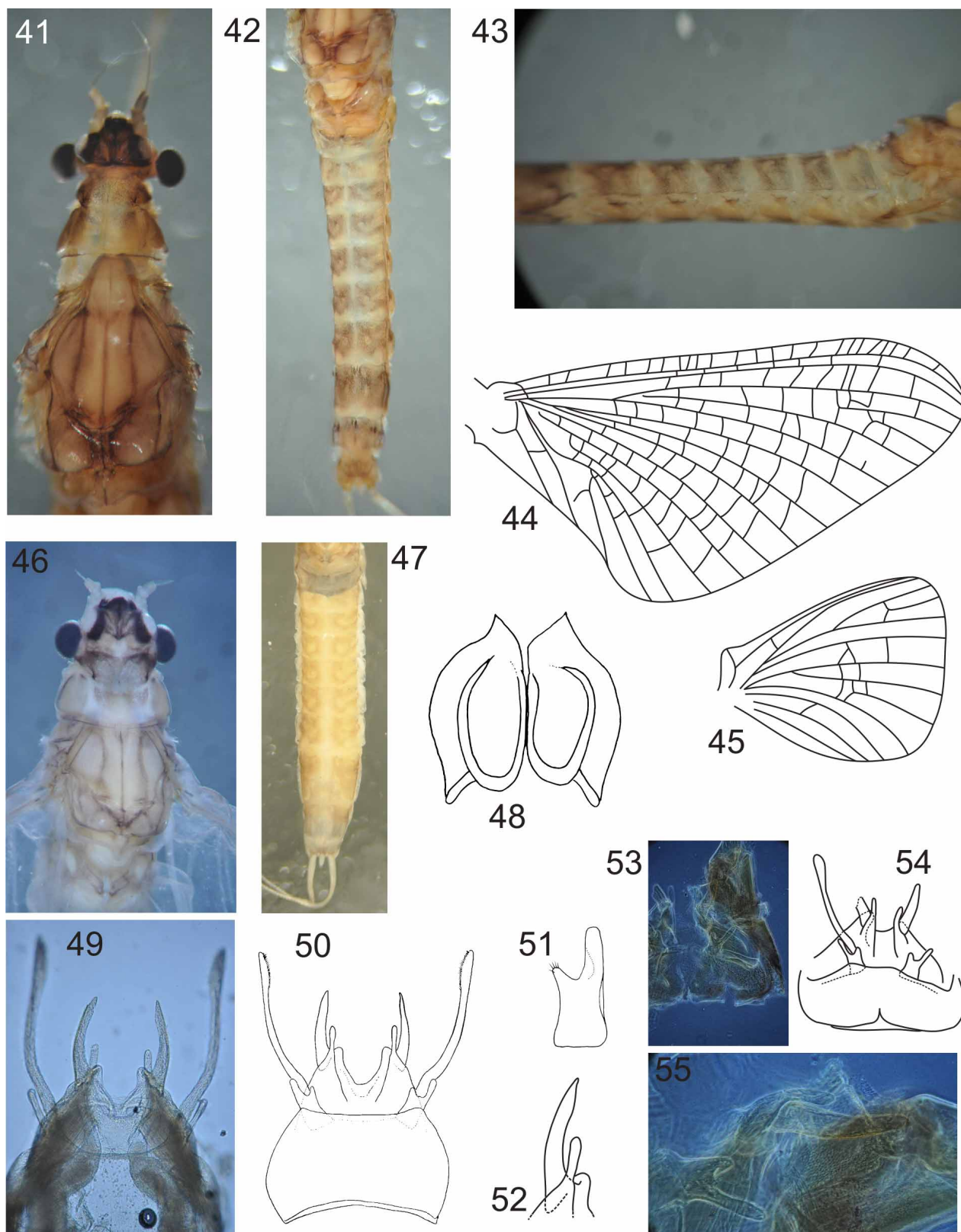
Eggs. Maximum length, 300–325µm; maximum width, 235–245 µm yellowish white, bowl shaped, oval, with a relatively large polar cap situated at the apex of the convex surface (minor axis) (Fig 56 A).

**Diagnosis and discussion.** *Campsurus jorgenseni* can be distinguished from all other species of the genus by the following combination of characters: 1) posterior margin of male abdominal sternum IX straight to slightly convex (Fig. 49); 2) pedestals subrectangular, outer-posterior margin strongly projected, inner margin less projected and with small strong setae (Fig. 51) ; 3) penes widely separated distally, each arm formed by a large sclerotized lobe, and a shorter ventral membranous lobe (Figs 49–50, 52); 4) small size (fore wings 7.3–9.0 mm); 5) blackish pigments on head and pronotum uniformly distributed, darker on anterior ring of pronotum (Figs 41, 46); 7) abdominal color pattern as in figures 42–43; 8) female sternum VIII with paired contiguous oval sockets on anterior margin (Fig. 48).

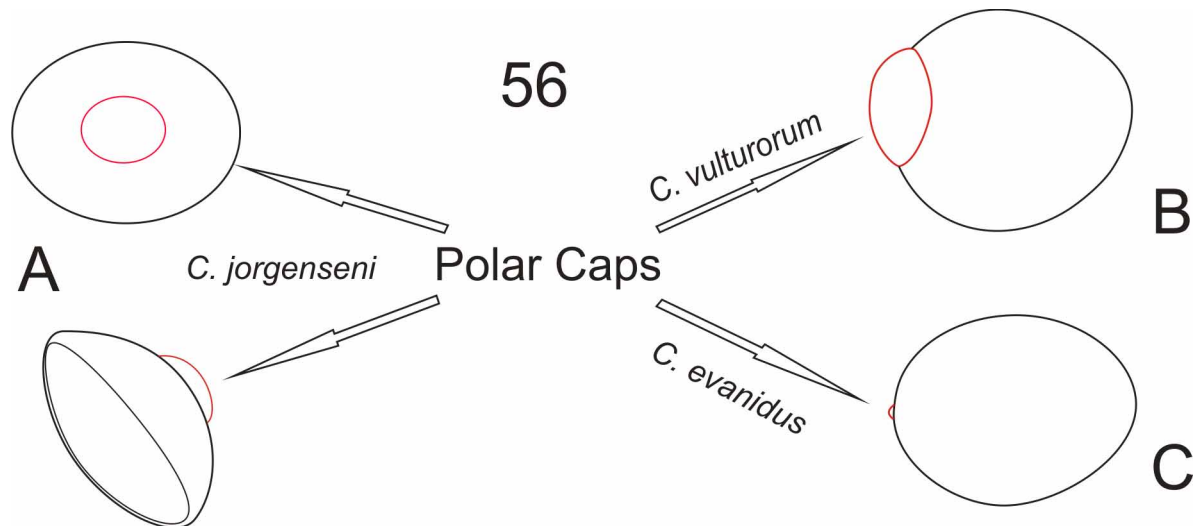
*Campsurus scutellaris* was described by Needham & Murphy (1924) from male imagos from Iguazu Falls, a locality near to, and in the same river, as that of *C. jorgenseni* Esben-Petersen (1912). Needham & Murphy separated both species because *C. scutellaris* presented one pair of pale roundish spots in the brown on the dorsum of the middle abdominal segments, while *C. jorgenseni* showed two pairs. Traver (1947) stated that the male genitalia of both species were identical, but did not formally synonymize them. We studied type material of *C. scutellaris* (CUIC) and compared it to original description and figures of *C. jorgenseni*. Neither species can be distinguished based upon morphological characters. We here propose *C. scutellaris* as a junior subjective synonym of *C. jorgenseni*. Three pictures of the genitalia of the type material mentioned above are provided for comparison (Figs 53–55).

**Distribution.** Originally described from NE Argentina (Misiones). It is recorded for the first time from Brazil (Mato Grosso do Sul).





**FIGURES 41–55.** *Campsurus jorgenseni*. Imagos. Male. 41, head and thorax, d.v; 42, abdomen, d.v; 43, abdomen, l.v; 44, Fore wing; 45, Hind wing; Female. 46, Head and thorax, d.v; 47, abdomen, d.v; 48, Sternum VIII sockets, v.v; Male. 49–50, Genitalia, v.v; 51, pedestal detail, v.v; 52, penes detail, v.v; 53–54, Holotype genitalia of *C. scutellaris*, v.v; 55, pedestal and penis details, ventrolateral view.



**FIGURES 56 (A–C).** Eggs and Polar Caps (Schematic drawing). A, *Campsurus jorgenseni*; B, *Campsurus vulturorum*; C, *Campsurus evanidus*.

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