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A NEW SPECIES OF *TAGALIS* STÅL, 1860 (HEMIPTERA, REDUVIIDAE, SAICINAE) FROM ARGENTINA

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Abstract.— A new species, ***Tagalis drakkar* n. sp.**, is described from Misiones, Argentina. It is easily separated from the other species of the genus by the particular shape of the median process of the pygophore and other male genitalic structures, and the overall pale coloration. We also describe the male aedeagus of *Tagalis femorata* Melo (2008) and discuss the affinities of the two species studied in the context of species groups proposed by Castro-Huertas and Forero (2014).

Key Words: ***Tagalis drakkar* new species**, *Tagalis femorata*, Heteroptera, Misiones Province

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The genus *Tagalis* Stål, 1860 is comprised of nine species ranging from the continental United States and Caribbean islands to Argentina (Castro-Huertas and Forero 2014), but most of the species occur in South America. Little is known about the biology of the species; some of them have been found on orchids (*T. seminigra* Champion: McAtee and Malloch 1923), in spider webs and in leaf litter (*T. inornata cubensis* McAtee and Malloch: Fracker and Bruner 1924, Blinn 2008), and in bird nests (*T. evavilmae* Gil-Santana, Pinto Gouveia and Zeraik: Gil-Santana et al. 2010), but most of them have been collected at light.

Most of the species range from dark brown to pale brown with darker or yellowish markings. Castro-Huertas and Forero (2014) separated *Tagalis* into four species groups based on the structure of the male genitalia, particularly the shape of the median process of the pygophore.

In this contribution we describe a new species of *Tagalis* from Argentina, and we also redescribe and illustrate the male genitalia of *Tagalis femorata* Melo 2008.

Material and Methods

The specimens examined for this study are deposited in the collection of the

Entomology Division, Museo de La Plata, La Plata, Argentina (MLP).

All measurements are given in millimeters. Genitalic structures were dissected under a stereomicroscope, cleared in a 10% KOH solution, washed in distilled water, and preserved in vials with glycerin. Photographs were taken using a digital camera (Micrometrics 391CU, 3.2 m, Accu-Scope, Commack, NY, USA) mounted to a Nikon SMZ1000 microscope. Multiple focal planes were merged using Micrometrics SE Premium 4 software.

The terminology used is that of Schuh and Slater (1995) and Weirauch (2008a) for external structures; and that of Davis (1966) and Forero and Weirauch (2012) for male genitalic structures; and for labial segments, we follow Weirauch (2008b), in which the first visible labial segment is actually the second labial segment.

Results

Tagalis drakkar Varela and Melo, new species

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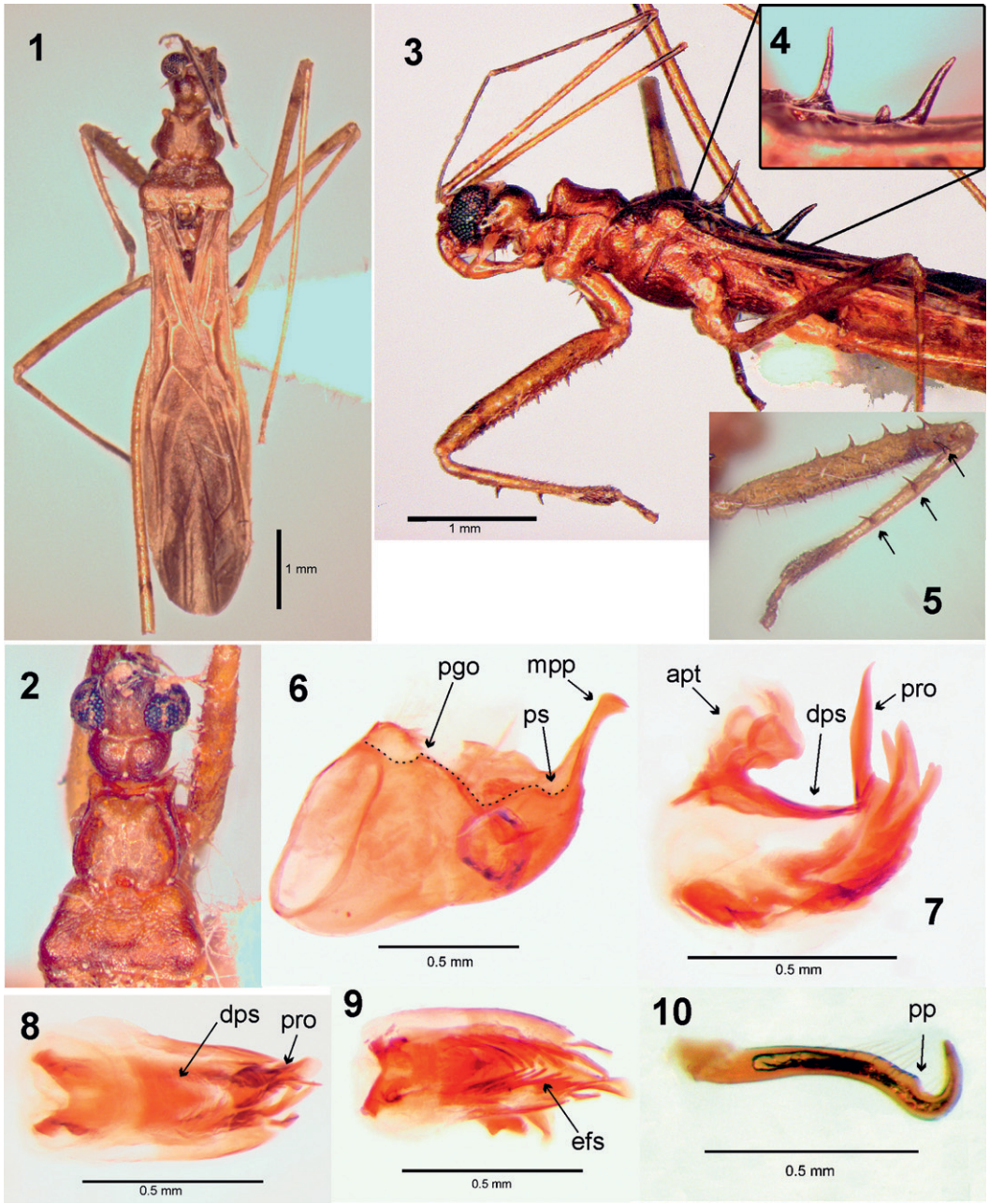
(Figs. 1–10)

Diagnosis.—This species can be easily recognized by the overall pale brown coloration (Figs. 1–3), and the long posteriorly projecting median process of the pygophore with a sharp spatulate apex (Fig. 6).

Type material.—Holotype ♂: ARGENTINA: Misiones: Eldorado, XI-[20]03, CDC [Trap] (MLP). Paratype ♂: ARGENTINA: Misiones: Caraguatá[y], I-[19]98 (MLP).

Description.—*Male*: Total length 6.27. General color pale brown (Figs. 1–3), except apex of scapus, pedicellus, flagellomeres; a subapical faint band on femora and apex of tibiae; spines of meso-metascutum and first abdominal tergite darker. *Head*: Length 0.74, width 0.70. Eyes width 0.26, interocular space 0.19. Posterior region globose with a deep longitudinal furrow and short recumbent setae (Fig. 2). Maxillary plate, gula, and posterior region near eyes with one pair of long setiferous tubercles (Fig. 3). *Labium:* length of visible segment I: 0.36, visible segment II: 0.38, visible segment III: 0.48. Visible segments I and II with a pair of setiferous tubercles and short semierect setae. *Antenna:* scapus: 2.11, pedicellus: 1.38, basiflagellomere [only on left antenna]: 1.12, distiflagellomere: absent. Scapus with long semierect setae, rest of antenna with short recumbent setae. *Thorax*: Anterior pronotal lobe length 0.61, posterior pronotal lobe length 0.54, width 1.06. Lateral process of collar protruded, rounded (Figs. 1–2). Anterior lobe clay pot shaped (Figs. 1–2), with two pairs of protuberances, one pair near anterior margin and one smaller pair near posterior margin; mid- and posterior regions depressed, surface glabrous (Fig. 3). Posterior lobe subtrapezoidal, rugose, slightly depressed medially lateral margins rounded, anterior and posterior margins slightly concave, more distinct on posterior margin; with scattered short recumbent setae, humeral angles rounded (Fig. 2). Scutellum medially depressed with scattered setae, posterior process long and erect forming a spine, post-scutellum with a short erect tubercle, glabrous; metanotum forming a tubercle with post-scutellum, with a long erect spine posteriorly (Fig. 4). Propleuron with scattered recumbent setae; meso- and metapleura with longer and more abundant recumbent setae. Prosternal process with a pair of spiniferous tubercles on anterior margin. *Legs:* procoxa elongate with a long setiferous tubercle anteriorly and three smaller tubercles medially; protrochanters with four



Figs. 1–10. ***Tagalis drakkar*** **new species**. 1, Dorsal habitus. 2, Detail of head and pronotum. 3, Lateral aspect. 4, Detail of thoracic spines. 5, Detail of anterior leg showing femoral and tibial spines. 6, Pygophore, antero-lateral view. 7, Aedeagus, lateral view. 8, Aedeagus, dorsal view. 9, Aedeagus, ventral view. 10, Paramere, lateral view. Abbreviations: apt, articulatory apparatus; dps, dorsal phallothecal sclerite; efs, endosomal finger-like sclerites; mpp, median process of pygophore; pgo, process of genital opening; pro, prolongation of the dps; pp, paramere process.

setiferous tubercles on inner side. Profemur with two rows of spiniferous tubercles, one medially formed by five spiniferous tubercles placed on apical two thirds, the other consisting of four setiferous tubercles on ventral surface intermixed with small spines (Fig. 5), with recumbent setae dorsally and more abundant erect setae on ventral surface. Protibia slightly curved, with three long setiferous tubercles medially (Fig. 5), and abundant short erect setae on ventral surface, short recumbent setae on dorsal surface. Mid- and hind legs long and slender with short recumbent setae. All tarsi three-segmented. Hemelytron longer than abdomen, length 4.42; veins pale (Fig. 1). *Abdomen*: length 2.91. Elongate and slender, sterna with abundant short recumbent setae, with a ventral carina from visible sternite II to basal half of IV. *Male genitalia* (Figs. 6–10): pygophore elongate ovoid, median process (mpp) long with a narrow base, projecting posteriorly and extending beyond apex of parameres, the apex spatulate (Fig. 6); process of the genital opening (pgo) shortly triangular and apically acute (Fig. 6); genital opening and anterior opening of pygophore separated by a transverse short and narrow bridge; paramere socket (ps) with long setae. Arms of articulatory apparatus (apt) short and stout (Fig. 7), basal plate bridge absent. Phallosoma with dorsal phallothecal sclerite (dps) elipsoidal, with large prolongation (pro) a little longer than length of sclerite (Figs. 7–8). Endosoma with about ten finger-like sclerites (efs) (Fig. 9). Paramere slender, hooked apically, apex acute, with long setae on dorsal surface on apical half proximal to curvature, with a small rounded protrusion (pp) dorsally at base of hook (Fig. 10).

Paratype measurements.—Total length 6.37. Head length 0.74, width 0.70. Eyes width 0.22, interocular space 0.26. Labium not measured. *Antenna:* scapus: 2.08 [rest of antennae absent]. Anterior pronotal lobe length 0.54, posterior pronotal lobe length 0.48, width 0.99. Hemelytron length 4.23. Abdominal length 2.77.

Female: Unknown.

Etymology.—The name "*drakkar*", Icelandic for dragon, refers to the shape of the figurehead of the Vikings boats also called Drakkar, for its similarity to the shape of the median process of the pygophore of this new species (Fig. 6).

Key to species of *Tagalis* (modified from Castro-Huertas and Forero, 2014)

1. Profemur incrassate, protibia with four spines ..... *T. femorata*
– Profemur slender, protibia with three spines 2
2 (1). Head and thorax dark brown 3
– Head and thorax mostly pale brown, sometimes with dark areas 5
3 (2). Profemur pale brown with subapical dark band; coxal cavities white ..... *T. dichroa* Castro-Huertas and Forero
– Profemur and coxal cavities dark brown 4
4 (3). Integument of hind lobe of pronotum smooth; sternites mostly orange; median process of pygophore in males long and acute; parameres with apical third extending beyond the pygophore ..... *T. seminigra* Champion
– Integument of hind lobe of pronotum rugose; sternites brownish; median process of pygophore in males short, spiniform; body of parameres within pygophore rim ..... *T. evavilmae* Gil-Santana, Pinto Gouveia and Zeraik
5 (2). Median process of pygophore long and projecting backwards with a sharply

spatulate apex (Fig. 6) ....***T. drakkar* new species**

– Median process of pygophore of different shape, apex never as above 6

6 (5). Forewing almost entirely grayish, without alternating markings 7

– Forewing with alternating darkened and brighter areas or darkened spots 8

7 (6). Upper region of post-ocular portion of head and humeral angles of hind lobe of pronotum usually darkened; pterostigma fuscous or discretely whitish at apex; male: length of longer ciliated hairs of first antennal segment approximately 2.5 times width of segment; median process of pygophore conspicuous, with large subtriangular base; parameres with little apical curvature, with apical middle beside pygophore and without an appendix at apical teeth ..... *T. inornata* Stål

– Head and pronotum testaceous, without darkened markings; pterostigma almost completely reddish; male: length of longer ciliated hairs of first antennal segment approximately 5 times width of segment; pygophore with conspicuous rounded lateral apophysis; median process of pygophore thin and digitiform; body of parameres within pygophore rim; parameres thinner and strongly curved apically, with short and curved appendix in distal portion of apical teeth.....*T. grossii* Gil-Santana

8 (6). Forewing with a reddish area on pterostigma; mesoscutellar spine completely white ..... .*T. albispina* Castro-Huertas and Forero

– Forewing without reddish areas; mesoscutellar spine either completely brown or just apically white 9

9 (8). Anteroventral and posteroventral spines of head subequal in length; hind lobe of pronotum blackish; middle and hind femora with pair of apical short spines; forewings brownish, with basal portion and two yellowish transverse bands in basal half, and pair of large whitish spots in distal half; male: length of longer ciliated hairs of first antennal segment approximately 5 times width of segment; paramere strongly curved apically; conspicuous triangular appendix on apical teeth; some endosoma projections with small acute spines ....*T. baenai* Gil-Santana

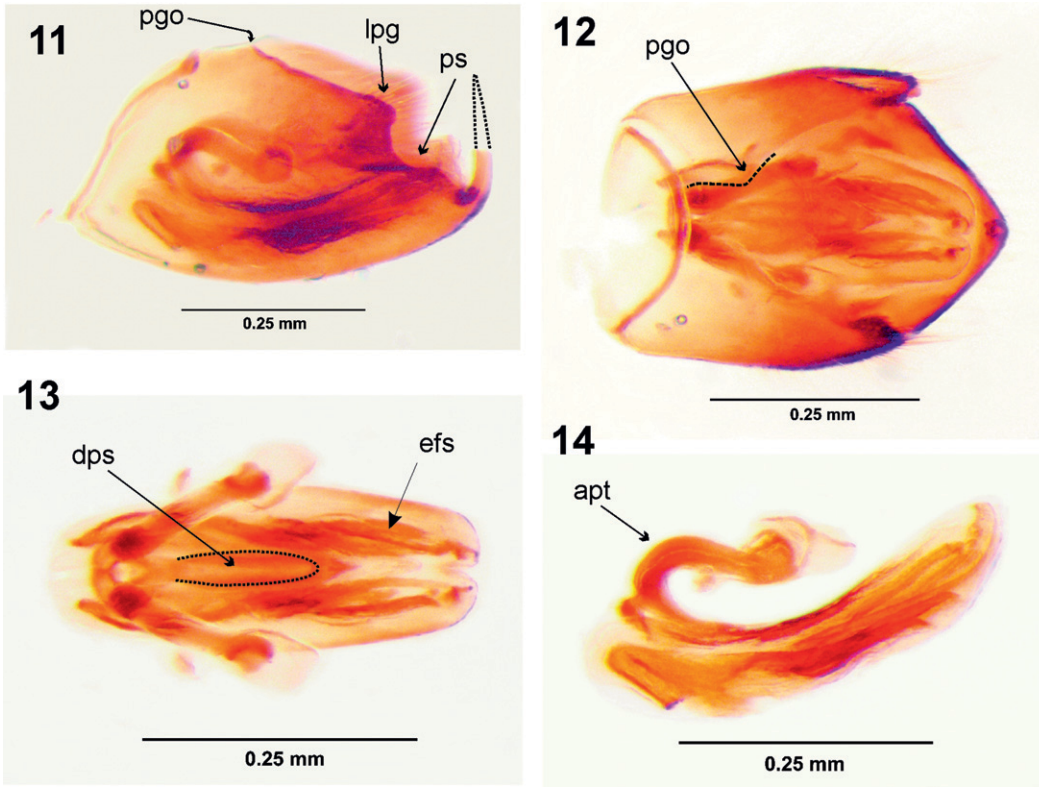
– Anteroventral head spine shorter than posteroventral; hind lobe of pronotum yellowish; apices of middle and hind femora without spines; forewings yellowish with incomplete darkened markings, in which darkened veins stand out; male: length of longer ciliated hairs of first antennal segment approximately 6 times width of segment; paramere thinner, with little apical curvature; triangular appendix on apical teeth small; endosoma projections smooth .....*T. marquesi* Gil-Santana

Tagalis femorata Melo 2008 (Figs. 11–14)

Male genitalia.—Pygophore subpentagonal (Fig. 12), median process long and erect with a narrow base, the apex acute [broken in the holotype specimen] (Fig. 11); process of the genital opening obtusely rounded (Fig. 12); genital opening and anterior opening separated by a transverse narrow bridge; genital opening with a rounded lateral process (lpg) located dorsal to paramere socket (ps) (Fig. 11); paramere socket with abundant long setae. Endosoma with four finger-like sclerites (efs) (Fig. 13). Arms of articulatory apparatus (apt) long and strongly curved, basal plate bridge absent (Fig. 13–14). Phallosoma with dorsal phallothecal sclerite (dps) elongate, prolongation not developed (Fig. 13).

Discussion

The species of *Tagalis* were separated into four groups by the structure of



Figs. 11–14. *Tagalis femorata* Melo 2008. 11, Pygophore, lateral view. 12, Pygophore, dorsal view. 13, Aedeagus, dorsal view. 14, Aedeagus, lateral view. Abbreviations: apt, articulatory apparatus; dps, dorsal phallothecal sclerite; efs, endosomal finger-like sclerites; lpg, lateral process of genital opening; pgo, process of genital opening; ps, paramere socket.

the male genitalia (Castro-Huertas and Forero 2014). One group is represented by *T. evalvilmae* characterized by a short, vertical with a narrow base median process of the pygophore; a second group includes *T. femorata* characterized by a long, vertical with a narrow base median process; a third group is represented by *T. baenai*, *T. grossi* and *T. marquesi* and is characterized by a short reclined with a narrow base median process, and the last group includes *T. dichroa*, *T. inornata* and *T. seminigra* and is characterized by a long, reclined with a wide base median process of the pygophore.

***Tagalis drakkar*, n. sp.,** can be easily distinguished from other species in the genus by the distinct shape of the median process of the pygophore. The median process is reclined as it is in most of the species, but its base is narrow similar to *T. evavilmae* (Gil-Santana et al. 2010), *T. baenai*, *T. grossi*, *T. marquesi* (Gil-Santana 2011) and *T. femorata*. The posterior prolongation of the dorsal phallothecal sclerite is elongate and narrowing apically, a feature shared with *T. dichroa* and *T. inornata inornata* (Castro-Huertas and Forero 2014, Gil-Santana 2011). And the articulatory apparatus is rather short, similar to *T. baenai* and *T. inornata inornata*, *T. marquesi* and *T. seminigra.* Although the parameres are rather uniform among *Tagalis* species, in ***T. drakkar* n. sp.**

they show a small dorsal protuberance at the base of the hook.

The male genitalia of *T. femorata* is quite different from those in other *Tagalis* species. The median process is erect and acute as in *T. evavilmae* although in this species it is shorter; and the dorsal phallothecal sclerite is elongate and its prolongation is not developed. This last condition seems to be unique within the genus.

One feature that seems to be quite different among the species is the shape of the processes of the genital opening. Gil-Santana et al. (2010) and Gil-Santana (2011) described a process in the genital opening that they called "lateral apophysis"; later Castro-Huertas and Forero (2014), when describing a new species from Colombia, interpreted this "lateral apophysis" as homologous to the "process of the genital opening" (Forero and Weirauch 2012). Analyzing the illustrations of *T. evavilmae* Gil-Santana et al. 2010, *T. inornata inornata* (Gil-Santana 2011), and *T. femorata* we can see that the genital opening show two distinct processes: one dorsally, the "genital opening process" of Castro-Huertas and Forero (2014); and a lateral process, the "lateral apophysis" of Gil-Santana et al. (2010) or the "dorso-medial prolongation of the paramere socket" of Forero and Weirauch (2012), or what we here called the "lateral process of pygophore" (lpg). At least in the three previously mentioned species these two processes are present together, and it would be interesting to examine the other species described in the genus since by the drawings cannot describe the shape of the dorsal part of pygophore.

After this we believe that the four species groups proposed by Castro-Huertas and Forero (2014) based on the structure of the male genitalia should be revised in the context of a phylogenetic analysis with a carefully establishment of primary homologies.

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