Conquistator, a new genus for Podisus mucronatus Uhler, 1897 (Heteroptera: Pentatomidae: Asopinae) with a re-description of type species

D.A. Gapon

Conquistator gen. nov., is described to hold the North American species Podisus mucronatus Uhler, 1897. This new genus differs from Podisus Herrich-Schaeffer, 1851, in having the digitiform process on the paramere corpus more characteristic of species in the American asopine genera Apoecilus Stål, 1870 and Supputius Distant, 1889. The new genus, however, also differs from these two genera by essential morphological characters. The type species, Podisus mucronatus Uhler, 1897, is re-described based on a morphological examination of the male and female terminalia.

Key words: Heteroptera, Pentatomidae, Asopinae, Conquistator mucronatus, Podisus, Apoecilus, Supputius, new genus, new combination

INTRODUCTION

Thomas (1992), in his monograph devoted to the Asopinae of the Western Hemisphere, placed the 33 species of Podisus Herrich-Schaeffer, 1851 into eight species groups. He included Podisus mucronatus Uhler, 1897 into a monotypic species group characterized by the acuminate lateral angles of the pronotum strongly curving anteriad which is a character unique in Podisus. While studying asopine genera of the New World, I discovered several characters shared by Podisus mucronatus and American genera Apoecilus Stål, 1870 and Supputius Distant, 1889, but absent in other asopine genera I examined. Most significant of these characters is a long digitiform process on the corpus of the paramere. These differences justify the exclusion of Podisus mucronatus from the genus Podisus, but this species cannot be included in either Apoecilus or Supputius since it differs considerably from both of these genera. It is here placed in a distinct genus of its own.

MATERIAL AND METHODS

This work is based on material from the collection of the Zoological Institute of the Russian Academy of Sciences (St. Petersburg) and the collection of D.A. Rider (North Dakota State University, Fargo, USA). Examined were 130 species from 53 genera of the world fauna of Asopinae, including all species of the genera Apoecilus and Supputius as well as about half of the species from the genus Podisus (P. aenescens (Stål, 1860), P. affinis Distant, 1880, P. brevispinus Phillips, 1982, P. congrex (Stål, 1862), P. crassimargo (Stål, 1860), P. distinctus (Stål, 1860), P. maculiventris (Say, 1831), P. nigrispinus (Dallas, 1851), P. pallipes (Dallas, 1851), P. placidus Uhler, 1870, P. sagitta (Fabricius, 1794), P. semialbus (Walker, 1868), P. serieventris Uhler, 1871, and P. trucidatus Thomas, 1992).

The aedeagi were studied in a completely inflated state with the use of the method of hydraulic inflating of aedeagus and subsequent drying in a blast of hot air (Gapon,

RESULTS

Family PENTATOMIDAE Leach, 1815
Subfamily ASOPINAE Amyot & Serville, 1843
Genus Conquistator gen. nov.

Type species: Podisus mucronatus Uhler, 1897.

Diagnosis. Conquistator differs from Podisus in two main ways: first, the basal part of the parameral corpus is wide and, second, the presence of a long digitiform process arising from the corpus (Figs 1, 3–6, l. pr). In Podisus, the basal part of the corpus of the paramere is narrow and the digitiform process is absent (Figs 7–9). A long digitiform process on the corpus of the paramere is also present in Apoecilus and Supputius, but absent in other examined genera of Asopinae. The digitiform process should not be confused with the inner branch of the hypophysis. The digitiform process is located more basally than the plane of the hypophysis and present along with the inner branch of the hypophysis. Conquistator, Apoecilus and Supputius form a distinct holophyletic group identified by the synapomorphy described above. The new genus differs from Apoecilus in having the following complex of characters: each lateral margin of pronotum with rim separated dorsally (vs. without rim); glandular patches on male abdominal venter absent (vs. present); dorsoapical margin of pygophore lower than its ventroapical margin (vs. higher); apex of paramere hypophysis directed lateral (Figs 1, 5, apx) (vs. directed towards dorsoapical margin of the pygophore); ventrolateral lobes of conjunctiva without sclerites on their apices (figs 13, 15, vl. l) (vs. with sclerites); triangulum located under contiguous gonocoxites 1 and not intervening between them (Fig. 16, tr, gx. f) (vs. intervening between gonocoxites 1). Conquistator is closely related to the genus Supputius and differs from it in having a shorter rostral segment II, not exceeding the combined length of segments II and III (vs. exceeding); a wider rim on each pronotal lateral margins; the posterior angles of abdominal segments short and obtuse (vs. pointed and rather long). Additionaly, the new genus differs from the genera Podisus, Apoecilus and Supputius in having the following characters: unimucronate humeral angles, strongly curving anteriad (vs. directed lateral, unimucronate or oblong in anterior part and widely rounded in posterior part in Supputius; directed lateral, unimucronate in Apoecilus; directed lateral or posteriad, unimucronate or bimucronate, in Podisus, curved anteriad, bimucronate in P. gundlachii (Guerin-Meneville, 1857) according to Thomas, 1992); the presence of a pair of distinct callosal patches on pronotum behind cicatrices and on the anterolateral corners of the scutellum (vs. absence in Podisus, Apoecilus and Supputius); a short poriferous strip on the posterior margin of each mesopleurite not extending to lateral margin (vs. extending to lateral margin in Podisus, Apoecilus and Supputius); lateroapical angles of the pygophore short, rounded (vs. long, angulate in Podisus, Apoecilus and Supputius).

Note. I propose the hypothesis that the digitiform process of the paramere corpus is a newly formed structure which developed basally from the hypophysis and not lying in the plane of the latter (Fig. 6). However another possible hypothesis is that the digitiform process may represent a derivative of the inner branch of the hypophysis. Thus, Podisus affinis Distant, 1880 has a long, thin, inner branch of the hypophysis which lies in the same plane (Figs 10–12). This inner branch could shift basally of the hypophysis and become “the digitiform process”. Then a structure which I consider above as the apex of the hypophysis of Conquistator and Supputius would be considered as the outer branch of the hypophysis appearing for the first time, whereas a structure mentioned above as the inner branch of Conquistator and Supputius is the true apex of the hypophysis.
The second hypothesis thus proposes that a unique character shared by the genera *Conquistator*, *Apoecilus* and *Supputius* is the basal location of the thin, long inner branch of the hypophysis, and a unique character of the genera *Conquistator* and *Supputius* is the appearance of the outer branch of the hypophysis.

**Etymology.** The name of the new genus descends from Latin *conquisitator* which comes from the verb *conquisitare*, a frequentative formation of *conquirere*. The gender is masculine.

**Composition.** The genus contains only the type species distributed in USA (Florida), Cuba and Puerto-Rico.

*Conquistator mucronatus* (Uhler, 1897), new combination

(Figs 1, 2, 13, 16, 17)

*Podisus mucronatus* Uhler, 1897: 386.

**Material examined.** Male, female; **USA, Florida, Lee Co.** Estero; 13 Febr. 2000; J.E. Eger leg.; D. Rider collection.

A brief description of eggs, imago and five nymph instars of *Conquistator mucronatus* with figures are given by Costello et al. (2002). More complete description of the species with paying of special attention to a structure of male and female terminalia which was not described earlier is given below.

**Re-description.** Body oval, dorsally flattened, ventrally slightly convex. Coloration yellowish with brown maculae on dorsal surface.

**Head.** Preocular part of head slightly narrowing anteriorly. Juga as long as clypeus, with rectangularly rounded outer angles and shallow lateral notches. Rostrum reaches posterior margins of hind coxae, its segment II longest, but shorter than segments II and III united; segment IV brownish. Dorsal surface of head densely covered with small dark points. The middle of vertex, frons and clypeus, narrow stripes on each side of vertex and frons, rather large patches near inner margin of each eye without punctuation. Margins of juga and spots before eyes blackish.

**Prothorax.** Anterior margin of pronotum slightly incurved, without edge. Lateral margins of pronotum straight, with wide calloused yellow rims, bearing five or six small pointed denticles directed laterad. Anterior angles of pronotum with same denticles as those on lateral margins. Lateral angles of pronotum long, narrowly triangular and strongly bent anteriad, unimucronate, dark brown. Posterior angles of pronotum triangularly rounded, without hamuli. Anterior portion of pronotal disc with distinctly smoothed tubercles on each side covered with points. Cicatrices relatively wide, brown. Pair of large, pale, roundish, calloused patches located behind cicatrices. Entire pronotal disk densely covered with rather large brown points; patches of cuticle between them slightly convex, yellow.

**Mesothorax.** Scutellum with small calloused patches on basal corners, in middle of basal margin and on apex. Apical part of scutellum narrower than corium at same level. Points of punctuation on scutellum similar to those on pronotum. Carina on mesosternum narrow, extended in anterior part, flattened in posterior part. Posterior margin of each mesopleurite with small patch of porous cuticle in proximal part.

**Metathorax.** Smooth part (ruga) of evaporatorium expanded distad, without dark spot on rounded distal end, not reaching middle of metapleurite, and completely surrounded by patch of porous cuticle. Metasternum flat, narrowed anteriad and posteriad, with very narrow ribs on lateral margins. Metapleurites without black spots.

**Legs** pale, tarsi brownish. Profemora without spine, protibiae without carina.

**Abdomen.** Laterotergites of connexivum pale, with dark spots in anterior inner corners; laterotergite VII with dark inner margin. Each posterior angle of abdominal segments short and obtuse; posterior angles of segment VII widely triangular, rounded apically. Ventral surface of abdomen pale, covered with colorless points, without black spots. Spine
Figs 1–12. 1, 3–12 – parameres (1, 3, 5, 6, 8, 9, 11, 12 lateral view, 4, 7, 10 apical view); 2 – pygo- 
phore, caudal view. 1, 2 – *Conquistator mucronatus* (Uhler, 1897); 3 – *Supputius typicus* (Distant, 1889); 4 – *S. cincticeps* (Stål, 1858); 5 – *Apoecilus invarius* (Walker, 1867); 7, 8 – *Podisus brevispinus* Phillips, 1982; 10, 11 – *P. affinis* Distant, 1880; 6, 9, 12 – generalized schemes of paramere structure 
(6 – *Conquistator*, *Apoecilus* and *Supputius*; 9 – majority of *Podisus* species; 12 – *Podisus affinis* and probably some other species of *Podisus*). Apx, apex of paramere hypophysis; d. prd, dorsal parandria; 
da. m, dorsoapical margin of pygophore; dg. pr, digitiform process of paramere; inn. br, inner branch of 
paramere hypophysis; s. pr, sensory process of paramere; va. m, ventroapical margin of pygophore. 
Scale bar: 0.25 mm.
Pygophore (Fig. 2) as wide as long, its lateral walls in parallel planes. Lateroapical angles of pygophore short, rounded, located at level of ventroapical margin of pygophore, with short thickened setae on their apices. Dorsoapical margin of pygophore (Fig. 2, da. m) located below its ventroapical margin, with shallow notch along its whole width and several setae on each side. Dorsal infolding short. Ventoapical margin of pygophore (Fig. 2, va. m) strongly bent dorsal, with uniform small medial and lat-
eral notches. Impression of ventral surface of pygophore deep, with distinct, weakly concave basal margin located on level of pygophoral ventroapical margin and covered like it with dense long setae. **Dorsal parandria** (Fig. 2, d. prd) approximately as wide as long, narrowed on ventral end and widely rounded on dorsal end. Outer margins of parandria with deep notches, inner margins strongly convex, bearing as well as upper parandrial surfaces small rounded tubercles. Ventral parandria (presented in some other taxa of Asopinae) absent.

**Paramere** (Fig. 1). Basal plate rounded. Inner angle of sensory process (Fig. 1, s. pr) acute and slightly extended. Corpus of paramere wide in basal part, with long narrow digitiform process (Fig. 1, l. pr) on apical part of inner surface basally of hypophysis. Digitiform process directed anteriad and to medial line of pygophore. Hypophysis long and rather narrow, directed anteriad and slightly outside. Inner branch of hypophysis (Fig. 1, inn. br) short, acute-angled, directed anteriad. Apex of hypophysis (Fig. 1, apx) shorter and wider than its inner branch, directed outside. Inner and outer margins of hypophysis concave.

**Aedeagus** (Fig. 13). Phallobase as long as wide, widening caudad, with rather narrow ventral processes. Basal and apical parts of theca (Fig. 13, a. th, b. th) subequal in length. Ventroapical notch of apical part of theca shallow, widely rounded. Base of conjunctiva with weakly sclerotised patch on each side. Ventrolateral lobes of conjunctiva (Fig. 13, vl. l) long, moderately wide basally, narrowing apicad, without sclerites on their apices. Ventrolateral lobes directed ventrolaterad and arcuately bent towards base of aedeagus. Apex of conjunctiva (Fig. 13, a. con) roundish, its length slightly more than its width. Ventral lobe of conjunctiva rather short. Longitudinal bands of medial penial plates (Fig. 13, l. b) parallel, narrow, weakly extending distad. Membranous surface between them convex on total length. Apical processes of medial penial plates (Fig. 13, a. pr) short, converge, but not contiguous. Vesica (Fig. 13, ves) appearing as short tube.

**Female genitalia** (Figs 16, 17). Posterior margins of gonocoxites 1 strongly convex in outer part. Each gonocoxite 1 with deep impression on internal surface in its inner part near posterior margin. Medial genital plate rectangular, with straight posterior margin. Paratergites IX wide, with rather strong convex inner and straight outer margins. Paratergites VIII wider than long, with widely rounded outer angles, straight posterior margins and very small spiracles in anterior corners. **Gynatrial sclerites**. Basal sclerites (Fig. 16, b. s) moderately wide, in form of crescent, strongly narrowed on anterior and posterior ends. Round sclerites (Fig. 16, r. s) small. Annular clerite (Fig. 16, ann. s) rather short, roundish. Conoid sclerite (Fig. 16, con. s) longer than its width and slightly expanded in its anterior part. **Spermatheca**. Proximal part of spermathecal duct (Fig. 17, pr. d) nearly reaching middle of abdominal sternum VII. Medial part of duct not reach anterior margin of sternum VI. Proximomedial part (membranous dilation) of duct (Fig. 17, prm. d) narrowed in its base; distomedial part (sclerotized rod) of duct (Fig. 17, dm. d) without dilation before its posterior (morphologically anterior) end. Proximal collar of spermathecal pump reduced. Capsule (Fig. 17, cap) roundish, slightly shorter than pump.

**ACKNOWLEDGEMENTS**

I thank D. A. Rider (North Dakota State University, Fargo, USA) for providing material for this work and some important comments on the manuscript.

**REFERENCES**


Received 10 October 2009 / Accepted 8 December 2009.