PSEUDOCLERUCHUS TRICLAVATUS DONEV AND HUBER, GEN. AND SP. NOV. (HYMENOPTERA: MYMARIDAE), WITH NOTES ON THE CLERUCHUS-GROUP OF GENERA

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Abstract – Pseudocleruchustriclavatus Donev and Huber, gen. nov. and sp. nov., is described from six females collected in the Rodopi Mountains and Stara planina ridge, Bulgaria. This genus is in a group of nine genera, informally named the Cleruchus group. Platypatasson, syn. nov., is removed from synonymy under Cleruchus and synonymized instead under Platystethynium. Its type-species is transferred as Platystethyniumfransseni (Ogloblin), comb. nov.

Key words: Mymaridae, Pseudocleruchus, P. triclavatus, new genus, Cleruchus group

Introduction

The new genus described below belongs to a group of at least eight other, related genera, treated informally here as the Cleruchus group: Apoxypteron Noyes & Valentine, Ceratanaphes Noyes & Valentine, Cleruchus Enoch, Eucleruchus Ogloblin, Haplochaeta Noyes & Valentine, Platystethynium Ogloblin, Prionaphes Hincks, and Paracmotemnus Noyes and Valentine.

The Cleruchus group cannot be defined by the common possession of any single feature, but by a combination of features, any one of which may not occur in all the genera. These features identifying the group include: face usually angular in lateral view, strongly receding below toruli to mouth; stigmal vein often widened, sometimes wider than long; funicle segments of females usually subquadrate or wider than long; mesosoma often somewhat flattened, wider than high; forewing usually narrow and often parallel sided; and legs often short and stout.

The southern hemisphere is clearly the present centre of diversity for the Cleruchus group. Except for the cosmopolitan Cleruchus the remaining described genera occur south of the equator or in equatorial regions. Ceratanaphes occurs in Australia and New Zealand (Noyes & Valentine 1989) and was recently found in Chile (2 females, Canadian National Collection, Ottawa). A Baltic amber fossil (Jens Janzen private collection, Seevetal, Germany) indicates that Ceratanaphes once occurred in the northern Hemisphere as well. Apoxypteron, Haplochaeta, and Prionaphes are known only from New Zealand, and Paracmotemnus occurs in New Zealand and Australia (Noyes & Valentine 1989). Euchleruchus is known from Argentina (Ogloblin 1940) and Platystethynium is known from Indonesia (Ogloblin 1946). The past occurrence of Ceratanaphes in the northern hemisphere indicates that its current Gondwanan distribution is relictual; the genus has gone extinct elsewhere.
Ogloblin (1946) pointed out what he considered the remarkable parallelism of features in his *Platystethynium* and *Platypatasson*, which he attributed to convergence caused by adaptation to parasitism in eggs of Tettigonoidea. Members of both genera were reared from the same locality in Java and possibly from the same host, a “locustid” (= Tettigoniidae, not Acrididae as stated by Schaff 1984). Ogloblin treated his genera as being related to other, quite different genera: *Platystethynium* to *Stethynium* and *Platypatasson* to *Patasson* (now a species group in *Anaphes*), respectively, based presumably upon the different number of claval segments in females (three in the first two genera and two in the second two genera). The number of claval segments in females is known to vary among species of the same genus, e.g., *Prionaphes* and *Stethynium* (Noyes & Valentine 1989). Flagellomere number in males of *Cleruchus* also varies (Debauche 1948). We agree with Noyes and Valentine that claval segmentation is a poor character for defining genera. Because almost all the other features of *Platystethynium* and *Platypatasson* females are the same we consider that their features are not convergent but were inherited from a common ancestor and that the two taxa form only one genus. Schaff (1984) had synonymized *Platyptasson* under *Cleruchus* but we remove it from synonymy under *Cleruchus* and instead synonymize *Platyptasson* under *Platystethynium*, *syn. nov.* *Platypatasson* *fransseni* Ogloblin is transferred to *Platystethynium*, *comb. nov.* Males of *Platypatasson* have rudimentary wings (Subba Rao 1970). When males of *Platystethynium onomarchicidum* Ogloblin are discovered and compared with those of *P. fransseni* the synonymy proposed here may be better confirmed.

**Methods**

Two of the six known specimens of *Pseudocleruchus* were slide-mounted in Canada balsam, without clearing in KOH. The remainder are in alcohol or critical point dried and card-mounted. All measurements are in micrometers, unless given as ratios. Holotype measurements are given first followed by one paratype measurements in parentheses, where available. Abbreviations used are fu, for funicle segment, Gt, for gastral tergum.

*Pseudocleruchus* Donev and Huber, *gen nov.*

**Type species:** *Pseudocleruchus triclavatus* Donev and Huber, *sp. nov.*

**Diagnosis.** Females of *Pseudocleruchus* differs from those of *Cleruchus* by the following features: clava (Figs 4, 8) 3-segmented (1-segmented in *Cleruchus*); radicle fused with scape (distinctly separated in *Cleruchus*); ocellar triangle relatively high (Fig. 1), with OOL about half POL and posterior ocellus separated by about 1.5 X its diameter from supraorbital trabecula (ocellar triangle low, with OOL much less than half POL and posterior ocellus almost touching supraorbital trabecula in *Cleruchus*); stemmaticum trapezoidal and indicated by pale markings (stemmaticum elliptical and indicated by sutures in *Cleruchus*); mandibles reduced, not meeting medially (overlapping medially in *Cleruchus*); prosternum entire (longitudinally divided in *Cleruchus*); stigmal vein (Fig. 5) not wider than marginal vein (distinctly wider in *Cleruchus*); forewing (Fig. 6) not parallel-sided and with relatively numerous microtrichia (parallel sided and with few microtrichia in *Cleruchus*); mesophragma (Figs 2, 7) extending into gaster and weakly bilobed apically (mesophragma not extending past petiole and rounded apically in *Cleruchus*);
petiole indistinct (Fig. 3) not abruptly narrower than gaster (petiole distinct and abruptly narrower that gaster in Cleruchus).

Pseudocleruchus is most similar to Eucleruchus. Both have the radicle not separated from the scape, entire supraorbital trabecula, marginal vein not widened, and an indistinct petiole with the mesophragma extending into the gaster. In contrast, Eucleruchus has an entire clava and the prosternum is longitudinally divided.

**Description. Female.** **Head** (Figs 1, 7) in dorsal view about 1.2 X as wide as long, slightly wider than mesosoma (165:152), in lateral view triangular, with face strongly angular and receding sharply below toruli towards mouth. Face with subantennal groove extending from each torulus to mouth margin, with a pointed protruberance at apex of transverse trabecula between torulus and eye, and with 1 and 1 setae between toruli, 2 and 2 setae below toruli sublaterally, and 2 and 2 setae along lateral sulcus separating face from gena. Malar space with 1 setae near lateral sulcus of face. Toruli separated from transverse trabecula by slightly more than half their own length. Vertex (Fig. 1) with stematicum present as trapezoidal arrangement of white lines around ocelli and a line extending from each anterior corner of trapezoid toward junction of transverse and supraorbital trabecula, and with 3 and 3 sublateral setae, 1 and 1 behind lateral ocelli, 1 and 1 inside stematicum lateral to median ocelli, and 1 and 1 outside stematicum anterior to median ocellus; POL:LOL:OOL = 51:28:26; distance from median ocellus to transverse trabecula about 4.4 X median ocellar length. Supraorbital trabecula entire. Dorsal orbit with 4 setae, 1 posteriorly and 3 anteriorly. Eye with a few scattered short setae among ommatidia. Temple in dorsal view about 0.26 X width of eye. Occipital margin in dorsal view slightly curved inward, its anterioirmost point almost in line with line connecting posterior ocelli. Gena with 3 setae behind eye. **Antenna** (Fig. 4) about 0.6 X body length, with radicle not separated from scape, with 6 more or less quadrate funicle segments, and with 3-segmented clava. Mandibles small, not meeting medially, each with a single pointed tooth and one apparently with a small blunt ventral (posterior) tooth.

**Mesosoma** (Figs 2, 7) not flattened dorsoventrally. Pronotum visible in dorsal view, about 0.14 X as long as mesoscutum along midline, divided into two lobes abutting medially, each lobe with 2 setae dorsally. Propleura meeting medially, each with 1 seta on inner margin. Prosternum not longitudinally divided, with anterior margin broadly rounded, and with 1 and 1 setae in posterior half. Spiracle oval, flat, at extreme posterior apex of pronotal lobe. Mesoscutum 1.6 X as broad as long (148: 78), with straight, percurrent notaui, and 1 and 1 setae in posterior half of midlobe, and with 1 seta at posterolateral angle of each lateral lobe. Scutellum about 1.4 X as long as mesoscutum; anterior scutellum more than half as long as posterior scutellum (43:69), with the two placoid sensilla in anterior half separated from each other by about twice their diameter, and with 2 sublateral seta. Axilla with a minute seta on inner margin of lateral panel. Posterior scutellum slightly wider medially than anteriorly and distinctly bilobed posteriorly. Metanotum scarcely visible laterally and not visible medially, with 1 minute seta submedially on each lateral panel. Mesophragma narrowing gradually, extending into metasoma just past base of Gt1, and weakly bilobed at apex. Propodeum about twice as long as scutellum (113:59); propodeal seta close to posterior margin.

**Wings.** Forewing (Fig. 6) slightly shorter than body length, with anterior and posterior margins not parallel; discal setae numerous and evenly distributed beyond venation, sparse behind venation; longest marginal cilia slightly longer than greatest wing width. Venation (Fig. 5) 0.37 X wing length; submarginal vein with 17–20 bullae; marginal vein with hypochaeta basal to proximal macrochaeta and distal macrochaeta distinctly longer than proximal macrochaeta.
Hindwing with 1 row of microtrichia between the usual anterior and posterior rows and a partial second row medially; longest marginal cilia about 2.6 X wing width. Venation about 0.34 X wing length.

**Legs.** Relatively short and robust (Fig. 7), with tarsi 4-segmented. Foretibial spur forked apically, with outer tine more than 2 X as long as inner tine.

**Metasoma.** Petiole short, scarcely visible. Metasoma (Fig. 3) oval in dorsal view, with posterior margin of each tergum straight. Gastral spiracle absent. Cerci oval with 4 setae, the longest extending to apex of ovipositor. Ovipositor about 1.2 X as long as hind tibia.

**Male.** Unknown.

**Etymology.** The genus is named from Greek “pseudos” meaning false, and Cleruchus. Gender masculine.
**Pseudocleruchus triclavatus** Donev and Huber, sp. nov.

(Figs 1–8)

**Type material.** **Holotype** female #61537, mounted in dorsal view on slide in Canada balsam and labelled: 1."26.VI.1999 m[ountain] h[ostel] Martsiganitsa Rodopi Mts. 1470m, Bulgaria leg. A. Stoyanova". 2."Pseudocleruchustriclavatus det. Donev et Huber". **Paratypes.** Bulgaria: Stara planina ridge, 25.VI.1996, 1050 m, leg. A. Donev #61537 (1& on slide); Rodopi Mts., Pamporovo, 30.VII.2000, leg. A. Stoyanova" (3& in alcohol and 1 on card). The holotype and 3 paratypes are deposited in the collection of the Department of Zoology, University of Plovdiv, Bulgaria, and one card-mounted paratype is in the Canadian National Collection of Insects, Ottawa.

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**Figures 6–8** *Pseudocleruchus triclavatus*, holotype and paratype. 6, wings (paratype); 7, body, dorsal view; 8, antenna (fu₆ and clava from one antenna placed on clava-fu₅ of other antenna by digital imaging).
Description. Female. Coloration. Mesosoma and metasoma brown except Gt₃–Gt₅ each with transverse light brown band; head, antenna, coxae, and femora lighter brown, pronotum, propodeum, and ovipositor plate darker brown; tibiae and tarsi yellowish. Stemmatically defined by pale lines in an H-like pattern in front of and lateral to ocelli. Wings slightly darkened, except for narrow clear band parallel to forewing margin in apical third.

Body. 728 (683) long, without evident sculpture (body sculpture cannot be properly seen because the specimens are uncleared).

Head (Fig. 1) 122 long. Antenna (Fig. 4) with length/width measurements as follows: scape 111/33, pedicel –/.28, fu₁–fu₆ 20/20, 25/24, 22/28, 25/27, .23/30, .18/32, clava 143/64 (claval segments 1–3: 50, 39, 54). Fu₁ and fu₆ quadrate, fu₃-fu₆ broader than long. Fu₃ and fu₄ each with one longitudinal sensillum; clava with 2 longitudinal sensilla on each of the first two segments and 3 on the third.

Mesosoma (Fig. 2) 250 long and 148 wide. Forewing (Fig. 6) 643 long, 103 wide, length/width about 6.3, microtrichia on blade uniformly distributed beyond stigmal vein; longest marginal cilia almost as long as greatest wing width. Hindwing (Fig. 6) 608 long, 31 wide, longest marginal cilia about 2.6 X greatest wing width. Leg measurements (holotype) as follows:

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Metasoma (Figs 3, 7) 336 long, 172 wide. Petiole about 7 long; lengths of gastral terga Gt₁–Gt₆ (including Gt₇, which is not distinguishable): 20, 45, 44, 55, 62, 77; Gt₃–5 with 2 and 2 sublateral setae, Gt₆ with 3 and 3 setae, and Gt₇ with 4 evenly spaced setae between cerci. Ovipositor 257 long, exserted about 0.13 X its length beyond apex of metasoma. Ovipositor plate (Gt₇) with 3 and 3 setae apically, and 3 and 3 setae submedially.

Specific epithet. From Latin, tres, three, and clava, club, referring to the 3-segmented clava.

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References

