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Cover: Mauve Stinger *Pelagica noctiluca* by Swaathi Na. Medium used is soft pastels and gelly roll.



features of this bug, including the male genitalia because the species was originally described on the basis of two females only. We are also providing the digital image of the female terminalia. Kumar (1971) gave only details of the phallus (aedeagus) of this species and shape of the parameres, without commenting on or illustrating the shape of pygophore while we are providing details of the structure of pygophore as well. Thus, we are adding significant new information about *U. nilgirica* than what is available to date.

TAXONOMY (as per Rider 2006, 2015)

Urostylididae Dallas, 1851

Urostylidinae Dallas, 1851

Urolabidini Stål, 1875

***Urolabida* Westwood, 1837**

***Urolabida nilgirica* Yang, 1938**

Material examined: 2 males, India, Tamil Nadu, Dindigul, Thadiyankudisai, HRS, 10.29514°N, 77.70878°E, 11.vi.2018, leg. H. Sankararaman, light trap; 1 female, with the same data as of male. One male and one female preserved at Modern College, Pune 5 (MCZ Uro1 and MCZ Uro2, respectively); one male preserved at Department of Entomology, Faculty of Agriculture, Annamalai University, Chidambaram, Tamil Nadu (EDAU Het 1). Image of the syntype preserved at BMNH, London, was compared.

REDESCRIPTION

Size and colouration

Medium size bug, male about 12 mm long, female slightly larger, about 13.5 mm. In life the colour is bright

green dorsally and pale greenish-yellow ventrally. The first antennomere is dark green and the II–V are brownish with pale basal region of antennomeres 4 and 5. The area of corium adjacent to clavus along its length and the apical margin of the corium is dark black. All femora are dark green and tibiae pale green; the apices of all femora, anteriorly and posteriorly, are marked with black spots. The posterior margin of pronotum and clavus are pale green and, except the black basal line, the membrane is translucent, such that in male it is easy to see contour of the pygophore (Images 1A, 2A, 5A).

After drying, the bug becomes dorsally mostly brownish-ochraceous with greenish tinge at places, especially on corium; black areas remain unchanged and the black punctures, especially on posterior part of pronotum and scutellum, appear pronounced. Ventrally the insect is almost uniformly reddish-ochraceous, only black spots on apex of femora are different (Images 2B, 4B).

STRUCTURE

i. Head

Head short, as in most urostylidids, broader than long; eyes large, width of head at eye level more than width at anterior angles of pronotum. Clypeus and mandibular plates are distinct. Antenniferous tubercles situated anterolaterally between eye and mandibular plate, visible from above. Antennae long, longer than body, first segment thick and slightly curved and as long as pronotum, remaining segments slender. Labium relatively stout, reaching about middle of mesosternum (Image 3B).



Image 1. *Urolabida nilgirica* Yang, 1938 from Thadiyankudisai, Dindugal, Tamil Nadu: A—Live, male | B—Live, female. © H. Sankararaman.



Image 2. Habitus of *Urolabida nilgirica* Yang (male): A—dorsal view | B—ventral view. © H.V. Ghate.

ii. Thorax

Pronotum trapezoidal, with finely reflexed margin anteriorly and laterally; black punctures all over the surface except for calli. Pronotal anterior margin nearly straight, sides slightly sinuate and posterior margin slightly convex. Pro-, meso-, and metasternum smooth; prosternum very narrow, medially sulcate; metasternum convex, with median depression in anterior one third; metathoracic scent-gland peritreme long, transverse across sternum (Image 4A), evaporatorium not well developed. Procoxae close together, meso- and metacoxae well separated (Images 2B, 3B).

Scutellum triangular, as long as broad, uniformly punctured with black except for narrow median, longitudinal smooth line. Hemelytra well developed, passing beyond apex of abdomen in both sexes. In hemelytra, clavus almost impunctate along with adjacent inner area of corium; outer part of corium beyond media vein finely but sparsely punctate, punctures black with their margins reddish brown. Membrane with many parallel, colourless veins, almost transparent, in male revealing outline of large pygophore; width of abdomen

at pygophore slightly broader than width at apex of segment VII (Image 5A & B). All legs with femora and tibiae slightly flattened, tibiae slightly shorter and slender than respective femora; femora sparsely but tibiae and tarsi densely setose.

iii. Abdomen

Abdomen in male nearly parallel-sided for 3/4 of its length thence slightly narrowed and again the segment IX or pyrophore is slightly broader; median region broadly ridged between segments III–VII; sternum VIII capacious yet accommodating only 1/3 of basal portion of pygophore—whole structure looking like a fan (Images 2B, 5B).

Detached pygophore (before / after KOH treatment views) in dorsal view appears like a limpet (Image 6A,B). There are two spiny protrusions on the inner wall in posterior half, inner one of those is long and strong while outer is more or less like a tubercle. There are many long setae on this lateral inner wall of pygophore and also on outer rim. Dark black, strong parameres are situated in anterior half and in more dorsal position.



Image 3. Structures of *Urolabida nilgirica*: A—Head, pronotum and scutellum | B—Head and thoracic sternum. © H.V. Ghatge

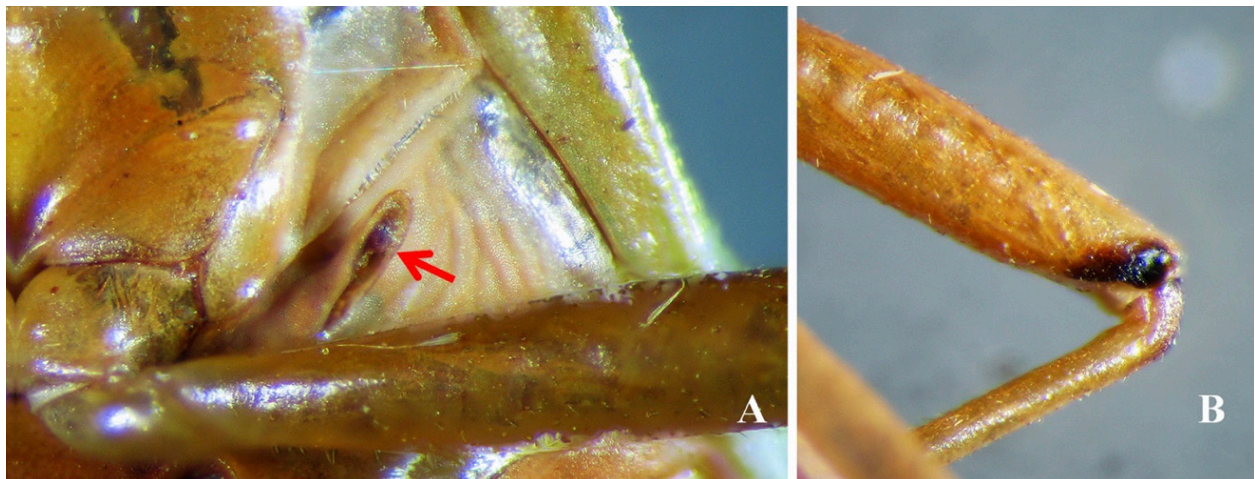


Image 4. Structures of *Urolabida nilgirica*: A—Metathoracic scent gland spout | B—Apex of femora black. © H.V. Ghatge

Overall pygophore appears slightly longer than broad (Image 6A–F). In lateral view pygophore appears cup-shaped (Image 6C,D); in slightly oblique lateral view it is possible to see parameres and those spiny protrusions as well as sinuate and setose margin; position of phallus

is also apparent due to KOH treatment. Ventral view of pygophore appears as in Image 6E; spiny protrusions and outline of phallus, which is situated in basal half, are visible through KOH treated, hence translucent, ventral wall (Image 6F).



Image 5. Abdomen of *Urolabida nilgirica*, male: A—Pygophore, dorsal | B—Pygophore, ventral. © H.V. Ghatе.

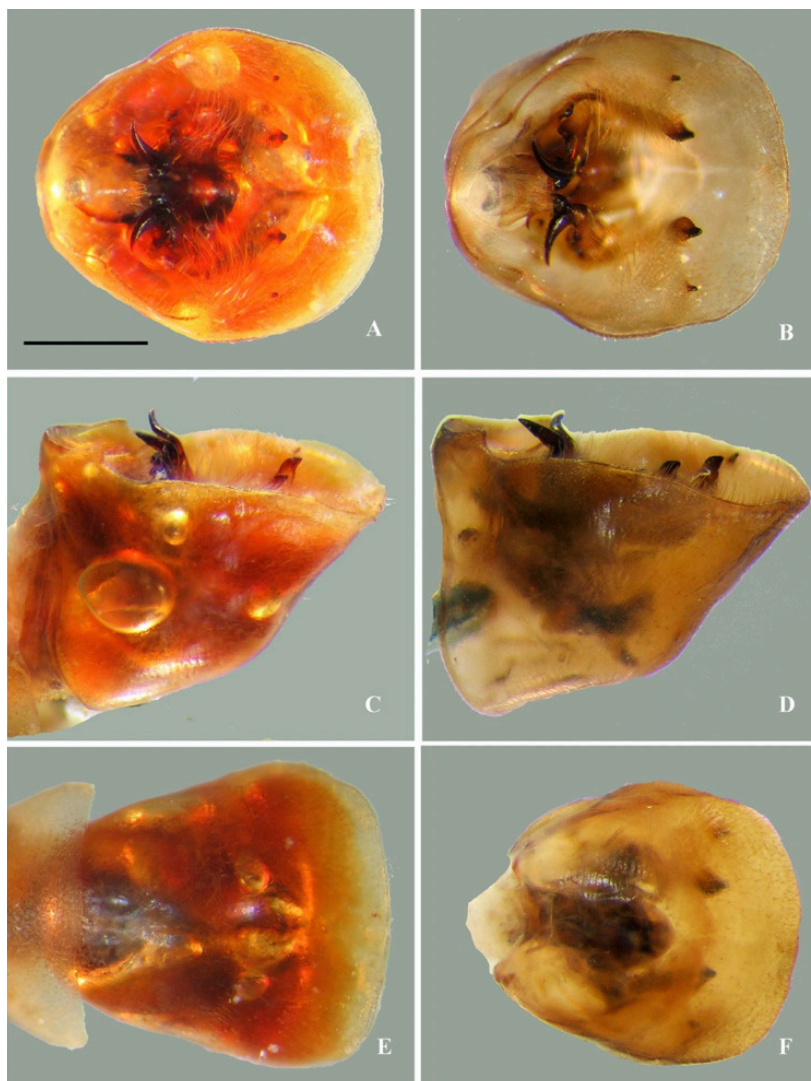


Image 6. Pygophore: A, B—dorsal | C, D—lateral | E, F. ventral. (Images 6A, 6C and 6E, pre KOH treatment; Images 6B, 6D and 6F post KOH treatment). (scale 1 mm). © H.V. Ghatе.

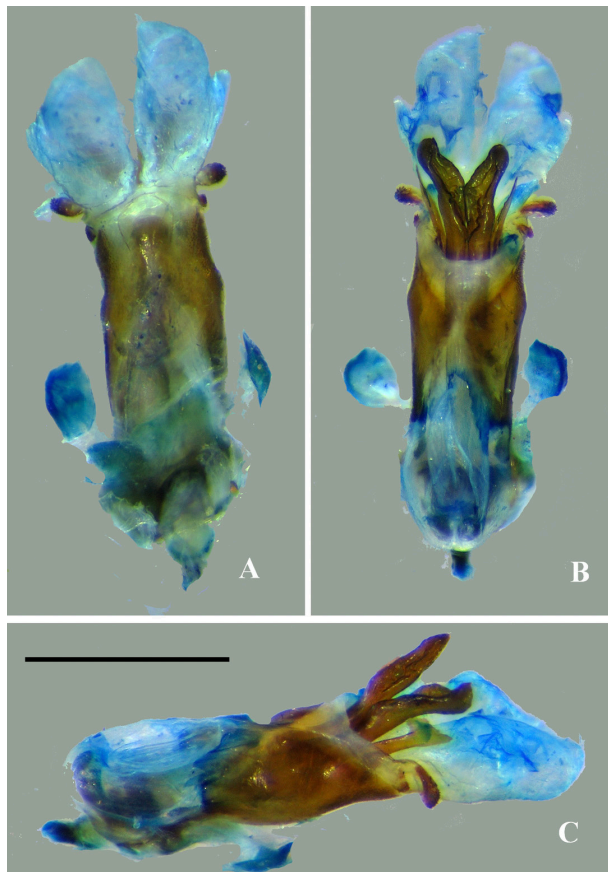


Image 7. Phallus: A—dorsal | B—ventral | C—lateral (scale 1 mm). © H.V. Ghate.

Dorsal, ventral and lateral views of partly everted phallus are provided here (Image 7A–C). Phallus is symmetrical, uniformly cylindrical, dorsally as well as ventrally well sclerotized. Large, membranous dorsolateral proximal connexival (DLPC) lobes with lateral sclerotized lobes, ventromedian distal connexival processes (VMDC) are highly sclerotized and prominent, dark brown, elongate structures; dorsolateral distal connexival processes (DLDC) are also sclerotized but slender and brown (Image 8A). Due to rigid nature and single specimen further eversion of phallus was not successful to reveal details of vesica and other lobes. Parameres sclerotized, curved, with tooth like structure distally and also with a spiny projection in opposite direction, dark brown in distal half, pale brown in basal region (Image 8B).

Female

Identical to male in structure but broader and larger in size, with abdomen more parallel-sided and slightly narrowed only in genital region. Female with sternum VII very broad and long; female terminalia as shown

in Image 8C. Paratergite VIII spatulate (labelled as 8pt in Image 8C), projecting distally but not meeting the opposite paratergite. Paratergite 9 (labelled as 9pt) short and narrow. Gonocoxite VIII (labelled as 8g) large but gonocoxite IX small and not clearly seen in ventral view here.

Measurements (mm): male: total body length, 12.0; head width at eyes, 1.75; interocular distance, 1.0; length of rostrum, 3.20; length of antennomeres, I, 3.0; II, 3.1; III, 1.5; IV, 3.0; V, 2.5; pronotum length, 2.25; pronotum width at humeral angles, 4.50; scutellar length, 2.75; scutellar width at base, 2.75; female: total body length, 12.7; head width at eyes, 2.0; interocular distance, 1.0; length of rostrum, 2.75; length of antennal segments, I, 3.0; II, 3.3; III, 1.75; IV & V, lost; pronotum length, 2.5; pronotum width at humeral angles, 5.2; scutellar length, 3.25; scutellar width at base, 3.25.

DISCUSSION

The species *U. nilgirica* was described well by Yang and our specimen matches exactly with the original description given by Yang (1938). Further, the structure of the male genitalia (phallus as well as parameres) of our specimen match with the description and drawings given for this species by Kumar (1971); similarly female terminalia in our specimen match very well with the figure given in original description by Yang (1938). In addition, we have also compared dorsal habitus image of our female specimen with the identical image of the syntype preserved at the Natural History Museum (BMNH), London, and again found complete matching. Thus, there is no doubt that our specimens are *Urolabida nilgirica* and that this species has been rediscovered in Tamil Nadu, but from a different hill range, after a long gap of over 100 years.

Urostylididae are a small family with only eight genera, 173 extant species and a few fossil species (Roca-Cusachs et al. 2021; Duan et al. 2023). Rider et al. (2018) recently summarized essential features of this family and stated that the biological information on this group is still meagre. Chinese species have been relatively well worked and many of these works are cited by Roca-Cusachs et al. (2021) and hence need not be recited. Taiwanese Urostylididae were also reviewed by Ren & Lin (2003). Work on Indian species is wanting. We need more surveys to document / illustrate and redescribe such species but at present no specific efforts are made to understand Urostylididae fauna of India; a paper published on *Urolabida histrionica* (Westwood, 1837) (Ranade & Ghate 2023) may be the only recent paper on this family from India. Earlier, Ahmad et al.

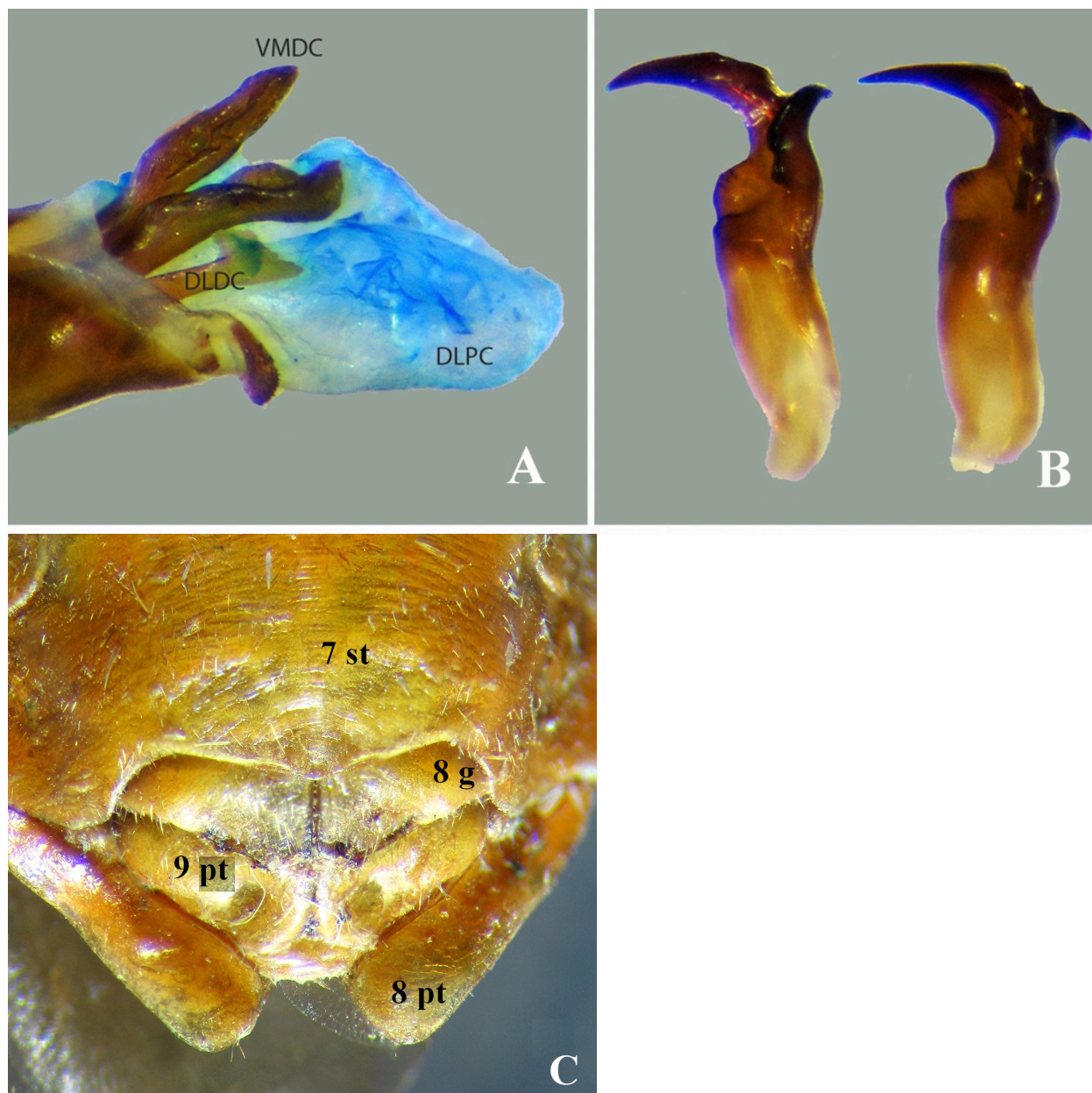


Image 8. A—Phallus magnified, lateral | B—Parameres | C—Female terminalia, ventral. © H.V. Ghatе.

(1992) reviewed and carried cladistic analysis of the various characters of Urostylididae (under earlier name Urostylidae), gave details of genitalia of some species, provided keys to all known 27 species of the Indian subregion at that time and discussed relationship of Urostylididae with some Pentatomoidea; however, their list did not include *Urolabida nilgirica*.

The taxonomy of this family is still problematic as the genera are not well defined and frequently the characters used to separate genera are not well-founded making identification difficult (Roca-Cusachs et al. 2021; Duan et al. 2023; Ranade & Ghatе 2023). Even the molecular work

involving nuclear 18S and 28S rRNA genes, along with total mitochondrial genome analysis, of seven genera and 51 species of Urostylididae by Duan et al. (2023) indicated that the three species-rich genera, *Urolabida* Westwood, 1837, *Urochela* Dallas, 1850 and *Urostylis* Westwood, 1837 are all polyphyletic groups; not only that but this analysis even does not support recognition of the two tribes (Urolabidini and Urostylidini) that are currently accepted in Urostylididae. It is clear that much work is required in this family, especially on species found in India as most Indian species are still poorly known. More knowledge about Indian as well as southeastern

Asian species will help revising the existing classification. We agree with Duan et al. (2023) who stated that "... the current classification of tribes and genera within this family needs to be thoroughly revised".

Finding this species near its own type locality, after a gap of a century, is really heartening as this indicates that the environs of this species are not still damaged beyond repair, in spite of ongoing deforestation in these areas.

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