Taxonomic notes on the genus *Sceliphron* Klug (Hymenoptera: Sphecidae) from northern Vietnam, with description of a new species

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**Abstract**: A taxonomic study on the genus *Sceliphron* Klug in northern Vietnam is presented. A total of 3 species are recorded: *S. deforme deforme* (F. Smith, 1856); *S. madraspatanum kohli* Sickmann, 1894; and *S. clypeatum* sp. nov., which is described for the first time here. A key to the species based on morphological characters is given, and new distributional records are also provided.

**Key words**: Hymenoptera, Sphecidae, *Sceliphron*, new species, Vietnam

1. Introduction

Commonly called mud dauber wasps, *Sceliphron* is a genus of wasps belonging to the family Sphecidae. The genus is widely distributed in all temperate and tropical areas. There have been 35 species recorded to the genus so far (Pulawski, 2015). Van der Vecht and van Breugel (1968) divided *Sceliphron* into 2 subgenera (*Prosceliphron* and *Sceliphron* s. str.) based on differences in morphological as well as ethological characters. However, they only studied the subgenus *Sceliphron* with 18 species. In the subgenus *Sceliphron*, they recognized 2 species groups, the group of *S. madraspatanum* and the group of *S. spirifex* with 10 and 8 species, respectively. The latter was studied by Hensen (1987), who recognized 11 species. Jha and Farooqi (1995) added 4 species, 3 of which belong to the subgenus *Sceliphron* (*S. isaaci, S. paraintrudens, and S. seistaniensis*) and 1 to the subgenus *Prosceliphron* (*S. neobilineatum*), *S. aterritus* (Marquet, 1875) and *S. leptogaster* Cameron, 1905 have only been recorded from France and South Africa, respectively.

Two species of the genus *Sceliphron* have been recorded for northern Vietnam thus far (Pham et al., 2015). In the present paper, a new species, *Sceliphron clypeatum* sp. nov., is added to the Vietnamese sphecid fauna; a key to the species and new distributional records of species are also provided.

2. Materials and methods

The specimens examined in the present paper are those deposited in the Institute of Ecology and Biological Resources (IEBR), Vietnam Academy of Science and Technology (VAST), Hanoi, Vietnam.

The adult morphological characters were observed and described from pinned and dried specimens with the aid of a stereoscopic microscope. The terminology follows Bohart and Menke (1976). Photographic images were taken using a Leica stereomicroscope with LAS software, version 3.6.0.

The abbreviations of museums or institutions where the type specimens are kept follow Arnett’s Insect and Spider Collections of the World (http://hbs.bishopmuseum.org/codens/codens-inst.html).


**USNM**: National Museum of Natural History, Washington, DC, USA.

**NHMW**: Naturhistorishes Museum, Zoologischen Abtheilunf, View.

3. Results and discussion

Family Sphecidae

Subfamily Sceliphrinae

Tribe Sceliphrini

Genus *Sceliphron* Klug, 1801


Pelopæus Latreille, 1804: 180. Lapsus or emendation of Pelopæus.


Prosceliphron van der Vecht, 1968: 192. Type species: Sceliphron coramandelicum (Lepeletier de Saint Fargeau, 1845) [= Pelopæus coramandelicus Lepeletier de Saint Fargeau, 1845], by original designation. Junior homonym of Prosceliphron Frenguelli, 1946.


Key to species of the genus Sceliphron occurring in northern Vietnam

1. Terminal gaster sternite of female rather sharply keeled. Lower half of inner eye-margins almost parallel; mandible without tooth on inner side; thorax dull, finely sculptured; metapleuron punctate; thorax with extensive keeled. Lower half of inner eye-margins almost parallel; thorax dull, finely sculptured; metapleuron impunctate; petiole entirely black; fourth tergite with complete yellow band ......................................................................................... 2

2. Body length 18 mm; petiole in lateral view distinctly straight; subalar and hypopomeral area with yellow mark; apical half of fore and mid femur, and whole fore and mid tibia yellow .... S. madraspatanum kohli Sickmann, 1894

- Body length 23 mm; petiole in lateral view distinctly curved; thorax entirely black; basic half of hind tibia, petiole deeply yellow; apical half of fore and mid femur, and whole fore and mid tibia brown .... S. clypeatum sp. nov. 1. S. deforme deforme (F. Smith, 1856)


Materials examined: Hoa Binh: 1♀, Mai Chau Town, Mai Chai District, 3.vi.2012, Pham P.H., IEBR. Regd. No. 00125/P12.

Distribution: China: Hong Kong, Japan, India, Korea, Montenegro, Taiwan, Russia, Tajikistan, Philippines, Mongolia, Southeast Kazakhstan, Myanmar, Thailand, Laos, Vietnam: Hoa Binh.

Remarks: Hensen (1987) recorded this species for northern Vietnam in Hoa Binh Province. The specimen of the species was a male and was collected in August 1918. Thus, after nearly 100 years, this species is reconfirmed to occur in northern Vietnam and has only been recorded in Hoa Binh Province so far.

2. S. madraspatanum kohli Sickmann, 1894


Distribution: China, Japan, Laos, Vietnam: Hanoi, Dong Nai, Quang Ninh (new record), Thai Binh (new record).

Remarks: van der Vecht and van Breugel (1968) examined this species based on 5♂ and 7♀♀ collected in April–May and August 1917. Thus, this species is reconfirmed to occur in northern Vietnam after nearly 100 years, and 2 new distributional localities (Quang Ninh Province and Thai Binh Province) are added.

3. S. clypeatum sp. nov. (Figures 1–6)


Description: Female: Body length 23 mm, fore wing length 17 mm, body black except for following: antennal scape and pedicel, flagellomeres I–V ferruginous; the following are brown: basic half of mandible, short zone just before apex of clypeus (as shown in Figure 1), apical half of fore and mid femur, fore and mid tibia, fore and mid tarsus and hind tarsus II–IV; hind trochanter, hind femur (except narrow apical part), basic half of hind tibia, petiole deeply yellow (as shown in Figure 6); wings and their veins yellowish (as shown in Figure 4).

Head (as shown in Figure 1): Clypeus conspicuously convex, nearly pointed at apex, with distinctly vertically risen median carina, outer margin of each clypeal lobe moderately truncate, 1.52× as long as wide. Mandible pointed at apex, with median carina extending from base to midlength. Lower half of inner orbits converging towards clypeus. Antennal scape moderately swollen. Minimum interocular distance across the vertex = 0.87× minimum interocular distance across the clypeus. Fore ocellar diameter = 1.15× distance between fore ocellus and hind ocellus, distance between the compound eye and hind ocellus = 1.5× distance between hind ocelli. Clypeal surface sparsely, shallowly punctate, punctures denser and shallower than on frons. Upper part of vertex irregularly, dully transverse striate. Long black setae scattered on frons and vertex, denser than on clypeus and lower part of vertex.
Thorax (as shown in Figure 2–5): Pronotal collar raised nearly as high as anterior part of scutum, with distinct median notch, each side with obviously deep impression. Scutum with admedian line, about one-third of length of scutum; parapsidal line deep, about half of length of scutum. Mesopleuron with episternal sulcus wide, deep; scrobe distinct (as shown in Figure 3). Scutellum and metanotum as well as metanotum and propodeum separated by distinct, deep grooves. Posterior portion of lower metapleural area with distinct transverse striations.

Figures 1–6: Sceliphron clypeatum sp. nov. (1) head in frontal view; (2) propodeum in dorsal view; (3) thorax in lateral view; (4) fore wing; (5) hind coxa; (6) gaster in lateral view.
Propodeum side sharply and coarsely striated, propodeal dorsum irregularly, incompletely striated (as shown in Figure 2). Hind coxa somewhat swollen, rounded on anterior side, straight on posterior side (as shown in Figure 5). Forewing with parastigma length 2.7× that of stigma, outer veinlet of submarginal cell III 1.36× as long as basal veinlet (as shown in Figure 4). Punctuation dense on scutum, mesopleuron, scutellum, metanotum; propodeal dorsum (here sparser than on pronotal collar); lower metapleural area, hind coxa (punctures more than 1 diameter apart). Setae on thorax black, sparse on propodeal dorsum, these denser than at upper portion of propodeal side.

Gaster (as shown in Figure 6): Integument smooth, shiny, with silvery pubescence. Petiole strongly curved. Tergum I with margins nearly fused ventrally. Terminal sternum flat, not keeled. Segment VI with a few long setae near apex.

Male: unknown

Name derivation: The specific name is a Latin adjective referring to the clypeus of the species.

Recognition: The characters described above demonstrate that the new species belongs to the S. madraspatanum species group of the subgenus Sceliphron. The color pattern resembles that of S. intrudens (F. Smith, 1858), S. quartinae (Gribodo, 1884), and S. paraintrudens Jha and Farooqi 1995. The morphological characters of S. clypeatum, however, are quite different from those of these 3 species. In S. intrudens: the face is covered with silvery pubescence; the clypeus has 2 large teeth at its apex, formed by a deep notch in its anterior margin; the scape is reddish-yellow anteriorly; the meso- and metathorax are transversely striated; the wing veins are ferruginous. In S. quartinae: The pronomal collar is relatively long, the anterior surface not falling steeply away from the dorsal surface, the latter without a median impression; the sides of pronotum are dull, very finely and closely ridged and angular seen from above or below.

S. intrudens: The apical margin of the clypeus is nearly square, and the sides are provided with a median impression; the sides of the pronotum are dull, very finely and closely ridged and angular seen from above or below.

S. quartinae: The apical margin of the clypeus is nearly square, and the sides are provided with a median impression; the sides of the pronotum are dull, very finely and closely ridged and angular seen from above or below.

Nomenclatural acts:
This work and the nomenclatural acts it contains have been registered in ZooBank. The ZooBank Life Science Identifier (LSID) for this publication is: http://zoobank.org/urn:lsid:zoobank.org:pub:D34324DF-3844-4B2C-B8EB-F423272A404B.

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