ADALGISA GUGLIELMINO (*) - MASSIMO OLMI (**) (°) - STEFANO SPERANZA (*)

DESCRIPTION OF *GONATOPUS XUI* SP. N. FROM INDIA (HYMENOPTERA DRYINIDAE)

(*) Department of Agriculture and Forestry Sciences (DAFNE), University of Tuscia, Viterbo, Italy

(**) Via De Gasperi 10, Viterbo, Italy

(°) Corresponding author: olmimassimo@gmail.com

Guglielmino A., Olmi M., Speranza S. – Description of *Gonatopus xui* sp. n. from India (Hymenoptera Dryinidae).

A new species of Dryinidae (Hymenoptera: Chrysidoidea) is described from India: *Gonatopus xui* sp. n. It is the first species of Dryinidae reported from Himachal Pradesh. The new species belongs to group 7 of *Gonatopus*. The key to the females of the Oriental species of *Gonatopus* group 7 is modified to include the new taxon. The new species is named after the late Professor Zaifu Xu, from Guangzhou (China), well-known specialist of Chinese dryinids.

KEY WORDS: Gonatopodinae, Himachal Pradesh, Oriental region, taxonomy, keys.

INTRODUCTION

Dryinidae of the Oriental region were studied in recent years by XU *et al.* (2013). Their monograph was followed by supplements published by GUGLIELMINO & OLMI (2013), KIM *et al.* (2013), OLMI *et al.* (2013, 2014, 2015a, 2015b, 2015c, 2016), MITA & PHAM (2014), GUGLIELMINO *et al.* (2017), MITA *et al.* (2017).

In the Oriental region, the genus *Gonatopus* Ljungh, 1810, includes 59 species (XU *et al.*, 2013; MITA *et al.*, 2017), among which 20 are reported from India. In 2017 the authors have examined a further new species of *Gonatopus* collected in India. It is described below.

MATERIALS AND METHODS

The description follows the terminology used by OLMI (1984) and XU *et al.* (2013). The measurements reported are relative, except for the total length (head to abdominal tip, without the antennae), which is expressed in millimeters. In the descriptions POL is the distance between the inner edges of the lateral ocelli; OL is the distance between the inner edges of a lateral ocellus and the median ocellus; OOL is the distance from the outer edge of a lateral ocellus to the compound eye.

The term “metapectal-propodeal complex” is here used in the sense of KAWADA *et al.* (2015). It corresponds to the term “metathorax + propodeum” sensu OLMI (1984) and XU *et al.* (2013).

The types of all Oriental species of *Gonatopus* were examined. The material studied in this paper is deposited in the following collections:

TAMU: Department of Entomology, Texas A. & M. University, College Station, Texas, USA.

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

RESULTS

Gonatopus xui sp. n.
(Fig. I, 1-2; Fig. II, 1)

MATERIAL EXAMINED

Holotype, 1 female: INDIA: Himachal Pradesh, Kothi Village and environs, IN-11, 32°18'N 77°11'E, 2300-2600

m, 29.V-8.VI.1999, Yu. M. Marusik leg. [TAMU (to be transferred to USNM)].

DESCRIPTION

Apterous female; length 4.2 mm. Head black, except mandible, clypeus, gena and anterior region of face testaceous; antenna brown, except antennomeres 1-2 testaceous; mesosoma black; metasoma brown; legs brown, except tarsi and part of trochanters testaceous. Antenna clavate; antennomeres in following proportions: 9:5:17:11:8:8:6:6:9. Head excavated, shiny, unsculptured; frontal line complete; occipital carina incomplete, only present behind ocellar triangle; POL = 1; OL = 2; OOL = 9. Palpal formula 5/3. Pronotum crossed by strong transverse impression, with anterior collar and disc shiny, punctate, unsculptured among punctures. Scutum shiny, sculptured by many longitudinal striae, laterally with two pointed apophyses (Fig. I, 1). Scutellum shiny, smooth, flat. Mesopleuron shiny, unsculptured. Metanotum slightly hollow behind scutellum (Fig. I, 2). Metapectal-propodeal complex shiny, with disc and anterior surface unsculptured; posterior surface transversely striate. Metapleuron with anterior half unsculptured and posterior half transversely striate. Meso-metapleural suture very thin, slightly distinct and complete. Protarsomeres in following proportions: 16:3:5:18:26. Enlarged claw (Fig. II, 1) with one small subapical tooth and one row of five peg-like setae, in addition to one bristle. Segment 5 of protarsus (Fig. II, 1) with one row of 20 lamellae; distal apex with about 10 lamellae. Tibial spurs 1/0/1.

Male: unknown.

DISTRIBUTION

Only known from the type locality (see above).

HOSTS

Unknown.

ETYMOLOGY

The species is named after the late Prof. Zaifu Xu, specialist of Chinese dryinids and author, with Prof. Junhua He, of the monograph on Dryinidae of the Fauna Sinica (He & Xu, 2002).

REMARKS

The female of the new species is apterous, with pronotum crossed by a strong transverse furrow, the enlarged claw

Fig. 1 – *Gonatopus xui* sp. n.: female holotype in dorsal (1) and lateral (2) view. Lateral apophyses of scutum indicated by arrows. Scale bar 1.83 mm.

Fig. II – Chelae of holotypes of *Gonatopus xui* sp. n. (1), *G. lankanus* Olmi (2) and *G. hainanensis* Olmi (3). Scale bar 0.18 mm for 1, 0.26 mm for 2, 0.36 mm for 3.

provided of one small subapical tooth and the palpal formula 5/3. Because of these characters, *G. xui* belongs to group 7 of *Gonatopus*, according to the systematics proposed by XU *et al.* (2013). The new species can be included in the key to the females of the Oriental species of *Gonatopus* presented by XU *et al.* (2013) by replacing couplet 14 as follows:

14. Enlarged claw with subapical tooth situated nearer distal apex (Fig. II, 1) *G. xui* sp. n.
– Enlarged claw with subapical tooth farther from distal apex (Fig. II, 2-3) 14'

14'. Head with face narrow and long [Fig. 128C in XU *et al.* (2013)]; face and occiput sculptured by numerous parallel and longitudinal striae *G. lankanus* Olmi
– Head with face shorter and more transverse (Fig. 127E in XU *et al.* (2013)); face and occiput slightly granulated, not sculptured by parallel and longitudinal striae *G. hainanensis* Olmi

CONCLUSIONS

Species of *Gonatopus* from India are known mainly thanks to the monograph on Dryinidae of the Oriental region by XU *et al.* (2013). The following 20 species were listed:

- Group 1: *G. nearcticus* (Fenton, 1927), known from Karnataka.
- Group 2: *G. nigricans* (Perkins, 1905): broadly spread in India and known from Bihar, Delhi, Orissa, Karnataka, Tamil Nadu and West Bengal; *G. nudus* (Perkins, 1912): known from Andhra Pradesh, Gujarat, Orissa and Tamil Nadu.
- Group 3: *G. bengalensis* Olmi, 1984: known from Assam; *G. pyrrillae* (Mani, 1942): known from Punjab and Uttar Pradesh.
- Group 5: *G. flavifemur* (Esaki & Hashimoto, 1932): known from Andhra Pradesh, Orissa and Tamil Nadu.
- Group 7: *G. attenuatus* Olmi, 1984: known from Karnataka, Kerala and Mysore; *G. besucheti* Olmi, 1991: known from Uttar Pradesh; *G. daunus* Olmi, 1984: known from Mysore; *G. iarensis* Olmi, 2005: known from Delhi, Karnataka and Tamil Nadu; *G. javanus* (Perkins, 1912): known from Karnataka and Delhi; *G. lucidus* (Rohwer, 1920): known from Bihar; *G. mysorensis* Olmi, 1984: known from Karnataka and Mysore; *G. nivosus* Olmi, 1984: known from Kashmir and Delhi; *G. rufoniger* Olmi, 1993: known from Karnataka; *G. schenklingi* Strand, 1913: known from Karnataka; *G. superbus* Olmi, 1987: known from Karnataka and Orissa; *G. viraktamathi* Olmi, 1987: known from Karnataka; *G. yasumatsui* Olmi, 1984: known from Karnataka and Uttar Pradesh.
- Group 10: *G. indicus* (Olmi, 1987): known from Karnataka.

Following the above description of *G. xui*, the *Gonatopus* species known from India are now 21. *G. xui* is the first species of Dryinidae collected in Himachal Pradesh.

In Thailand, known *Gonatopus* species are 7 (XU *et al.* 2013); in the Oriental region of China 24 (XU *et al.*, 2013); in Europe 50 (OLMI, 2013). The comparison with Europe shows that in general the knowledge of the *Gonatopus* species in all Asia and mainly in India is insufficient. Further research is necessary to fill the gap.

About the hosts, they are known only in ten of the 21 *Gonatopus* species recorded in India (GUGLIELMINO *et al.*, 2013): another gap to be bridged.

ACKNOWLEDGEMENTS

Many thanks to Prof. James B. Woolley (Texas A. & M. University, College Station, USA) for the loan of *Gonatopus xui*. The authors are very grateful to Prof. Maurizio Biondi (University of L'Aquila, Italy) for the multifocal pictures of the new species described in the present paper.

REFERENCES

- GUGLIELMINO A., OLM I M., 2013 – *Description of Anteon seramense (Hymenoptera: Dryinidae): a new species from Indonesia*. - Florida Entomol., 96 (2): 598-601.
- GUGLIELMINO A., OLM I M., BÜCKLE C., 2013 – *An updated host-parasite catalogue of world Dryinidae (Hymenoptera: Chrysidoidea)*. - Zootaxa, 3740: 1-113.
- GUGLIELMINO A., OLM I M., MARLETTA A., XU, Z., 2017 – *Description of Aphelopus fusciflavus, a new species of Dryinidae from Thailand (Hymenoptera, Chrysidoidea)*. - J. Hym. Res., 57: 115-121.
- HE J., XU Z., 2002 – *Hymenoptera Dryinidae*. Fauna Sinica, 29, Science Press, Beijing, China, I-XII+464 pp.
- KAWADA R., LANES G.O., AZEVEDO C.O., 2015 – *Evolution of metapostnotum in flat wasps (Hymenoptera, Bethyridae): implications for homology assessments in Chrysidoidea*. - PLoS ONE, 10(10): e0140051.
- KIM C.J., OLM I M., LEE S., LIM J., CHOI G.W., LEE J.W., 2013 – *A checklist of Dryinidae (Hymenoptera: Chrysidoidea) from Cambodia, with new records*. - J. Asia-Pacific Entomol., 16: 485-488.
- MITA T., NAGANO H., OLM I M., 2017 – *Dryinidae and Embolemyidae (Hymenoptera, Chrysidoidea) from Anijima, Ogasawara Islands, Japan*. - Zootaxa, 4323 (2): 239-249.
- MITA T., PHAM H.T., 2014 – *Dryinidae collected from Rice Paddy in Vietnam (Hymenoptera: Chrysidoidea)*. - Japan. J. Syst. Entomol., 20 (2): 245-246.
- OLMI M., 1984 – *A revision of the Dryinidae (Hymenoptera)*. - Mem. Amer. Entomol. Inst., 37: I-XII + 1913 pp.
- OLMI M., 2013 – *Fauna Europaea: Dryinidae*. - In: Mitroiu M.D., 2013, Fauna Europaea: Hymenoptera. Fauna Europaea version 2017.10, <https://fauna-eu.org> (accessed 31 Jan 2018).
- OLMI M., XU Z., GUGLIELMINO A., 2013 – *First supplement to the monograph of the Oriental Dryinidae (Hymenoptera: Chrysidoidea): description of Neodryinus lohmani, a new species from Thailand*. - Florida Entomol., 96 (4): 1556-1558.
- OLMI M., XU Z., GUGLIELMINO A., 2014 – *Descriptions of new fossil taxa of Dryinidae (Hymenoptera: Chrysidoidea) from Burmese amber (Myanmar)*. - Acta Entomol. Musei Nat. Pragae, 54 (2): 703-714.
- OLMI M., XU Z., GUGLIELMINO A., 2015a – *A new species of the genus Anteon Jurine (Hymenoptera, Dryinidae) from Thailand*. - ZooKeys, 504: 141-147.
- OLMI M., XU Z., GUGLIELMINO A., 2015b – *Description of a new species of Deinodryinus (Hymenoptera: Dryinidae) from India*. - Entomol. News, 125 (1): 33-37.
- OLMI M., XU Z., GUGLIELMINO A., 2015c – *Description of Dryinus laotianus (Hymenoptera: Dryinidae), a new species from Laos*. - Florida Entomol., 98 (2): 560-562.
- OLMI M., XU Z., GUGLIELMINO A., SPERANZA S., 2016 – *A new species of the genus Anteon Jurine (Hymenoptera, Dryinidae) from Laos*. - ZooKeys, 561: 31-38.
- XU Z., OLM I M. & HE J., 2013 – *Dryinidae of the Oriental region (Hymenoptera: Chrysidoidea)*. - Zootaxa, 3614, 1-460.

34 - Blank Page