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Occurrence of *Trissolcus jatrophae* Rajmohana et al. 2011 (Hymenoptera: Scelionidae) in Pune City, India

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The genus *Trissolcus* Ashmead, 1893 (Hymenoptera: Scelionidae) has species with cosmopolitan distribution and are known to be egg-parasitoids of Pentatomorpha bugs (Hemiptera: Heteroptera) (Johnson 1991). This genus shows a cosmopolitan distribution with more than 161 species (Yang et al. 2009) and is represented by eight species in India (Rajmohana 2006; Rajmohana et al. 2011). Fragmentary baseline data dealing with hosts, distribution, nomenclature, checklists and new species (Mani & Sharma 1982; Ambika et al. 2007; Rajmohana 2006; Rajmohana & Narendran 2007; Rajmohana et al. 2011) is available from India. In the state of Maharashtra, only one species- *Trissolcus orontes* (Nixon 1935) is recorded till date (Rajmohana 2006).

During the course of regular field visits undertaken for understanding the ecology of *Jatropha nana* Dalzell & Gibson (Euphorbiaceae), on 29 August 2014 the first author observed 30 eggs of an unidentified insect on the underside of one of the leaves of *J. nana* (Image 1). The eggs were found on the Vetal Hills in Pune City (18^{0}31'40.83"N & 73^{0}48'54.19"E), an urban wildscape that supports tropical southern dry mixed deciduous forest with the *Anogeissus latifolia* (Roxb. ex DC.) Wall. ex Guillem. & Perr.- *Lannea coromandelica* (Houtt.) Merr. - *Boswellia serrata* Roxb. ex Colebr. plant community being common (Champion & Seth 1968; Joshi & Kumbhojkar 1997). The eggs were collected along with the leaf and incubated under room temperature. A detailed examination of the eggs revealed that they were hemipteran eggs. After 29 days of incubation, unidentified parasitoid wasps emerged from the eggs. The specimens were collected and preserved in 70% ethanol.

Critical examination of the specimens revealed that they were *Trissolcus jatrophae* Rajmohana, Narendran & Manoharan 2011 (Hymenoptera: Scelionidae), a recently described taxon (with 15 specimens being females out of the emerged wasps). The specimens were deposited at Zoological Survey of India, Western Ghat Regional Centre, Kerala, India (ZS/WGRC/INV.4091).

Brief diagnosis of *Trissolcus jatrophae* Rajmohana, Narendran & Manoharan, 2011 (Image 2):

Length 1.7mm. Head, body and coxae black, rest of legs yellowish brown. Antennal radicle yellowish-brown, concolorous with scape, claval segments deep brown. Vertex sharply angled onto occiput. Hyperoccipital carina absent. Transverse rugae distinct on antennal scrobe, extending variably to orbital margin medially, with a few of them dorsoventrally oriented towards vertex; frons width subequal to eye height. Central keel present only as a stub. Third antennal segment distinctly

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Image 1. a - Eggs on date of collection; b - Eggs just before hatching; c - Habit and habitat of Jatropha nana Dalz & Gibs; d - Eggs on field

longer (1.2x) than the second; mesosoma, when viewed laterally with a convex hunch. Notauli absent or obscured by coarse sculpture. Dorsal lip of dorsellum with a row of four large and deep trough-like foveolae, the ventral lip being very narrow and faintly rugulose-punctate. Scutellum without a median carina. Metasoma short and plump, only a little longer than wide, and distinctly shorter than mesosoma T1 with longitudinal rugulae extending throughout, sublateral setae absent, T2 with longitudinal rugulae extending to nearly dorsal three-fourth.

Jatropha nana Dalzell & Gibson is an endemic threatened under shrub having restricted distribution in the western part of Maharashtra State, India (Singh et al. 2001) and is considered endangered owing to several factors (Mishra & Singh 2001). The identity of the plant was authenticated by authorities of the Agharkar Research Institute, Pune –AHMA (Authentication number: 14-196). Rajmohana et al. (2011) reported this *Trissolcus* species parasitizing eggs of *Scutellera nobilis* Fabr. on *Jatropha curcas* L. and thus the current report constitutes the first instance of occurrence of *T. jatrophae* from eggs of a pentatomoid bug found on another species of *Jatropha*. Scutellerid bugs have been observed as pests on *J. curcas* (Chitra & Dhyani 2006; Terren et al. 2012), and species like *Scutellera nobilis* Fabr. and *Chrysocoris purpureus* (Westw.) are also reported as pests on *J. nana* (Kulkarni et al. 2009). A significant percentage (22 eggs out of total 30 eggs = 73%) of parasitism on eggs on field was observed in the present case. Thus, *T. jatrophae* serves as a natural biocontrol agent against the pentatomid pests of *J. nana* analogous to the role for *J. curcas*.

Till date, *T. jatrophae* has been reported only from the type locality in Tamil Nadu (Rajmohana et al. 2011). Occurrence of *T. jatrophae* in Pune City also forms a new distribution record (almost 900km away from the type locality and first record for the state). Further studies on the ecology of this recently described, poorly known species are essential due to its role as a natural biocontrol agent.

Image 2. *Trissolcus jatrophae* Female recorded in the present study.

References

Ambika, S., T. Manoharan, J. Stanley & G. Preetha (2007). Scutellerid pests of *Jatropha* and their management. *Annals of Plant Protection Sciences* 15(2): 370–375.

Champion, H.G. & S.K. Seth (1968). *A revised survey of the forest types of India*. Government of India publication, Delhi, 404pp.

Chitra, S. & S.K. Dhyani (2006). Insect pests of *Jatropha curcas* L. and the potential for their management. *Current Science* 91(2): 162–163.

Johnson, N.F. (1991). Revision of Australasian *Trissolcus* species (Hymenoptera: Scelionidae). *Invertebrate Taxonomy* 5(1): 211–239.

Joshi, V.N. & M.S. Kumbhojkar (1997). Floristic study on Vetal Hill and its adjacent hills in greater Pune area. *Journal of Economic and Taxonomic Botany* 21(3): 501–524.

Kulkarni, D.K., R. Bhagat & H.V. Ghate (2009). Occurrence of Pentatomoid bug on *Jatropha nana* Dalz. *Indian Journal of Tropical Biodiversity* 17(1): 125–126.

Mani, M.S. & S.K. Sharma (1982). Proctotrupoidae (Hymenoptera) from India. A review. *Oriental Insects* 16: 135-258.

Mishra, D.K. & N.P. Singh (2001). *Endemic and Threatened Plants of Maharashtra*. Botanical Survey of India, Calcutta, 414pp.

Nixon, G.E.J. (1935). A revision of the African Telenominae (Proctotrupoidea, fam. Scelionidae). *Transactions of the Royal Entomological Society of London* 83: 73–103.

Rajmohana, K. (2006). A checklist of Scelionidae (Platygastroidea: Hymenoptera) from India. *Zoo's Print Journal* 21(12): 2506–2513; http://dx.doi.org/10.11609/JoTT.ZPJ.1570.2506-13

Rajmohana, K. & T.C. Narendran (2007). A systematic note on the genus *Trissolcus* Ashmead (Hymenoptera: Scelionidae) with a key to its species from India. *Records of Zoological Survey of India* 107(3): 101–103.

Rajmohana, K., T.C. Narendran & T. Manoharan (2011). A new species of *Trissolcus* (Hymenoptera: Platygastridae): egg parasitoid of *Scutellera nobilis* Fabricius (Hemiptera: Scutelleridae) on *Jatropha curcas* Linnaeus (Euphorbiaceae) in India. *Hexapoda* 18(2): 106–110.

Singh, N.P., S. Karthikeyan, P. Lakshminarasimhan & P.V. Prasanna (2001). *Flora of Maharashtra State - Dicotyledons - Vol. 2*. Botanical Survey of India, Calcutta, 1080pp.

Terren, M., J. Mignon, C. Declerck, H. Jijakli, S. Savery, P. Jacquet de Haveskercke, S. Winandy & G. Mergeai (2012). Principal disease and Insect pests of *Jatropha curcas* L. in the lower valley of the Senegal River. *Tropicultura* 30(4): 222–229.

Yang, Z.Q., Y.X. Yao, L.F. Qiu & Z.X. Li (2009). A new species of *Trissolcus* (Hymenoptera: Scelionidae) parasitizing eggs of *Halyomorpha halys* (Heteroptera: Pentatomidae) in China with comments on its biology. *Annals of the Entomological Society of America* 102(1): 39–47.