Journal of Threatened Taxa | www.threatenedtaxa.org | 26 June 2015 | 7(8): 7490–7492

ISSN 0974-7907 (Online)
ISSN 0974-7893 (Print)

OPEN ACCESS

A case of extensive congregation of Man-faced Stink Bug *Catacanthus incarnatus* (Drury) (Hemiptera: Pentatomidae) together with new host records from western Maharashtra, India

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The bugs are chosen as indicators for insect studies as they are an ecologically diverse group, including phytophagus and zoophagus species (Dolling 1991). Many species of bugs are found in aggregation because pheromones induce aggregation or congregation of insects for protection, reproduction and feeding or a combination of all (Kumar & Bajpai 2007).

Man-faced Stink Bug *Catacanthus incarnatus* is a common stink bug belonging to the subfamily Pentatominae of the family Pentatomidae and is widely distributed in India and Pakistan (Distant 1902). During the entomological survey at Rangana Fort, Kolhapur, Maharashtra (16^{0}04.855N & 73^{0}50.603E), northern Western Ghats (Fig. 1) on 29 May 2014, an extensive congregation of Man-faced Stink Bug *Catacanthus incarnatus* (Drury) on four different plant species, viz., *Ixora brachiata, Memecylon umbellatum, Glochidion ellipticum* and *Olea dioica* (Images 1,2) was noticed. Among these four plants, the population of *I. brachiata* was denser than the other three species in the area of 200m^2. The *I. brachiata* and *G. ellipticum* are endemic to Western Ghats (http://www.biotik.org/india/species/i/ixorbrac/ixorbrac_en.html accessed on 27 November 2014; www.biotik.org/india/species/g/glocelli/glocelli-en.html accessed on 27 November 2014). The maximum height of plants was about 3.5m and minimum was about 1.2m. It was noticed that the taller plants were more preferred for congregation rather than dwarf plants. The egg mass of *C. incarnatus* containing 198 eggs was found on the lower side of an *I. brachiata* leaf (Image 3). Most of the eggs were ready to hatch and some had already hatched. The nymphs as well as adults were actively feeding on the fruits of *I. brachiata* and rachis of leaves of all the plants. Most of the bugs observed on plants were adults and about 15% were nymphs. Many of the live adults were also

Catacanthus incarnatus
Man-faced Stink Bug

DOI: http://dx.doi.org/10.11609/JoTT.o4100.7490-2 | **ZooBank:** urn:lsid:zoobank.org:pub:ED2AFED5-43A1-49EF-91A2-F90D99BFF21A

Editor: R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, India. **Date of publication:** 26 June 2015 (online & print)

Manuscript details: Ms # o4100 | Received 15 July 2014 | Final received 04 December 2014 | Finally accepted 16 May 2015

Citation: Waghmare, S.H., G.P. Bhawane, Y.J. Koli & S.M. Gaikwad (2015). A case of extensive congregation of Man-faced Stink Bug *Catacanthus incarnatus* (Drury) (Hemiptera: Pentatomidae) together with new host records from western Maharashtra, India. *Journal of Threatened Taxa* 7(8): 7490–7492; http://dx.doi.org/10.11609/JoTT.o4100.7490-2

Funding: U.G.C., DRS-SAP I, New Delhi.

Competing interests: The authors declare no competing interests.

Acknowledgements: Authors are thankful to Head, Department of Zoology, Shivaji University, Kolhapur for facilities and encouragement and Dr. R.M. Sharma, Zoological Survey of India, Pune. We are also grateful to U.G.C., DRS-SAP I, New Delhi for financial assistance for field work.

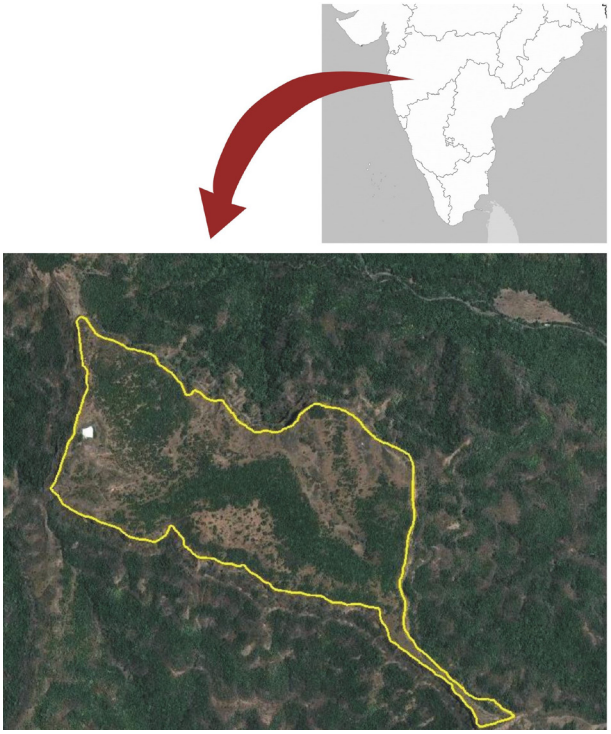

Figure 1. The study site, Rangana, Maharashtra, India (Source: Google Maps)

Image 1. Aggregation of *Catacanthus incarnatus* - adults on *I. brachiata*

Image 2. Aggregation of *Catacanthus incarnatus* - nymphs on *I. brachiata*

observed on the ground below the tree. In the area of 200m^2, 38, two, five and two individuals of *I. brachiata, M. umbellatum, G. ellipticum* and *O. dioica* respectively were recorded. *A* huge congregation of *C. incarnatus* was observed on *I. brachiata* while the remaining three plant species had comparatively fewer individuals.

The maximum population of *C. incarnatus* was observed on 38 plants of *I. brachiata* (941 individuals) while on two plants of *M. umbellatum,* five plants of *G. ellipticum* and two plants of *O. dioica* observed individuals of *C. incarnatus* were 13, 50 and 18 respectively. The total number of individuals of *C. incarnatus* counted on 47 plants of all four species was 1022. The range of *C. incarnatus* individuals per plant was 2–94. Recently, Mamlayya & Aland (2012) reported aggregation of approximately 400–500 bugs on a single branch of *Delonix regia* in Kolhapur, Maharashtra. Bhat & Srikumar (2013) recorded about 300 bugs on a single cashew tree in Puttur region of Karnataka. However, in the present study the stink bugs were spread on leaves and fruits of an entire tree in groups of 4–6 only but not in clusters as mentioned by Joshi et al. (2011) for *Cyclopelta*, Mamlayya & Aland (2012) and Bhat & Srikumar (2013) for *Catacanthus*. In *C. incarnatus* three color morphs red, yellow and cream were noticed on *I. brachiata* while on other plant species only red colored bugs were encountered (Images 4–6). However, Bhat & Srikumar (2013) noticed four color morphs in this bug viz., red, orange, yellow, dark and creamy yellow. As far as population of color morphs go 792 red, 38 yellow and 111 cream colored individuals were recorded.

Distant (1902) recorded *C. incarnatus* from Mumbai (Bombay) only from Maharashtra, which is 14m above msl. This species is also reported by Mamlayya & Aland (2012) from Kolhapur about 545m above msl and Bhat & Srikumar (2013) found those in Puttur, Karnataka at 87m. Now this species shows the highest elevation from the previously recorded elevations for its habitat as it is recorded from Rangana Fort which is 792m. According to earlier reports the host plants of the *C. incarnatus* are *Anacardium occidentale* (Sundararaju 1984; Bhat & Srikumar, 2013) and *Delonix regia* (Mamlayya & Aland 2012). The present study adds four new host plants for *C. incarnatus*: viz., *I. brachiata, M. umbellatum, G. ellipticum* and *O. dioica* from Western Maharashtra, northern Western Ghats.

Image 3. Eggs of *Catacanthus incarnatus*

Image 4. Red *Catacanthus incarnatus*

Image 5. Grey *Catacanthus incarnatus*

Image 6. Yellow *Catacanthus incarnatus*

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