



## FIRST REPORT OF *ACANTHOCORIS SCABRATOR* (COREIDAE) AS A PEST OF VEGETABLES IN INDIA

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### ABSTRACT

In this study, a coreid bug *Acanthocoris scabrator* (Heteroptera: Coreidae) is reported as a pest of *Capsicum annum*, *C. frutescens*, *Ipomoea aquatica*, *I. batatas* and *Solanum melongena* from Kerala, India. No acute symptoms such as drying up or wilting was observed either on *Solanum melongena* or *Capsicum* spp.; however, on *I. aquatica* and *I. batatas*, water-soaked lesions were observed around the feeding punctures on the tender stem. This is a new record of this pest from Andaman and Nicobar Islands.

**Key words:** *Acanthocoris scabrator*, Coreidae, host plants, *Capsicum annum*, *Capsicum frutescens*, *Ipomoea aquatica*, *Ipomoea batatas*, *Solanum melongena*, Andaman Islands, new record, Kerala, vegetables, pest

*Acanthocoris scabrator* (Heteroptera: Coreidae) was described by Fabricius in 1803 based on specimens from Malaysia and Sumatra. It is widely distributed in the Oriental region and adjoining areas such as Sri Lanka, India, Myanmar, Malaysia, Indonesia, the Philippines, south China and Japan (Distant, 1902; Hoffman, 1928; Dolling, 2006). Dolling (2006) opined that “records of *Acanthocoris scabrator* from China are possibly erroneous and referable to *Acanthocoris scaber* if the species are truly distinct.” Plants reported as host for *A. scabrator* include *Punica granatum* L. in Japan (Hoffman, 1928); *Capsicum annum* L., *Capsicum* sp., *Cestrum nocturnum* L., *Cucurbita maxima* Duschene, *Ipomoea* sp. (morning glory), *Physalis peruviana* L., *Solanum melongena* L., *Solanum nigrum* L. and *S. torvum* in China (Hoffman, 1931); *S. aculeatissifolium* Jack (?*Solanum aculeatissimum* Jacq.) (Miller, 1931), *I. palmata* Forsk., *I. batatas* Lam. (Miller, 1931, 1932) and *Vigna unguiculata* (L.) Walp. (Cowpea) (Miller, 1932) in Malaysia; and *Lantana* (Rao, 1920), *I. carnea* Jacq. and *Mangifera indica* L. (Koshy et al., 1977, 1978) in India. Biology of the insect was studied by Hoffman (1928) in China, Miller (1931) in Malaysia and Koshy et al. (1977) in India. Herein, this coreid is reported as a pest on vegetables from Kerala for the first time in India.

### MATERIALS AND METHODS

Infestation of *A. scabrator* on different species of vegetables was observed by the first author in 2012 in

Kerala, India. The insect was identified based on the description provided by Distant (1902). This was further confirmed based on the images of a syntype. Specimens of *A. scabrator* were collected from different states in mainland India as well as the Andaman & Nicobar Islands. Symptoms and nature of damage due to the pest were recorded on different vegetable crops. Intensity of infestation was recorded on *Capsicum annum* at Manacaud, Trivandrum, Kerala in 2020. Voucher specimens of the bug are deposited in the Travancore Insect Collection, College of Agriculture, Vellayani, University of Agricultural Sciences, Bengaluru (UASB) and the National Bureau of Agriculturally Important Insects (NBAIR), Bengaluru (Accession no. NBAIR/HET-COR/5121 to NBAIR/HET-COR/5125). Plant vouchers of *C. annum* (Accession no. 6761), *C. frutescens* L. (Accession no. 6760), *I. aquatica* Forssk. (Accession no. 7017, 7018) and *S. torvum* (Accession no. 6473) are deposited in the Calicut University Herbarium.

### RESULTS AND DISCUSSION

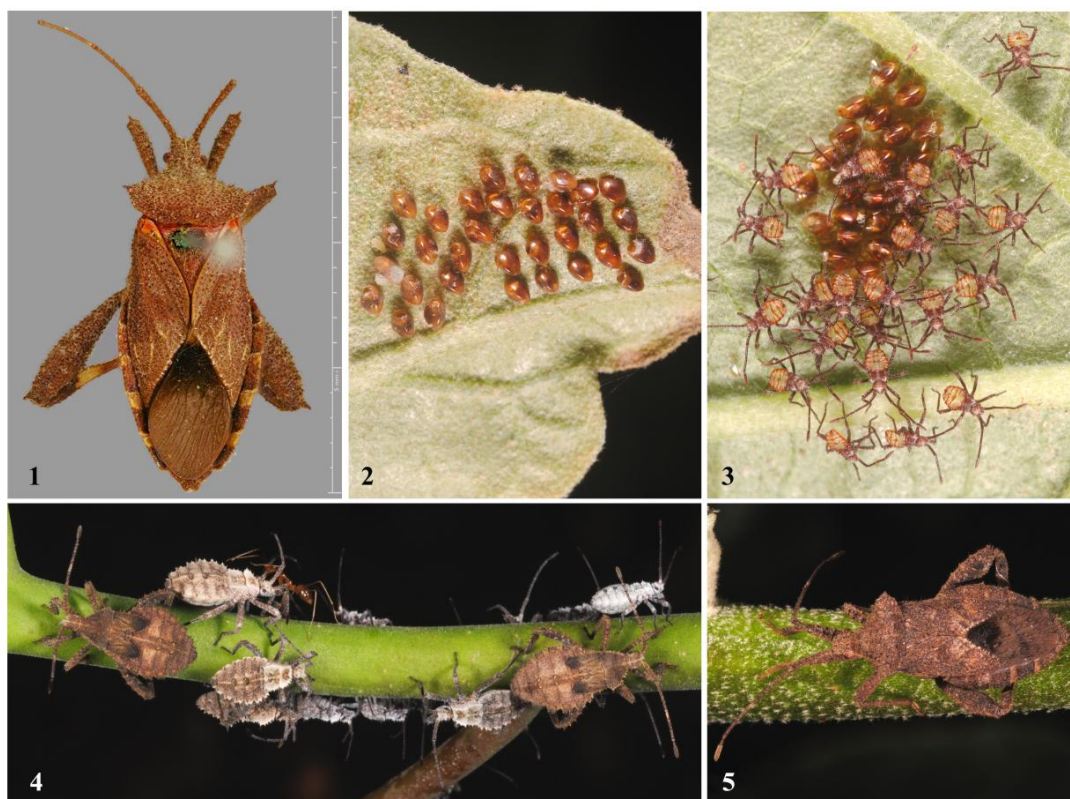
Infestation of *A. scabrator* was observed on brinjal *S. melongena*, chilli *C. annum*, Tabasco Pepper (Cayenne pepper) *C. frutescens* L., sweet potato *I. batatas* and water spinach *I. aquatica* in Kerala, south India. Infestation on *C. annum* and *C. frutescens* has been noticed at Tirurangadi (N 11° 02' 14.3" E 75° 55' 27.8"), Kerala since 2012. Heavy population of the bug was

observed on brinjal at Malayinkeezhu in Trivandrum ( $8^{\circ} 30' 34.8''$  N  $76^{\circ} 59' 48.5''$  E) in April 2018. On 25 May 2020, *A. scabrator* was observed on *C. annuum* at Manacaud in Trivandrum District ( $8^{\circ} 27' 32.62572''$  N  $76^{\circ} 56' 51.02664''$  E). Infestation was observed on six plants of *C. annuum* ranging from 5 to 27 adults and nymphs (mean 15.3). The maximum infestation observed on a plant was 9 adults and 18 nymphs. Bugs were also collected on *I. carnea* at Tirurangadi ( $11^{\circ} 02' 14.3''$  N  $75^{\circ} 55' 27.8''$  E) and on *S. torvum* Sw. at Pampadumpara ( $9^{\circ} 48' 23.7''$  N  $77^{\circ} 10' 04.9''$  E). The bug was observed breeding on *I. batatas* and *I. aquatica* at Vellayani ( $8^{\circ} 25' 47.5''$  N  $76^{\circ} 59' 8.3''$  E). A single specimen was collected in the Little Andaman Island, Andaman and Nicobar Islands ( $10^{\circ} 41' 47.0''$  N  $92^{\circ} 33' 25.8''$  E, 56 m). Specimens have also been collected from Karnataka in South India and Arunachal Pradesh and Manipur in northeast India.

Adults and nymphs congregated on the stem and sucked sap. (Fig. 1-5). Apparently, no acute symptom, such as drying up or wilting, was observed on either brinjal or chillies. On *I. aquatica* and *I. batatas*, water-soaked lesions were observed around the feeding punctures on the tender stem. *Acanthocoris scabrator* is

known as a pest of *S. melongena* and *Capsicum annuum* in China and *I. batatas* in Malaysia, however, this is the first report of the bug on these vegetables in India. This is also the first ever record of *A. scabrator* on *C. frutescens*, and *I. aquatica*. Chen (1983) reported the closely related *A. scaber* (L.) on *C. frutescens* in China. Presence of the bug in the Andaman and Nicobar Islands is recorded for the first time.

**Material examined:** India. Kerala: 1♂, 3♀ Vellayani,  $8^{\circ} 25' 47.5''$  N  $76^{\circ} 59' 8.3''$  E, 27.viii.2018, Prathapan & Sangamesh Coll., Ex *Ipomoea* sp.; 1♀, same data except host *Ipomoea batatas*; 5♂, 9♀ Malayinkeezhu,  $8^{\circ} 30' 34.8''$  N  $76^{\circ} 59' 48.5''$  E, 28.iv.2018, SR Hiremath & Prathapan, Ex Brinjal; 2♂, 2♀ same data except host Chilli; 2♂, 2♀ Pampadumpara, 24.x.2015, Prathapan KD Coll., Ex *Solanum torvum*; 1♂ same data except host *Ipomoea*; 1♂, 2♀ same data without host (sweep net); 1♂, 2♀ Chittur,  $10^{\circ} 41' 19.1''$  N  $76^{\circ} 43' 25.1''$  E, 15.v.2018 112 m, Shameem KM Coll., Ex *Ipomoea carnea*; 2♂, 1♀ Tirurangadi, 28.ix.2012, Shameem K Coll., Ex Chilli; 2♀ same data except date 19.x.2012; 2♂, 1♀ same data except date 1.xi.2012; 1♀ same data except date 20.xi.2012; 3♂ same data except date 29.xi.2013; 1♀



Figs. 1-5. *Acanthocoris scabrator*. 1. Syntype (Natural History Museum, London), 2. Mass of eggs and hatched out egg shells, 3. early instar nymphs, 4. nymphs congregated for feeding, 5. adult

same data except date and host 13.xii.2012, *Ipomoea* sp.; 2♂, 1♀ Tirurangadi, N 11° 02' 14.3", E 75° 55' 27.8", 14.xii.2014, Prathapan & Shameem Coll., Ex. *Ipomoea carnea*; Karnataka: 1♂ Bangalore, GKVK, N 13°04'36.18" E77°34'41.79", SR Hiremath Coll.; Manipur: 1♂, 1♀ Churachandpur, Ngalo Falls, N 24° 19' 53.7", E 93° 38' 47.7" 1148 m, 18.viii.2014, Prathapan & Shameem Coll.; 1♀ Keibul Lamjao N.P., N 24° 28' 47.4", E 93° 48' 29.7" 774 m, 20.viii.2014, Prathapan & Shameem Coll.; 1♂ Pallel, Saivom, N 24° 23.506', E 94° 05.200' 1387 m, 21.viii.2014, Prathapan & Shameem Coll.; Arunachal Pradesh: 1♀ Kebali, N 28° 11' 56.0", E 95° 48' 48.0", 783 m, 10.ix.2014 Prathapan KD Coll.; Andaman & Nicobar Islands: 1♂ Little Andaman, VK Pur, N 10° 41' 47.0", E 92° 33' 25.8" 56 m, 30.iv.2014, Prathapan KD Coll.

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#### AUTHOR CONTRIBUTION STATEMENT

KMS first observed the pest; collected specimens, made biological observations, preparation of the

manuscript; SRH collected specimens, prepared plate, gathered biological data; writing up of the manuscript; KDP identified the insect, collected specimens, made observations; writing up of the manuscript.

#### CONFLICT OF INTEREST

Authors declare no conflict of interest.

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