SHORT NOTE

Occurrence of *Stromatium barbatum* (Fabr.) (Coleoptera: Cerambycidae) on grapevine in Maharashtra, India

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Grape is an important deciduous, temperate crop, extensively grown in the peninsular India. The major grape growing regions in India are Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu and the north-western regions covering Punjab, Haryana, Delhi, Western Uttar Pradesh, Rajasthan and Madhya Pradesh. Maharashtra occupies the largest area (0.46 lakh ha) and highest production (1290 thousand Mt). In India, grape is utilized in various forms like table grapes, raisins, wine and juice. Due to its scrupulous nature, several pests and diseases are attracted to the crop. Among the various insect pests reported, mealy bugs, thrips, mites, stem borer attribute substantial loss to the crop both in terms of quantity as well as quality. Stem borer is one among the pests which assumed a serious pest status in the recent past and turned out to be one of the limiting factors in grape cultivation. The grubs of *Coelosterna scabrata* Fabr. (Coleoptera: Cerambycidae) are the commonly occurring stem borer in grapes (Ranga Rao et al., 1979). Adults of *C. scabrata* are 2.0-4.0 cm long with mottled grey elytra and a small projecting spine on metathorax. Nair (2007) reported *C. scabrata* infesting the live wood of *Acacia nilotica* and the management strategies for the same were outlined by Jagginavar et al. (2008). *Stromatium barbatum* (Fabr.), a polyphagous pest, damaging the wood of about 350 tree species, has been found infesting *Prosopis cineraria* in western Rajasthan (Parihar and Singh, 1993). Many of the previous workers (Nair, 2007) were doubtful about *S. barbatum* infesting live green trees. It makes square shaped holes in dry bamboos and damages wooden boxes and packing cases in the godowns of museum. The pest is reported from Australia, Europe, Northern Asia, South and South-East Asia, India and New Zealand from various forest trees (Walker, 2007, http://www.padil.gov.au/viewPest.aspx?id=95).

Four vineyards in Sangli, Solapur and Pune regions of Maharashtra were surveyed for the grapevine pests. A few grapevines showing typical signs of borerholes with powdery deposits and chlorosis of the foliage were examined for the presence of beetles. The beetles were collected by cutting open the affected cordons or the trunk. In many vines more than one larva were seen in different instars. Moreover, beetles were also found resting under the loose bark of vines. Collected beetles were killed by using ethyl acetate and preserved in wooden boxes. Specimens were identified by Dr. Hemanth Ghate, Professor of Modern College of Arts, Science and Commerce, Pune.

Surveys across the grape vineyards in some regions of Maharashtra revealed the presence of the common bamboo stem borer, *Stromatium barbatum* Fabr. on grapevine apart from the existing stem borer species, *Coelosterna scabrata* Fabr. There was a wide range of variability with respect to body size and antenna length in the collected specimens of *S. barbatum*. Adults (Fig.1) were reddish brown to brownish black with tawny pubescence covering all over the body including face, legs and antennae. Antennae are 11-segmented. Adult body length was $2.12 \pm 0.44$ cm (excluding antennae) and $4.73 \pm 0.84$ cm (including antennae). Males can be distinguished from females by the presence of tomentose depression on the pronotum (Fig. 5), strongly rounded or protuberant lateral margins of pronotum (Fig. 6) and antennae 1.3 times longer than the body. In females antennae are shorter or scarcely longer than the body and are devoid of the tomentose depression on the pronotum. Head densely and rather coarsely punctured above and at sides. Elytra coarsely and densely punctured, each with a sutural tooth at apex.

Adults were active during June-July especially in the beginning of rainy season and a few were collected even during September. Gravid female laid eggs in small cracks and crevices on the bark of the main trunk as well as cords with diameter exceeding 2-2.5 cm of the plant. Eggs (Fig. 2) were white, spindle shaped with both the ends slightly pointed, 2.4-3 mm long and 1-1.2 mm wide. Grubs hatch out of the eggs after 7-10 days of incubation. Newly hatched grubs are pale white in colour with brown mandibles and 2-3 mm in size. The full grown grub (Fig. 3) was whitish yellow or cream in colour, thick set, 3-3.5 cm in length with brown head and black mandibles; pale brown thorax, broader than
the rest of the body segments. The grubs made winding tunnels by boring their way inside the wood. The tunnels were tightly packed with fine floury wood dust and excreta (Fig. 4), which hampers the translocation of nutrients and in turn seriously reduces the bearing capacity or leading to complete drying of the affected cordon. The gnawing sound could be heard in the plantations where the infestation is severe. Pupation occurred inside the tunnel. The adults came out of the plants by making oval or near rectangular holes. The number of holes in one vine varied from 4-8 or even more than 8 occasionally. Presence of more than one larva was observed in all the examined cases.

Adult of Coelosterna scabrata Fabr. (Fig. 7) was greyish yellow with body size ranging from 2.5-3.5 cm. Nodes of antennal joints were black in colour. Elytra were yellowish grey set with a large number of black spots varying in size. Outer and inner margins of elytra each ends in small tooth at the apex; the tooth of the outer margin is prominent in males where as it is slightly blunt in females. Head is channelled with black line on the vertex and the pronotum with a prominent lateral median spine on each side. Females are comparatively larger than males. The adults of C. scabrata tunnel into roots as well as the lower portion of the stem and can injure the plants by stripping the bark also, whereas grubs are the only injurious stage in case of S. barbatum. Presence of pellet form excreta in and around vine or the supporting stalk along with presence of round holes on the trunk is a clear indication of the shows the grub activity of C. scabrata. For facilitating the easy up and down movement inside the tunnel, the grub keeps it free from wood dust and excreta. Hence by the use of chemicals with fumigant action inside the tunnel makes its management easier compared to S. barbatum where the tunnels are tightly packed with woody powder making the penetration of chemicals difficult.

Contrary to the previous reports that S. barbatum infests only dead woods of trees, we found them feeding on the live green vines of grapes in addition to the dead vine parts. As previously mentioned in the text that the insects were found feeding on the dried bamboos, this may be one of the possible routes of entry of this pest into the grapevine ecosystem because bamboo poles are used in grapevine orchards as one of the supporting structures to vines especially during the initial years of its establishment. We also cannot neglect the other possible ways for the entry of this pest like from the furniture shops spreading across various grape growing regions and of course, several forest tree species which can act as alternate hosts for this pests. Coelosterna scabrata commonly known as the babul root borer was also found to infest forest trees belonging to various families, viz., Casuarinaceae, Dipterocarpaceae, Leguminosae, Rhamnaceae, Verbenaceae, Myrtaceae etc. (Choudhuri, 1963). So it is evident that forest trees act
as alternate hosts for many of these stem borer species. Under favourable conditions, they may be migrating to cultivated crops of agricultural importance and also use of deforested land for cultivation automatically favours this pest to switch their hosts. Further research is in progress on the bio ecology and pest status of this stem borer species, which is a new report on grapevine.

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REFERENCES


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