Morphological Notes on *Oncideres cingulata* and *Prionus imbricornis* (Coleopteran: Cerambycidae): The Two Insect Pests of *Morus* species

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Abstract
Twig girdler, *Oncideres cingulate* and tile horned prionus, *Prionus imbricornis* are polyphagous beetles causing serious damage to mulberry plants in Jammu and Kashmir. The damage caused by larval forms of the two species goes unnoticed due to their concealing nature and nocturnal behavior of adults adds up to the problem . The beetles were reported for the first time in Jammu and Kashmir state and as such taxonomic notes and related aspects are reported here.
Keywords*:* Morphological notes, tile horned prionus, twig girdler

Introduction

Cerambycid beetles form an important group of wood boring insects attacking healthy, weak, stressed and dead host trees (Hanks, 1999). Most species of the family are polyphagous pests and cosmopolitan in distribution causing wide spread mortality among host tree species (Linsley, 1959). Twig girdler, *O. cingulata* and the Prionine species is polyphagous pest attacking living, stressed and dead tissues of apple, pear, peach, plum, oak, acacia and many deciduous trees (Bilsing, 1916; Payne *et al*., 1970; Hovore *et al*, 1987; Solomon, 1995).

Mulberry plants provide the sole food material for the silkworm, *Bombyx mori*, are prone to attack by a large number of insect pests. In order to record the insect pest complex of mulberry plants in Jammu and Kashmir state, monthly surveys were carried out during which a number of insects species were reported to infest mulberry plants including twig girdler and tile horned prionus. Since these two species were reported for the first time in the study area, so it is imperative to report their taxonomic notes and related aspects preliminarily.

Description

1. Oncideres cingulata Say

Oncideres cingulate, commomly called twig girdler, is a medium size longicorn beetle measuring 12 mm to19 mm in length from head to tip of elytra. Adults are cylindrical, grayish brown in colour with broad ash grey band across middle of elytra (**Figure 1**). Basal part of the elytra is darker than rest of it. Body covered with brownish gray hair which is denser on ventral side of abdomen. Head hypognathous type with prominent mouth parts; mandibles black in colour, adopted for girdling the host tissues; labium and labrum reddish brown. Antennae extend slightly beyond tip of elytra in males and are shorter in females, reach up to $3/4^{th}$ of elytra. Pronotum with a row of black dots on dorsal side and lateral sides project into a small sharp spine. Elytra cover the whole abdomen in both sexes. Femur, tibia and tarsal joints clothed with dense gray pubescence.

Twig girdler is restricted to Baramulla district in Jammu and Kashmir state. It is a member of wood borer complex infesting a large number of woody hosts including mulberry trees. Adults emerge in middle of July through late September. The beetles lay eggs in the crevices or gnawed egg niches on the surface of host tissues. The eggs hatch in about 10 days and the grubs bore into the heart wood, excavate oval tunnels. They fill the feeding tunnels

with fecal pellets and chewed wood fibers. Grubs pupate in the pupal cells in the host tree and adults emerged through a round emergence holes.

***2. Prionus imbricornis* Linnaeus**

Prionus imbricornis, commonly called tile horned prionus, is a root borer infesting dead tissues of host plants. It is distributed in Jammu and Kathua districts of Jammu and Kashmir. The beetles are shiny dark reddish brown in colour with robust body averaging 34 cm in length (**Figure 2**). Head short, concave in front, depressed between the eyes; mandibles stout and short, vertical, abruptly incurved and acute at the tip; in males antenna extend to middle of elytra while in females antenna reach up to one third of elytra. Eyes large, lower lobes approximated to the base of the mandibles in front. Pronotum convex and is much broader than length, depressed along lateral margins, provided with three spines or teeth on each side; anterior and median teeth/spines prominent and blunt. Elytra cover the abdomen completely in males while in females, it project beyond the tip of elytra. Legs stout and moderately long, laterally compressed; tarsi four segmented. Thorax on ventral side thickly covered with long brownish hairs, shorter hairs of the same colour being less thickly spread on the tarsi and tibiae; abdomen with very short, sparsely scattered hairs.

P. imbricornis adults emerge from June to September. They are nocturnal and hide during the day time beneath debris around the base of host trees. The beetles coupulate soon after emergence without any courtship behaviour. Females deposite eggs in soil in the premises of their larval hosts. The young grubs fed on the bark of dead roots before boring in the heartwood. The grubs completely hollow out roots during its development .the insect species pupate in the soil about 10 cm below the soil surface in an oval pupal cell, constructed by the pupating grub. The beetle completes its life cycle in 2-3 years.

The grubs are exclusively root feeders and to verify the presence of borers, one must excavate or expose the larger roots. Excavated roots have burrows and large oval holes in the root collar and roots. Large galleries were often packed with frass-chewed wood and fecal pallets. The grubs attack only the dead host tissues and uprooting and subsequent destruction of harbouring grubs are the best means to control the population of the tile horned longicorn beetle.

Figure 1: *Oncideres cingulate*

Figure 2: *Prionus imbricornis*

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