

Short Communication

***Protaetia terrosa* (Cetoniidae: Coleoptera) Beetles Attacking Roots of Clusterbean (*Cyamopsis tetragonoloba*)**

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Cetoniids have wide adaptability and variations on account of late evolution. In the large and polymorphic genus *Protaetia*, a wide variability with regards to habits and foods exists. Lefroy (cf. Arrow, 1925) recorded *P. alboguttata* from the roots of *Ficus religiosa* and *Panicum spontaneum*. Adults of various *Protaetia* spp. attack the ears of millet in Rajasthan and Gujarat and *P. cineraria* (Kraatz) damage the leaves, shoots and flowers of vegetables in Karnataka. *P. neglecta* adults feed on the leaves and fruits of apple and peach (Nair, 1986). Very little is known about diversities and capabilities of adult cetoniids causing damage to crops.

Since 1992, the cetoniid beetles *Protaetia terrosa* (Gory and Percheron) have been observed to cause extensive damage to the roots of clusterbean (*Cyamopsis tetragonoloba*). The beetles are lustrous black in colour with a slight greenish hue. Elytra have dirty white dorso-lateral speckled bands along outer margins and white specks on thorax. Ventral metathorax has a transverse dirty white band. The beetles are described by Arrow (1925).

The damage was first observed at the Central Arid Zone Research Institute, Jodhpur, in an experimental crop grown in 10-row

plots (3m x 1.5m). The attacked plants developed symptoms of wilting and drying. The damage by termites or root grubs was ruled out. The soil around the base of the affected plants appeared to have been worked in around 2.2-2.7 cm radius. In the vicinity of each plant, 1-3 emergence holes (0.6 to 0.8 cm dia.) were found. The damaged plants could easily be pulled out of the soil, roots showed little or no laterals. The terminal parts of the tap root showed nibbling along about 4 cm long run. The beetles remained in the rhizosphere during night time and up to about 10.00 A.M. These could be flushed out by giving flood irrigation to the crop. The beetles forced out of the soil climbed on the plants and after recession of water, re-entered the soil.

Observations were recorded on the activity and behaviour of *P. terrosa* at CAZRI, Jodhpur during September - October 1992. Below the infested surviving plants, 2 to 6 (av. 4.4) beetles were found (Table 1) at a depth of 2.5 to 3.0 cm, either clinging to, or lying in repose, in the vicinity of the roots of clusterbean. The beetles were collected and kept in a covered battery jar containing moist soil. Captive adults remained motionless, buried into the soil and became active at around

Table 1. Mean plant mortality and number of *Protaetia terrosa* beetles under infested surviving plants of clusterbean (*Cyamopsis tetragonoloba*)

Row No.	*Plant mortality (%)	Beetles plant ⁻¹
1	13.33	6
2	20.00	2
3	26.66	4
4	40.00	5
5	40.00	6
6	40.00	5
7	20.00	3
8	40.00	4
9	26.66	6
10	20.00	3
Total	286.66	44
Mean	28.66	4.4

*Out of 15 plants row⁻¹

9 P.M. The beetles were not phototropic and were not attracted to light. Captive adults did some nibbling on the green leaves of clusterbean offered as food. The captive adults, under starvation survived for 15 days. The beetles are known to have a high longevity of several months.

In nature, the adults are active only during day time. They emerge from soil fairly late after sunrise, sometimes after 10 A.M., by making fresh emergence holes if the previous ones are covered up. When disturbed, beetles feign death and show no sign of movement for 20 to 50 seconds in bright sunshine. In shade, the disturbed beetles remain motionless for 2 to 5 minutes.

They are good fliers and can take long continuous flights, remaining air borne for as long as 5 minutes during mid day in grasslands of *Cenchrus ciliaris*. The beetles in flight are usually seen up to third week of September. Grasslands in arid region constitute major niche for various root grubs during July - September. After a flight, beetles were also seen to alight on the plants of jujube (*Ziziphus mauritiana*). A beetle was seen entering soil near the roots of egg plant (*Solanum melongena*). Earlier, *P. terrosa* adults were reported damaging the flowers of cotton (Arrow, 1925).

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