

Short Communication

Incidence of Phadka Grasshopper, *Hieroglyphus nigrorepletus*, in Western Rajasthan and its Night Swarming

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Hieroglyphus nigrorepletus is a widely distributed rainy season grasshopper which prefers swamps and irrigated lands (Uvarov, 1977). In Rajasthan, it is common in humid and subhumid districts, and reported to occur in the districts of Ajmer, Alwar, Banswara, Bharatpur, Jaipur, Jalore, Pali, Sirohi, and Udaipur, especially in sorghum and maize growing areas. Pradhan and Peswani (1961) observed the survival of the eggs of *H. nigrorepletus* without rains up to three years, and ruled out the possibility of its incidence in desert regions. However, Bhatia *et al.* (1964) recorded it in the desert regions at Bikaner (28°0'N, 73°18'E) and Kolayatji (27°86'N, 72°58'E) in Rajasthan and in Kutch district of Gujarat. Roonwal (1976) studied the abundance and biology of *H. nigrorepletus* in arid Rajasthan and confirmed the brown form of adults as the most common. Our surveys undertaken during 1978-1986 established that in the arid western Rajasthan, *H. nigrorepletus* is the only species prevalent, whereas *H. banian* is more prevalent in southern districts such as Udaipur, Chittorgarh and Banswara.

In 1994, massive night swarming of *H. nigrorepletus* was noted around Pali (24°46'N, 73°16'E; av. annual precipitation 490 mm; temperature range 7-46°C). The

swarm was mistaken by the local residents as a nocturnal migration of the desert locust, *Schistocerca gregaria* Forsk. The night swarming took place for six days during September, between 8 p.m. to 11 p.m., and caused great inconvenience to town dwellers. Hundreds and thousands of grasshoppers

dashed across the light posts, vehicles and within residential premises. Putting off the lights was the only remedial measure adopted within the houses, but the nuisance persisted in open due to road and street lights and the vehicular traffic was also affected. The driving was particularly difficult for two wheeler drivers who used no cover ups or helmets. In the late night and during dawn, the adults were found settled on bushy vegetation and garden plants, which showed signs of occasional nibbling. No preference of vegetation for settling could be inferred. Bhatia *et al.* (1964) observed the bushes of *Capparis decidua* and *Salvadora oleoides* heavily laden by *H. nigrorepletus*. Since 1993, *H. nigrorepletus* occurs massively and shows tendency of night aggregation of adults (Verma, 1999).

H. nigrorepletus is a phytophilic species, which rarely descends to ground. Gregarious tendency in *H. nigrorepletus* is not

common, except in ovipositing females. Phototaxy on lights appears to be not reported for this species. Occasional encountering of solitary adults of the desert locusts attracted to light in the night was observed up to the end of October. Ghouri and Ahmad (1960) reported the incidence of adults of *H. nigrorepletus* in Pakistan up to November. Nocturnal attraction of other species of grasshoppers to light is also known but the attraction of *H. nigrorepletus* is more common and night activity with short movements is well known. Swarming in *H. nigrorepletus* is known and it was earlier reported by Ghouri and Ahmad (1960) from Pakistan. Night swarming was not known in India, although Qadri (1971) reported a night swarm of unknown origin in 1969 at Thatta and Karachi in Pakistan. Uvarov (1977) noted that night flying was a typical behavior of non-swarving species, rather than of fully gregarious locusts. Only the macropterous adults of *H. nigrorepletus* formed swarms. The reasons of night swarming in *H. nigrorepletus* are not known. Biocontrol agents are not considered important to regulate the pest population (Roonwal, 1976). The sudden spurt in population could also be due to probable parthenogenesis reported in the related species, *H. banian* (Sujata and Rizvi, 1983). Abiotic factors like moisture tend to encourage aggregation (Nayak *et al.*, 1990). The probable cause of night swarming for this report could be the high population of macropterous adults in the middle of rainy season. As such, the brachypterous adults, reported to be dominant around Varanasi in Uttar Pradesh (Roonwal, 1945), were apparently not observed in the area during August. Usually, macropterous adults do

not exceed 5% of the adults (Bhatia *et al.*, 1964).

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