HISTORICAL RESUME

The gerbils have been described as 'antelope' rats (Wroughton, 1917; Prater, 1965), or 'Saltatorial' rats with long hind-feet and bushy tails (Tiwari and Biswas, 1969); and included in order Rodentia, sub-order Myomorpha, family Muridae and sub-family Gerbillinae (Ellerman, 1949; Morris, 1964). This Ethiopian sub-family comprises of ten or possibly twelve genera (Schwentker, 1963, 1968). Of them, the genus *Tatera*, or 'larger gerbil', includes 32 species found in South Asia and Africa (Wroughton, 1906; Thiessen and Yahr, 1977).

*Tatera indica* is an important species, widely distributed from Iran to India and Sri Lanka (Barnett and Prakash, 1975). Although several distinct races of this one species are recognized (Ellerman, 1949; Prater, 1965), these conclusions have also been greatly disputed (Barnett and Prakash, 1975). It is, however, quite distinct in body colouration, form and movement from sympatric species of other sub-family Murinae (Fitzwater and Prakash, 1973; Barnett and Prakash, 1975).

*T. indica*, has been found to avoid, almost uniformly, climatic extremes, whether xeric or humid (Parrack, 1967; Prakash, 1977). Perusal of literature also shows that it's distribution within the Indian Union roughly corresponds to
regions receiving low to moderate rainfall. Earlier assertions about its occurrence practically throughout India (Tiwari and Biswas, 1969), seem inaccurate. It is typically an inhabitant of arid regions, preferring dry or fallow land to irrigated crop fields (Prater, 1965). The latter are, however, raided for food (Rao, et al., 1977; Madsen, 1977).

That gerbils can greatly damage food crops over vast tracts of land has been repeatedly noticed in Karnataka (Blanford, 1888; Prasad, 1954). That prompted earlier investigations on it's natural history, food habits and propensity to hoard food (Prasad, 1954, 1954b). Since then, however, it's status as a pest has been reviewed in many parts of the country (Prakash, 1964, 1973, 1973b, 1973c, 1973d; Singh, et al., 1965; Batra, 1969; Sood and Ubi, 1977; Bindra and Sagar, 1977; Greaves, et al., 1977; Rajasekharan and Dharmaraju, 1977). The losses due to it, which show wide variation, have been estimated. However, more information on ecology of this species are required, not only to make more accurate estimates, but to control such losses (Barnett and Prakash, 1975).

However, the ecology of T. indica has largely been studied in a special environment, of Rajasthan desert (Prakash, 1962, 1968, 1974, 1977; Prakash, et al., 1971; Prakash and Rana, 1970, 1972, 1973). Informations gathered in other environments are very meagre. Thus, the gerbil has been stated to be highly adaptable (Barnett and Prakash, 1975), but this has not been
substantiated by studies of gerbils inhabiting north or south of the country. It is, however, possible to describe its biology in some detail.

Studies of food habits of gerbils show that they forage extensively; both plant and animal foods, or insects, are eaten (Prasad, 1954; Prakash, 1959, 1962, 1969, 1973; Prakash, et al., 1967). Even vegetables are damaged with all the major crops grown in various regions (Bindra and Sagar, 1977; Madsen, 1977; Greaves, et al., 1977). However, it takes readily, like more common rodents as Rattus, to eating baits as cereals or pulses (Prakash, 1969; Prakash and Jain, 1971).

Besides such omnivory, the gerbil also resembles the other common rodents in reproduction (Barnett and Prakash, 1975). It is a prolific breeder with mean duration of oestrus of 4.8 days (Ghosh and Taneja, 1968). Breeding continues throughout the year in Rajasthan (Prakash, 1962; Jain, 1970; Prakash, et al., 1971), but in Karnataka there is a bimodal pattern in production (Prasad, 1956; 1961; Chandrahas and Krishnaswamy, 1974). Litter-size ranges from two to nine; gestation period from twenty six to thirty days; while the young are weaned at thirty days post-partum (Prakash, 1962; Prakash, et al., 1971; Jain, 1970; Chandrahas and Krishnaswamy, 1974).
Although occasionally breaking out into plagues, the population cycles of gerbils follow regular patterns as in case of other rodent pests (Prakash and Rana, 1970, 1972, 1973). Factors regulating their population have been studied in the desert (Prakash, 1962, 1968, 1974; Prakash, et al., 1971), but not anywhere else. Of late, it seems to have increased in numbers in some parts of Rajasthan, as Bikaner (Jain, 1970) but it has also been displaced in other areas (Prakash, 1977). Its relative abundance in the field has, however, been examined in many environments (Bindra and Sagar, 1977; Sood and Ubi, 1977).

Although it is unlikely to displace other rodent pests as Rattus and Bandicoots, it has become the predominant species in many areas. These include Hathras in U.P. to Sidhpur in Gujrat (Bhatnagar, 1969; Madsen, 1977). Otherwise, it is also an abundant species in many areas (Srivastava, et al., 1968; Prakash and Ghosh, 1975; Barnett and Prakash, 1975); and thus many attempts are being made to devise methods for its control (Prakash, et al., 1969; Fitzwater and Prakash, 1973; Prakash, 1976). Some fumigants have been found highly successful (Krishnamurthy and Singh, 1967), but not acute poison like zinc phosphide (Prakash and Jain, 1971). However, development of 'bait shyness' by gerbils has not been confirmed (Cowan, 1978) and large-scale control of these pests by acute poisons is still possible.
Apart from ecology and methods of control, some aspects of the morphology and physiology of this species have also been studied, though mostly with gerbils trapped in Rajasthan. Body weights, organ-body weight relationships and weight of adrenals in relation to stress and reproductive activity have been analysed (Ghosh and Taneja, 1968; Jain, 1970, 1973). Histology and histochmical characteristics of their tissues (Purohit and Ghosh, 1965), morphological variations between populations (Rana, et al., 1970) and physiological adaptations have also been studied (Purohit and Ghosh, 1965).

There is, however, very little literature on the behaviour of this species; barring some observations on making of burrows, general activity, etc. (Sagar and Bindra, 1970; Prakash, unpubl. obs.). Compared to it, there have been numerous investigations on the behaviour of Mongolian gerbil (Thiessen and Yahr, 1977). The paucity of information on such vital aspect of it's biology, is obviously a great handicap for successful management of this pest. This has, however, not yet been realized.