

the first day of the pupae and reaching a value of 12.1 ± 0.07 g/100 ml on the 7th day of the pupal life.

The adult life cycle in the lepidopterans is very short. The glucose content recorded a drastic decrease from the day of emergence until the death of the moth. On the day of emergence, in the male moth the glucose concentration was 12.4 ± 0.05 g/100 ml and it decreased to 9.4 ± 0.01 g/100 ml on the 5th day. In the female moth the decrease in haemolymph glucose was more from 12.6 ± 0.01 g/100 ml to 9.2 ± 0.06 g/100 ml (figure 1).

The intensity of trehalose spot on the chromoplate showed a gradual increase throughout the larval period reaching a maximum in the late last instar larvae. The intensity of trehalose showed a gradual decrease during pupal and adult stage.

The level of glucose in *Chilo partellus* shows a gradual increase during the feeding period, that is the larval period, with a temporary decline at each moult. Similar observations were made by Pant and Morris⁹, and Pawar and Ramakrishna¹⁰.

The carbohydrate content decreases gradually during pupation and this trend continues in the adult stage. Similar studies conducted by Tate and Wimer¹¹ during the metamorphosis of *Phormia regina* also showed a decline in the glycogen content during adult development.

Day-to-day variations were observed in the carbohydrate content of *C. partellus*. It is clear that during metamorphosis *C. partellus* rely on carbohydrates sequestered during the larval periods as an energy

source and as substrates for the synthesis of chitin and other cellular components.

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FIRST RECORD OF FUSARIUM SEMITECTUM BERK AND RAV AS AN ENTOMOPHAGOUS FUNGUS

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WHILE making a survey for the entomophagous fungi associated with crop pests in and around Coimbatore, an epizootic infection of *Myzus persicae* Sulzer and *Lipaphis erysimi* Kaltenbach appeared on cauliflower, cabbage and knol khol plots in the Tamil Nadu Agricultural University Campus. Further observations revealed that this fungal infection also occurred on *M. persicae* infesting chilli and other cole crops grown in pots under glass-house conditions.

The infected and dead aphids were collected in sterile tubes and the fungal pathogens associated with

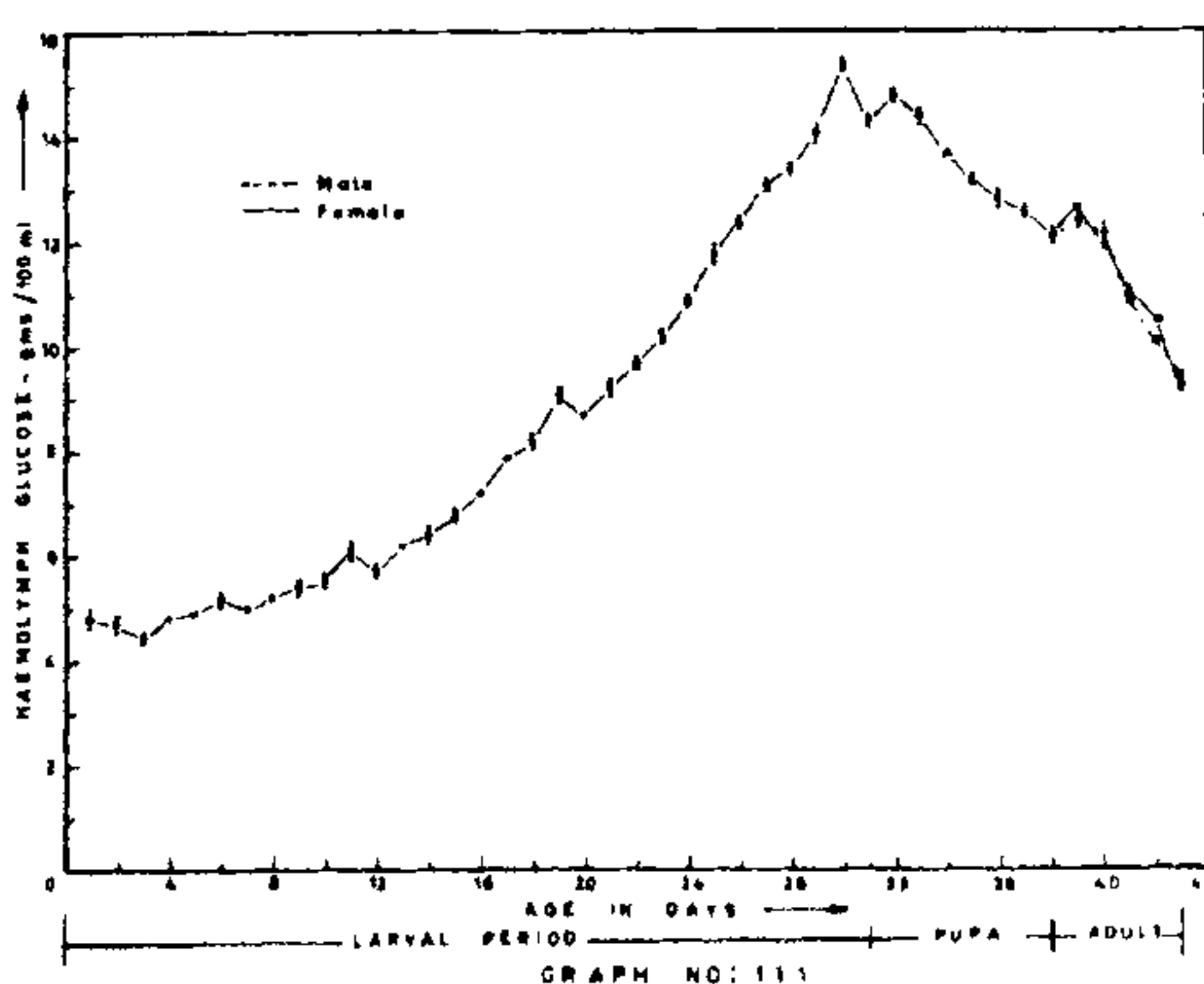


Figure 1. Quantitative changes in the glucose level of the haemolymph during the development of *Chilo partellus*.

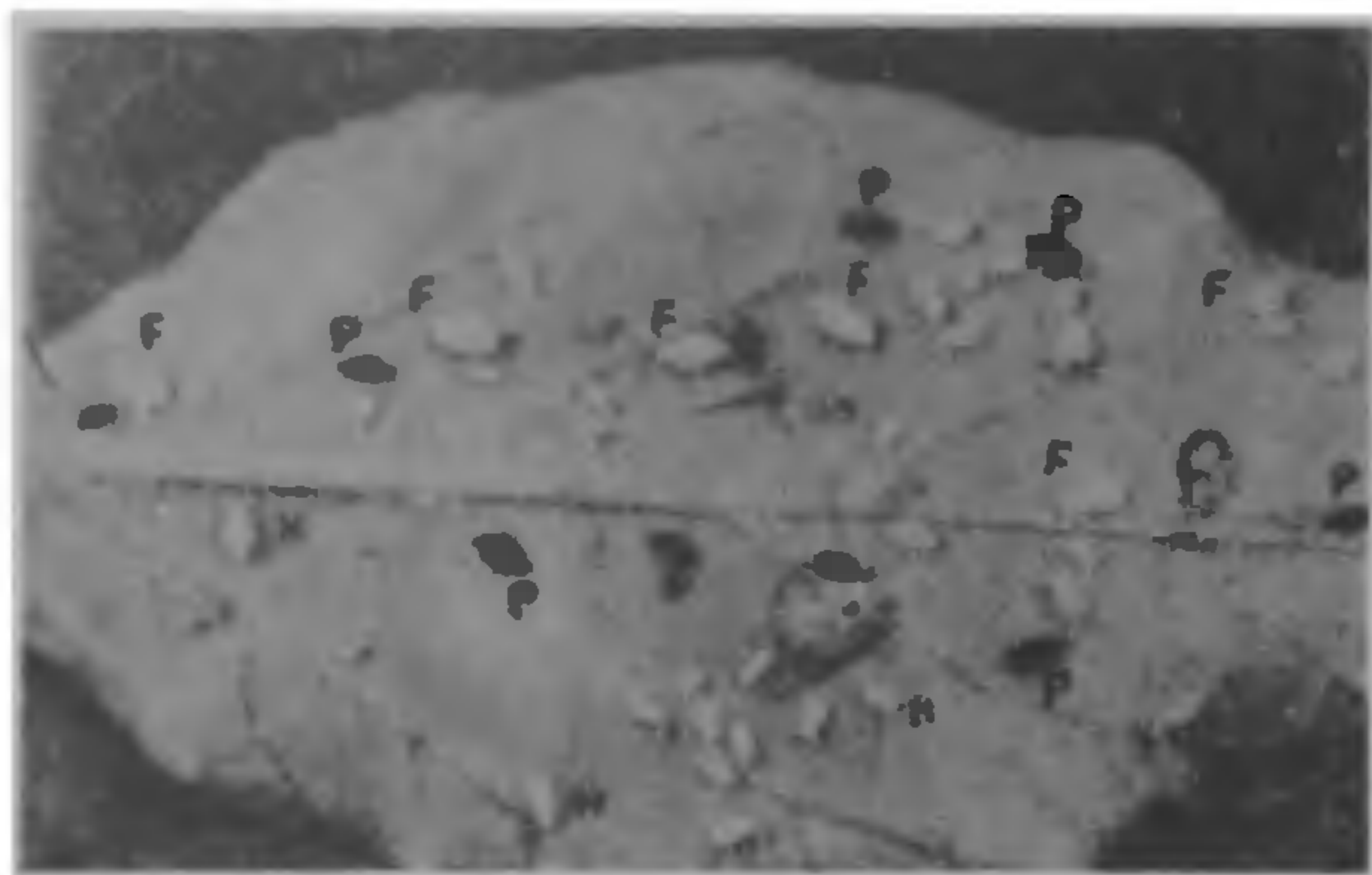


Figure 1. Chilli leaf with *M. persicae* and mummies due to its natural enemies. H = Healthy, F = Mummies due to fungus, *Fusarium semitectum*, P = Mummies due to parasitoid, *Aphelinus kurdjumovi*.

them were isolated on Sabouraud dextrose agar medium and identified. Mixed infections of *Fusarium semitectum* Berk and Rav and *Cladosporium* sp in the aphids collected from fields and *F. semitectum*, *Verticillium lamellicola* (F. E. V. Smith) W. Gams and *colletotrichum* state of *Glomerella cingulata* (Stomen) Spauld and Schrenk in the aphids collected from glasshouse were observed. Of the fungal pathogens, only *F. semitectum* was virulent and pathogenic to *M. persicae* and *L. erysimi* and the remaining fungi were either secondary invaders or contaminants.

The infected aphids were inactive and sluggish, crawled slowly dragging their legs and finally ceased to feed. The colour changed from pale yellow to pale reddish brown in case of *M. persicae* and pink in *L. erysimi*. The abdomen was dilated and the insect was mummified. The cadavers remained attached to the bottom side of the leaves by rhizoids. (figure 1).

Death usually occurred within 3 to 7 days after infection and the cadavers turned dry, shrunken, shapeless and lost hold with the leaves. Such mummies would be blown off if dry climate prevailed or else they will be attached to the leaves for about a week and then dropped off. The time taken for sporulation of fungus from the mummies at 25°C and 100% RH was 36–48 hr. The fungus was whitish, later turning to buff brown due to the formation of numerous spores.

The occurrence of *F. semitectum* on aphids seems to be the first report. However, a number of species of this genus were reported infecting insects belonging to different orders. For instance, recently, *F. oxysporum* Schlecht on *Coccus viridis*³ and *F. equiseti* (Corda) Sacc on *Coccidohystrix insolita*¹ and *Nephotettix*

*virescens*² were reported from India.

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THIOLA-INDUCED EFFECTS ON RAT EPIDIDYMAL SPERMATOZOA

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EFFECT of Thiola at a dose of 20 mg/kg body weight/day for 30 and 60 days was investigated on cauda epididymal sperm metabolism, count and motility of adult rats. The data revealed that the cauda epididymal sperm motility and count were reduced in rats treated for 30 and 60 days as compared to control. The activities of acid phosphatase, succinate dehydrogenase and total ATPase as well as protein content were also declined with the duration of treatment. These effects were related to alterations in their oxidative/energy metabolism and to maturational changes.

The -SH compounds used for protecting animal systems against the injurious effects of ionizing radiations were of high toxicity¹. One of the radiochemical protectors is 2-mercaptopyrionyl glycine (MPG), commercially known as Thiola is reported to give effective protection on irradiated organs at a very low dose^{1, 2}. But the long-term treatment of this chemical to normal adult rats brought about a significant decline in circulating levels of testosterone and an increase in testicular cholesterol content indicating probable inhibition of androgen synthesis. This in turn caused androgen deprivation effect to androgen target tissue, which led to marked changes in their structure and metabolism of treated rats³⁻⁵. Loss of fertility was