*Glossina pallidipes* Austen have been successfully reared in the adult stage in the laboratory. The flies fed readily on the belly of guinea-pigs, and the latter did not seem to be worried by the attentions of the flies.

Immediately after adult emergence the flies were kept individually in tubes at four different temperatures (20°, 22°, 24° and 28 °C), at a relative humidity of 40 ± 5%, and they were offered guinea-pigs daily. Fifty per cent of the flies reared at temperatures of 20° and 28 °C died during the first 5 days, 50% of those reared at 24 °C died during the first 10 days, and 50% of those reared at 22 °C lived for more than 50 days.

Few flies reared at 20° or 28 °C fed at all, and those that did had only four or five meals in their life-time; most of the flies reared at 22° or 24 °C did feed, but those reared at 24° took only a few meals. Most of these meals were ‘full’ ones, but a considerable proportion of meals taken by flies reared at 20 °C were ‘partial’ ones. The interval between meals was usually 3 or 4 days; but the time taken between adult emergence and time of first meal was shorter, except for the flies reared at 20 °C.

When tsetse flies are reared at 22 °C the first six blood-meals are smaller than subsequent ones. The size of the meals and the rate of body growth do not seem to be related to the gonadotrophic cycles. On the other hand, the terminal phase of growth in both sexes shows a steady increase in body weight.

The factors that might influence feeding, growth, and the longevity of adult tsetse flies are discussed.

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