the hypothalamohypophysial axis[1-3]. The fact that exogenous administration of hCG overcomes MB inhibited spermatogenetic activity in the frog supports the above view. However, in hypophysectomized as well as in intact *R. esculenta* homologous pars distalis homogenate failed to overcome the inhibitory effects of MB on spermatogenesis[8]. In the present work, as hCG could induce proliferation of spermatogonia and their transformation into primary spermatocytes in MB-treated frogs, it is suggested that early stages of spermatogenesis require gonadotrophin.

Frequency distribution studies provide additional clues with regard to the possible role of gonadotrophin in the regulation of spermatogenesis. For instance, tables 2A and 2B show a decreased mitotic activity in the early stages of spermatogenesis due to MB treatment. These findings suggest that proliferation of spermatogonia and their subsequent transformation into primary spermatocytes in the frog are gonadotrophin dependent.

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CURLY WING MUTANT IN *MANSONIA UNIFORMIS* (DIPTERA : CULICIDAE)

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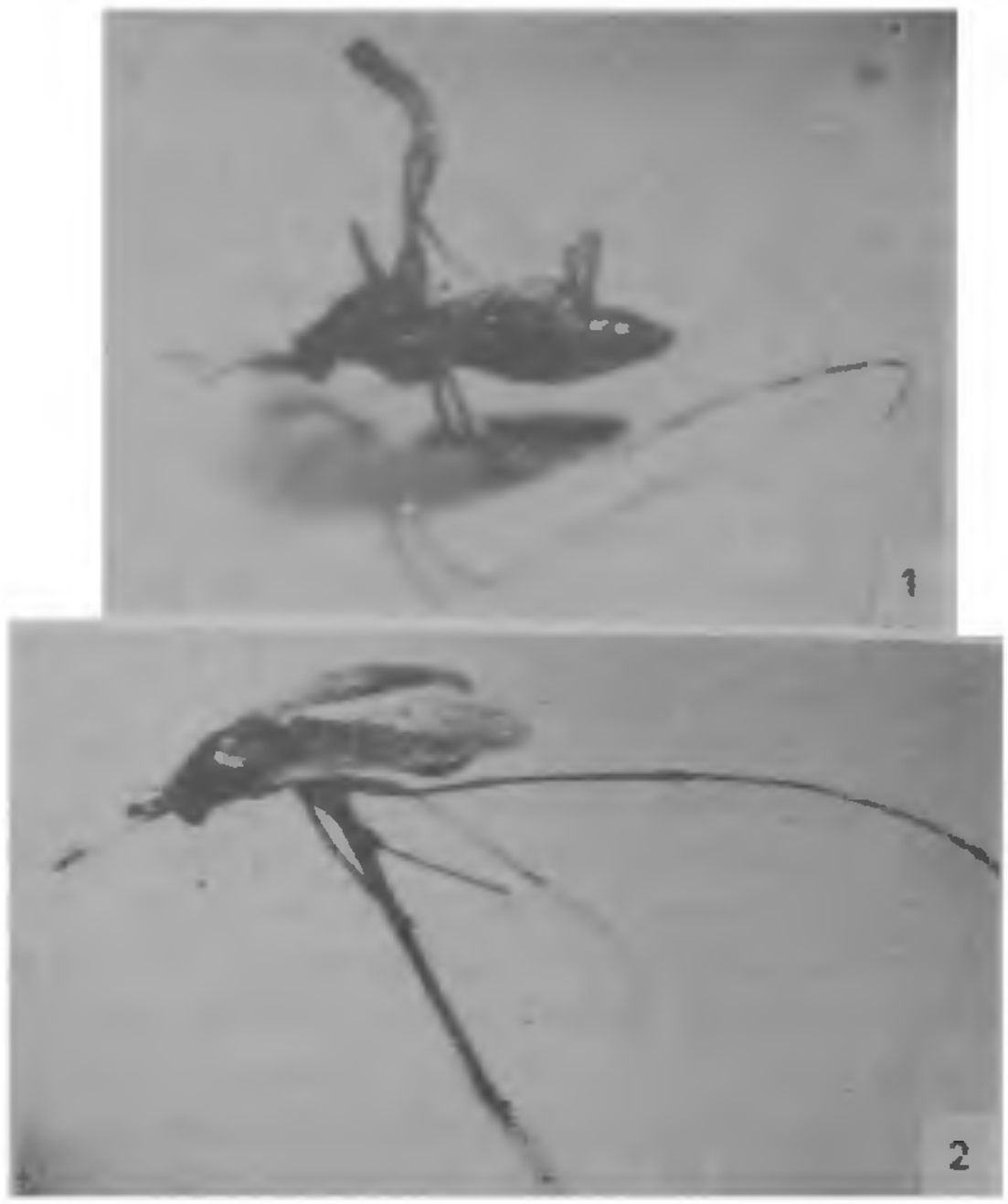
MUTATIONS affecting the wing in mosquitoes are rare and there are only two reports on the heritable curly wing mutant in them[1,2]. This paper reports two curly wing mutants (females) discovered in the laboratory colony of *Mansonia uniformis* during a screening programme for mutant forms. Of the two mutants, one had bilateral curly wings, where the right one was always held upwards (figure 1), this wing was found to be rolled from either side to form a scroll-shaped structure, whose apex was again bent forwards. The left wing of this mutant was almost normal but its apex was bent sharply upwards. Interestingly, the mutant was pentapodite and the hind legs were exceptionally long due to the abnormal size of the tibia and tarsae (figure 1). Also, the middle and the hind legs of the mutant were sharply curved especially at the joints between femur and tibia, tibia and tarsa I and between the tarsae, almost similar to the condition reported in *Culex tritaeniorhynchus*[3].

Because of the aberrant development of the wings and legs, the mutant mosquito was unable to fly, and dragged itself around. Normally, *Ma. uniformis* exhibits mating even in test tubes during day time, preferably in the evening. Attempts to mate the mutant female with a normal male failed. However, she fed when held on the human hand. The mutant oviposited 3 days after the blood meal, not as the usual spherical-shaped egg cluster on the under-side of the *Pistia* leaf. The eggs were found dispersed individually on the water surface; this characteristic behaviour of the mutant mosquito may be due to the aberrant development of the middle and hind legs. The number of eggs deposited by this individual was 35 as against 160–200, which is usual for a normal female. The deposited eggs did not hatch. The attempt for second blood meal was not successful and the mutant individual died a week after its emergence.

The second specimen (figure 2) had unilateral curly wing, i.e. the mutant possessed a normal left wing whereas the right one was a curly wing similar to the one reported for *Cx. tritaeniorhynchus*[2]. However, she was not able to fly, and was making quick



Figures 1 and 2. **1.** Bilateral curly wing mutant: note the abnormally curved hind tarsae; **2.** Unilateral curly wing mutant.

hopping movements. In contrast to the first mutant, this female mated with freshly emerged normal males in the test tube and took a complete blood meal when held on the human hand. After oviposition, she readily fed again on the human hand and laid another cluster of eggs. The clusters were diamond-shaped and not spherical with only 77 eggs in the former and 72 in the latter. Four days after the second oviposition, the mutant mosquito died. From the first egg cluster, 84.4% of larvae hatched and all were dead after a day. Of the total larvae hatched (82.5%) from the second egg cluster, 3 adult females emerged, all of which were normal as far as their wings and legs were concerned. Attempts to rear F_2 and successive generations failed due to 100% mortality of the first instar larvae hatched from the eggs of these females (F_1). An intensive study on the genetics of curly wing mutant is being carried out in this laboratory.

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ECOLOGICAL AFFINITY OF THE ZOOPLANKTON POPULATIONS IN THEIR NATURAL ENVIRONMENT

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ZOOPLANKTON constitutes the major component of aquatic food chain; information on their population dynamics is of paramount importance in applied fisheries. The percentage co-occurrence and the correlation matrix of the different zooplankton could be used as an indicator of their ecological affinity (*vide infra*).

Samples of zooplankton were collected from a freshwater tank, Jyotisar of Kurukshetra during March 1977-June 1979 to study their frequency at different times of the year[1]. Forty samples were collected during the investigation. The percentage co-occurrence (PC) of the different zooplankton species was worked out using the formula[2]: $PC = c/(a+b-c) \times 100$, where c is the number of samples containing both the species, a and b are the number of samples containing individual species. The correlation matrix was worked out using standard methods[3].

Three species of cladocerans (*Ceriodaphnia cornuta*, *Diphanosoma excisum*, *Daphnia lumholtzi*), 2 species of copepods (*Neodiaptomus kamakhiae*, *Cyclops sp*), 1 species of rotifer (*Brachionus calyciflorus*) were observed to be the dominant forms in the tank. As evident from table 1, the highest percentage co-occurrence (PC) was observed in *C. cornuta* and *D. excisum* indicating the closest ecological affinity between these two species. The lowest PC in *D. excisum* and *D. lumholtz* elicits the existence of least affinity between these two forms. The lowest values of PC in different rows of table 1 point out that *D. lumholtzi* appeared least often with the other forms