The phenotype of the "aristapedia" mutation consists in a gigantic growth of these segments of the antenna on which aristae are disposed. In flies with the above character well expressed, antennae are transformed into legs with a division into segments proper to them (Fog. 2). Large bristles, characteristic of legs, are sometimes seen to grow between the segments (see the extreme right Fig. 2). On the ends of those atavistic legs, well marked aristae are occasionally present. The head of flies with the aristapedia mutation is somewhat elongated, while the eyes are always reduced, flattened, resembling in form the "lobe" mutation in D. melanogaster. The manifestation of that character is found to be more pronounced in females than in males. Cytologically this strain has not yet been investigated. Among 120,000 F^1 flies examined, resulting from X-raying males of diverse strains, the bar mutation was obtained only once and the aristapedia mutation only twice, the latter character occuring in both cases in males. The second male did not produce any offspring. As far as we know, the bar mutation and the atavistic mutant aristapedia character in Drosophila is a very rare phenomenon and our cases in D. funebris seem to be described for the first time. The recessive aristapedia character in D. melanogaster was also described in the Institute of Experimental Biology by Balkashina in 1928.

Fig. 1

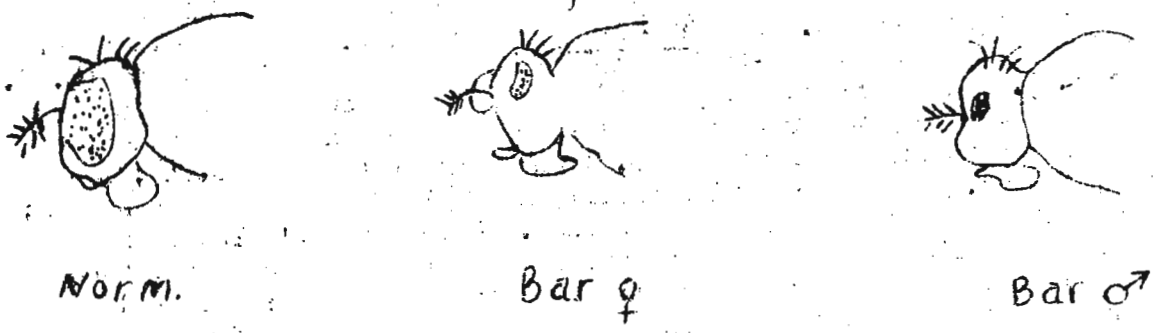
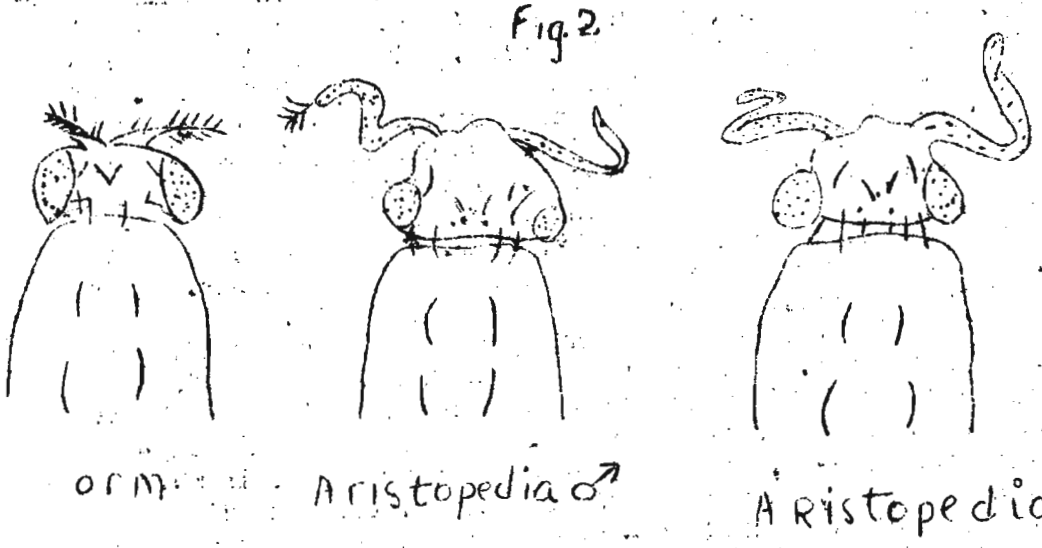


Fig. 2



Varshaver, N. B. Mutation rate of y, ac, sc, w and sn in D. simulans.

Normal D. simulans males were X-rayed (dosage 4000 r) and mated to y w females with attached X-chromosomes. The following frequency of mutation was detected in the loci y, ac, sc, w and sn. Among 94,762 studied F^1 males there were found: 11 yellow (0.116%), 0 achaete, 10 scute (0.0105%), 26 w (0.0274%), 1 mottled

(0.0011%) and 12 singed (0.0126%). Among the 10 scute mutations only 3 proved to be fertile, although showed a very poor viability. One of the latter was lethal in females, just as the sc^3 in melanogaster. None of the allelomorphs studied was connected with a long inversion. The description of scute mutations in simulans showed their high resemblance with the scute in malanogaster.

Technical Notes

Clancy, C. W. Large scale egg collections.

In order to secure large numbers of pupae of known ages it has been necessary to develop special methods for handling the females and for collecting eggs, the details of which may be of interest to other workers. (A) Pre-feeding of females. The importance of pre-feeding the females for egg-laying was mentioned in a previous issue (W. P. Spencer, DIS-8). The technique adopted here is to start culture bottles of the desired stock with 5 to 10 young females and an equal number of males. Allow the females to lay for 2 to 3 days, then transfer to anew bottle; repeat several times. The females will usually lay well for a week to ten days; it is then best to start bottles with new ones. Dried Brewer's Yeast in rather heavy suspension is added to the culture bottles a day or two after the females have been transferred from them. This ensures maximally fed larvae. When cultured as indicated the flies are large and the females after being counted, mated, and fattened for about two days in regular culture bottles to which a small amount of water has been added, are in excellent condition for laying. For the ageing, mating, and fattening process, 50 to 70 females are placed in a bottle with 25 to 30 males. These are later transferred without etherization to the egg collecting jars described below. (B) Collection of eggs. Eggs are collected in quart size, wide-mouthed, fruit jars, (Presto, manufactured by Owens-Illinois Glass Company) in small metal trays containing agar-cornmeal-molasses medium. The trays may be purchased at Woolworth's under the name of egg-poaching pans. They are made of aluminum and consist of a pair of small trays 7x7x3 cm. deep, connected by a flat metal bar. A wire handle is attached to the middle of the bar. This is punched out and the connecting piece cut across the middle, giving two pans, each bearing a small tongue that is convenient to use as a handle in transferring to and from jars. Permanent plugs for the jars are made by stuffing heavy gauze or muslin with coarse cotton and tying with heavy thread. They can be autoclaved with dry steam. To ensure a humid egg-laying surface (Spencer, DIS-8), the constant temperature room, in which the egg collections are made, is kept at 70% to 80% relative humidity; the food used in the pans is diluted one-third to reduce the agar content to about 1%; and, finally, 2 to 3 cc. of a watery suspension of live yeast is pipetted on the food surface. Yeast or its fermentation products seem to be important not as a means of eliciting the ovipositing reaction, but rather as a source of something used by the females for continued egg production. Pre-fed females lay well for several days on moist trays without yeast, but their egg production soon drops off, while comparable flies given plenty of yeast usually continue to lay heavily for 10 to 14 days. No experiments have been made to test this observation, but experience indicates that in some way yeast is necessary to maintain high egg production.