

The data show the offspring of females with such bristles. Obtained crosses between females with thickened bristles and sn males - Females: $f = 51$; sn = 64; 3N = 38; y w = 4; w = 1; y = 1; Males: sn = 42; w = 3; y w = 2; $f = 3$; Intersexes $f = 23$; sn = 22. The cytological analysis proved this assumption to hold true. Ovaries of females with thickened bristles were stained with acetocarmine and their study showed the chromosome set to be triploid. Intersexes obtained in *D. simulans* differ but slightly from those in *D. melanogaster*. Triploid *D. simulans* females were mated to *D. melanogaster* sc⁸ wa f B males. The sc⁸ chromosome was selected for the following reasons. It is known that the sc⁸ - chromosome shows the Hw effect, which is manifested both in homo- and heterozygotes by the presence of a group of new microchaetae - mesosternale. Triploid females in *D. melanogaster*, having one sc⁸ - chromosome do not manifest this character. It was therefore, possible to assume that these bristles would not appear in hybrids, having two chromosome sets from *D. simulans* and one set from *D. melanogaster*, which would enable us to detect them from diploid hybrids. Following hybrids were obtained: 5 $f + f$ ♀♀; 4 sn ♀♀; 2 $f + f$ ♂♂; 2 sn ♂♂; 4 $f + f$ ♂♂; 1 ♂. Although the figures obtained are small they nevertheless show that hybrids which have received from *D. simulans* two sets of chromosomes and the cytoplasm, and from *D. melanogaster* one set of chromosomes probably very seldom survive. This fact is in conformance with previous data on hybrids between *D. simulans* and *D. melanogaster*. It is known that hybrid females having the cytoplasm and one X-chromosome from *D. simulans* and the other X-chromosome from *D. melanogaster* have a decreased viability. One case of a hybrid female having the cytoplasm and two sets of chromosomes from *D. simulans* and one set from *D. melanogaster* is, however, described in literature (T. Morgan, C. B. Bridges and J. Schultz 1938). The 5 hybrid intersexes obtained by us were similar to hybrid intersexes which were obtained from 3N *melanogaster* crossed to 2N *simulans* and described by Schultz and Dobzhansky (1933). Such hybrids were also obtained in great number by us.

Pipkin, Sarah Bedichek. Expression of forked in the progeny of triploids.

The degree of forkedness observed in the progeny of homozygous forked triploid females crossed with forked males is found to depend not only upon the dosage of the X-chromosome but also

upon the dosage of the autosomes. Super-males (1X3A) are the most forked; triploid (3X3A) and diploid (2X2A) females next; diploid males (1X2A) less forked; and intersexes (2X3A) least forked of all. Forked haplo-IV diploid males with bristles as slender as those of the super-males nevertheless have a degree of forkedness similar to that found in diploid males. Intersexes, while less forked generally than diploid males, sometimes have patches of extremely forked tissue. Thus the autosomes influence the expression of forked since 1X2A diploid males are less forked than 1X3A super-males, and, furthermore, 2X2A diploid females are more forked than 2X3A intersexes. In X-chromosome aneuploid experiments concerned with studying sex balance, it was found that 3A individuals carrying one complete X containing forked, one complete X with the normal allele of forked, and the left hand X-chromosome fragment of an X-IV translocation broken between the loci of fw and wy, were faintly forked. Ordinary 3X3A triploid females with one dose of the normal allele of forked and two doses of forked appear non-forked. Control intersexes (2X3A) with one normal allele of forked and one forked gene present also appear non-forked. Thus although the number of each autosome remains the same (three of each), the addition of an extra fragment of the X not containing the locus of forked to the $\frac{f}{f}$ 3A complement changes the ex-

pression of forked. Individuals of the composition

2A,

$\frac{f}{f}$

(hyperdiploid females), however, only rarely show one or two bristles faintly forked in comparison with the weak but definite forking in nearly every bristle of practically every individual of the composition $\frac{+}{f}$ 3A. More

data are now being accumulated in an effort to localize the region in the left hand portion of the X-chromosome which appears to be responsible for the weakening of dominance of the normal allele of forked in $\frac{+}{f}$ 3A aneuploids.

Pogossianz, H. E. The gene scute in *D. virilis*.

Among 60,986 F^1 females, 46 scute flies were obtained from the cross of *sc y sc v c* females to normal males, given 4000 r of X-ray treatment. Simultaneously in *melanogaster* only 3 acute mutations occurred among

12, 858 F^1 females. Since the method and dosage in both experiments are the same and the alleles of scute in females used are phenotypically similar, the following conclusion can be drawn: the gene scute in *virilis* mutates more frequently than in *melanogaster*. This is confirmed by the data obtained on *melanogaster* by other authors (Goldat 1936, Glembozky 1936). Among 46 scute mutations 16 were not tested; they were sterile or perished. The remaining 30 flies carried the newly arisen mutations. 18 of which proved to be viable and fertile, 4 sterile in males, and 8 lethals. All these mutations are studied at present both genetically and cytologically. The description of the new scute mutations is given in this issue of *DIS*.

Sirotina, M. I. Cytology of *D. busckii*.

An investigation of metaphase plates in larvae ganglions and in ovaries of a stock of *D. busckii* of Kiev origin showed the presence of only three pairs of chromosomes (instead of four pairs reported by Metz

for the American *D. busckii*). The X-chromosome is rod-like with a satellite on its proximal end. The autosomes are V-shaped, with equal arms; both pairs are alike in length. The Y-chromosome is likewise V-shaped, but one arm is longer than the other. An analysis of salivary gland nuclei revealed the absence of the granular amorphous central mass characteristic for *D. melanogaster*, and the presence of a heavily staining nucleolus. All the elements are connected with this nucleolus by thin threads. The number of elements is 6 in the female and 7 in the male; the extra element in the male is the Y-chromosome (or its part), containing about 14 discs. The satellite of the X-chromosome is likewise represented in salivary nuclei as a free element. The X-chromosome and the satellite are more strongly connected with the nucleolus than all the other elements. A rather detailed map of the salivary chromosomes of this species has been prepared and will appear in the paper which is now being prepared for press.

Serebrovskaja, R. I. X-ray induced mutations in *D. hydei*.

By means of X-rays (3000 and 4000) the following mutations were obtained in *D. hydei*: (1) scute - sex-linked, recessive (2) white - sex-linked, recessive (3) vermilion - sex-linked, recessive (4) forked -

sex-linked, recessive (5) Notch - sex-linked, dominant (lost) (6) orange eyes - sex-linked, recessive (7) red eyes - sex-linked, recessive (8) miniature - sex-linked, recessive (lost) (9) Dichaete-type - autosomal dominant (lost) (10) Spread-type - autosomal dominant (lost). In total, 32751 flies were examined. Both sexes were studied and X-rayed simultaneously. The greatest