Research Notes

Bedichek, Sarah. Suppression of the recessive plexus by the dominant Star in the II chromosome of D. melanogaster. In connection with crossing-over studies in a II-III translocation it was found that the expression of the recessive mutant plexus, located at 100.5, II, in the homozygous condition is completely suppressed by the presence of one dose of the dominant Star, located at 1.3 in the same chromosome. The data is obtained from a cross in which both plexus and Star are present in a II-III translocation. In this case, II L is joined with III R and III L with II R. The homozygous translocation containing c px sp in one of the II R's and S in one of the II L's was crossed to al dp b pr c px sp. In the progeny, normal, Star, c px sp, and S c sp flies were found. The S c sp flies were never px.

Camara, A. Branched chromosome structure. Studying the salivary gland chromosomes of the stock "plexus" (D.pseudoobscura) obtained by high temperature, in order to find evidence of one inversion detected by genetical results, we observed in some individuals an interesting branched structure of the X-chromosome. It is clear that the end of the proximal part of the second chromosome was translocated to that one, being laterally attached near the distal end of the inversion.

Camara, A. Effect of centrifuging on crossing-over. The effect of centrifuging was studied in Drosophila melanogaster in the 3 chromosome. The investigation is now complete. The results are summarized as follows:

ru-53-	h-31.4	th-3.6	st-8.0	p^p-4.0	cu-24	sr-	e^s
41.5	30.0	2.3	6.0	3.5	18	29.0	-
38.5	29.0	2.2	4.0	4.0	19	27.4	..

Camara, A. Induction of mutations by high temperature. We intended to test the production of mutations in a series of alleles. We started with purple' (D. pseudoobscura) and obtained pr^2, pr^3 and pr^4. We started also with pr^3 and obtained pr'.

Crew, F. A. E. Developmental studies. The development of the legs, wings and halteres in the larva and early pupa of D. melanogaster has been followed up with the aid of sections and total preparations. The development of several wing mutants - dp, 13d (Jollos), vg - has been studied as to the first deviation from normal. The wing obtains its shape by the obliteration of marginal parts after the formation of the pupa sheath. The narrow wing of 13d shows its first deviation from normal in the first hours after pupation when

The circular portion of the wing disc (cf. Chen '29) grows out into a hollow pouch. In vg the circular portion is markedly smaller than in wildtype. As soon as it begins to grow out - or even earlier - the future proximal portion of the wing is constricted off by a fold. Later this portion becomes obliterated (cf. Goldschmidt '35). For the mutant 17b (unequal wings, Jollos) a temperature-effective period at the end of the larval and beginning of the pupal period was established.

Studies on the early development of vg, on the development of unequal wings and on the development of venation are in progress.

Pupae of wildtype, seven mutant eye-color types, and various combinations of mutant types of D. pseudo-obscura were isolated within one hour of pupation. After incubation at 25° C. for definite periods these were dissected and records kept of times at which pigment first appeared and times at which color changes occurred in the developing eyes. Histological studies of all important stages thus determined are now in progress.

Kichijo, H. Salivary chromosomes of various species. According to Kikkawa's suggestion, the ratio of the total length of autosomes to that of X-chromosome in the salivary gland cell of various species, was examined. The following 15 species gave the ratio about 4:1; melanogaster (A-type according to Metz and Moses' diagram), simulans (A), takahashii (A), immigrans (D), virilis (F), funebris (G), repleta (I), hydei (I), ananassae (L), bipectinata (L), montium (new type), sp-1 (A), sp-2 (A), sp-3 (A), and sp-4 (H). The following four species gave the ration about 1.7:1; pseudoobscura (J), affinis (K), sulcata (new type) and sp-5 (E). Full investigations in connection with the genetics and morphology are now under way in collaboration with H. Kikkawa and F. T. Peng.

Kikkawa, H. Chromosomes of D ananassae. As shown previously, four pairs of the V-shaped chromosomes are seen in the oogonial metaphase of this species. However, the linkage groups to date are only three: X-25 (including multiple allels), II=16, III=11, IV=0. This fact strongly suggests that one pair of the germinal chromosomes are formed by inert substances. Recent studies on both genetical and cytological grounds proved clearly that the smallest pair of the V-shaped chromosomes was almost inert. The most interestin point is that the distal part of one arm of this inert chromosome is homologous to a part of the short arm of Y-chromosome. The detail will be shown before long.

Ludwig, W. Asymmetrie-Index bei Crossover-Versuchen. Erhält man z.B. in einem 3-Punkt-Versuch abc/+++ x abc die Nachkommen (0)=466/382, (1)=39/8, (2)=113/215, (3)=225/322, (1,2)=7/2, (1,3)=20/23, (2,3)=60/125, (1,2,3)=15/1, Total 2312, so