

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), *funobris* (G), *repleta* (I), *hydei* (I), *anassae* (L), *bipunctinata* (L), *montium* (new type), *sp-1* (A), *sp-2* (A), *sp-3* (A), and *sp-4* (H). The following four species gave the ratio 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. anassae*.

As shown previously, four pairs of the V-shaped chromosomes are

seen in the oögonial metaphase of this species. However, the linkage groups to date are only three: X-25 (including multiple alleles), 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 interesting 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)=50/125, (1,2,3)=15/1, Total 2312, so

addiere man die kleineren Zahlen jeder Bruchklasse ($466/8/113/225/2/20/50/1=885$) und die grösseren Zahlen ($682/39/215/322/7/22/125/15=1427$), dividiere die grössere Summe durch die kleinere ($1427:885=1,61$), dann ist $J = 1,61$ der Asymmetric-Index des Versuchs. Für die Berechnung von exakten Recombinationswerten, besonders für die Berechnung für Coincidence-Werte sind Versuche mit $J=1,00-1,15$ einwandfrei, $J=1,15-1,30$ brauchbar, $J=1,30-1,50$ unsicher (kaum brauchbar), J grösser als 1,50 unbrauchbar. Dies ergibt sich praktisch und ist theoretisch begründbar. Falls in einem Crossover-Versuch die Teilklassen nicht einzeln angegeben sind, sollte immer mindestens der Asymmetricindex angeführt werden.

Neuhauss, M. A New Allel of the Gene Yellow in *Drosophila melanogaster*.

In studying the effect of X-ray quality on the frequency of visible mutations (Bx males treated and mated

with XX females), a gray male with yellow bristles was found and crossed to an XX female, resulting in F_1 XX daughters and gray males with yellow bristles, indicating that this character is probably sex-linked. The F_1 males were crossed to Florida females. In F_1 only Bx females appeared, showing the recessive nature of this character. Males having this trait were crossed to two groups of females with free X's. One group carried the gene for yellow skin and yellow bristles and the other group carried the gene for yellow skin and the genes w^+ f. The former gave gray Bx daughters with yellow bristles in F_1 . The latter gave only Bx daughters. It may therefore be concluded that the gene for this trait is partly allelomorphous to yellow. From F_1 females of the second cross, F_2 was obtained. This was done for the purpose of localizing the gene for the above character by the crossing-over method. F_2 gave the following results: 0:901; 1:8; 2:642; 3:23; 1-2:1; 2-3:13.

These data show that the new gene is located on the left end of the X-chromosome and is linked with a slight suppressor of crossing-over.

Shapiro, N. Comparison of the frequency of translocation between the 2nd and 3rd chromosomes in spermatozoa containing the X-chromosome and the Y-chromosome.

Our previous findings on translocations occurring under the influence of X-ray treatment have enabled us to collect some data concerning the translocation

rate in spermatozoa containing the X-chromosome and those containing the Y-chromosome.

There are reasons to assume that:

1. The configuration and mutual position of chromosomes during treatment has an influence on the character of the translocation process.

2. The configuration and mutual position of chromosomes in nuclei of spermatozoa carrying the X-chromosome may differ from that in spermatozoa carrying the Y-chromosome.