♂♂ and 254 yellow white ♀♀, 2 normal ♀♀ and 3 yellow white ♂♂. The latter two classes were produced by separation of the attached X's of the yellow white ♀♀.

The data on the location of the new mutation show that it is located in the right end of the X-chromosome.

Kikkawa, H. Systematics of Drosophila. While examining the salivary chromosomes of various species of Drosophila I realized that there are (at least) two different groups with respect to the ratio of the total length of autosomes to length of X-chromosome, viz., the one giving the ratio of about 4:1 and the other, about 1.8:1. D. melanogaster, virilis, funebris, ananassae, repleta, etc. belong to the former group, while D. pseudoobscura, affinis, miranda, etc. belong to the latter. Morphologically, there is also a distinct difference between the two groups in the shape of testis. These characteristics may be worthy of dividing the genus Drosophila into two subgenera. My inference proposed in Proc. Imp. Acad. Tokyo, 9, 1935, may be applicable only to the former group. Full investigation in connection with genetics is now underway.

Parker, D. R. Locus of wy^2 (formerly cx_b). Crossover counts on the male offspring of females y v f/y^2 wy^2 g^2 were made in order to determine the locus of wy^2 more accurately. The results are given: v f - 1163; wy^2 g^2 - 1111; v wy^2 g^2 - 151; f - 126; v g^2 - 27; wy^2 f - 38; v - 208; wy^2 g^2 f - 180; v wy^2 f - 1; g^2 - 0; v wy^2 g^2 f - 5; + - 5; v g^2 f - 1; wy^2 - 1; v wy^2 - 1; g^2 f - 0; Total 3018.

These data place wy^2 about 2 units to the left of garnet. 100% of the F_1 females of a cross of wy^2 x wy were phenotypically wy; there was no crossing-over observed between wy and wy^2 in 1328 offspring from wy/wy^2.

Stark, M. B. Varieties of tumors. Selected stocks heterozygous for lethal-7, where the l-7 males die from the development of melanotic growths, show that the tumors occur in characteristically different tissues. A preliminary description of the stocks follows:

& ♀ 1 Carcinoma or melanonoma of salivary gland
& ♀ 2 " " " of stomach region
& ♀ 3 " " " of lower intestine
& ♀ 4 Lympho-sarcoma
& ♀ 5 Pigmented lipoma

The third-chromosome "benign" tumor is found to involve connective tissue.

Stone, Wilson. Allemorphic phenomena. y^{35a} An allele, phaenotypically like y^1, induced in the inversion, 99b, by x-rays.

y^{31e} (y^{303h}) A mutation accompanying a long inversion, probably y^{3P} as designated by Muller, for it gives the same males hypoploid for y and ac by crossing-over with sc^8. This mutation

is between y^2 and gray in phaenotype, but gives occasional patches of y^1 bristles and microchaetes.

y^{31d} sc^8 w^a(5 k). An x-ray induced allele in sc^8, phaenotypically like y^2.

The following crosses differentiate between these alleles:

Cross			Phaenotype of F_1 ♀
y^{35a} 99b	x	y^1	y^1
y^{35a} 99b	x	y^2	gray (♂)
y^{35a} 99b	x	y^{31e} (303 h)	31e with y^1 spots
y^{35a} 99b	x	y^{31d} sc^8 w^a	y^2
y^2	x	y^1	y^2
y^2	x	y^{31d} sc^8 w^a	y^2
y^2	x	y^{31e} (303 h)	y^{31e} -- no y^1 spots,

for in y^2, all bristles and microchaetes are black. y^{31e}/y^2 appears darker than y^2/y^1, although this could not be determined accurately, since y^{31e} is so nearly normal in color.

Although y^{35a} and y^1 are phaenotypically alike, as are also y^2 and y^{31d}(sc^8 w^a), their gene action is not identical for all steps of pigment formation. Thus, the action of these yellow alleles show them to be qualitatively as well as quantitatively different.

f^{34b}: An allele of forked, induced by x-radiation, which is phaenotypically normal in both males and females. When crossed to the original forked f, it gives a few weakly forked bristles, but shows more pronouncedly when crossed to f^5. (f^5 seems to be an amorph (Muller)). This allele is not a hypomorph, but is not strongly hypermorphic, since one dose is not sufficient to compensate for an absence and form normal bristles in the f^{34b}/f^5 condition, although it often does so in the f^{34b}/f heterozygote. It is interesting to note that the action of f^{34b} is equivalent to the "position effect" action induced in the normal allele of cubitus-interruptus by translocation involving chromosome 4, as found by Dubinin and Sidorov.

Timoféeff-Ressovsky, N.W. Induction of mutations by alpha-particles in D. melanogaster. The penetration-power of alpha-particles of radium is so low that it is impossible to induce mutations by external irradiation of flies. Thus, the following method was employed with sucess: The flies were put in a bottle with a cork-stopper containing a radonator. The flies (males) were breathing the emanation produced by the radonator for about 24-40 hours. After this treatment, the males were mated to ClB-females, and in F_2 the per cent of sex-linked lethals and visibles was determined. The mutation-rate was 1% in the treated series, as compared with 0.12% in the controls, the difference being statistically significant. Exact measurements of the radioactivity of the treated flies showed that the energy of the alpha-particles, emited by the emanation and the radioactive precipitate in the fly-tissues, is equivalent to an X-ray dosage that would produce about 1.5% of sex-linked mutations. The energy of the beta-particles and gamma-rays within the same flies is so low (about 1% resp. 0.01% of the alpha-energy) as to