gross, in der Zwischenzeit aber gering. 3. Es wurden in hohen Prozentsatzen verschiedene Arten von Modifikationen erhalten, welche spezifisch sind fur die Entwicklungsstadien, auf denen die Hitzebehandlung stattfand, und in einigen Fallen auch fur die angewandten Temperaturen und Reizzeiten. 4. Der quantitative Unterschied in der Sterblichkeit sowie in der Ausspragung der Modifikationen zwischen den beiden Geschlechtern scheint auf dem Geschlechtsunterschied in der Entwicklungsge schwindigkeit zu beruhen. 5. Die sensiblen Perioden einiger erielter Modifikationen (Die Zahlen genen die Anzahl der Stunden nach dem Eintritt der bezeichneten Stadien an; die unterstrichenen die optimalen Zeitpunkte. E = Embryonales Stadium; LI, II, III = 1.2.bezw.3.Larvenstadium; P = Puppariumbildung): Flugel: (1) Uberzahlige Querader, uberzahlige Ader und Queraderunterbrechung. Spates LIII-P 30. (2) Ausfallen von Randharchen. P 10-15-20. (3) Schmalflugelig (selten und asymmetrisch). P 15. (4) Dachformig (nur nach langer Reizdauer). P 10-30. (5) Abgestutzt. P 10-20-25. (6) Abwarts gekrummt. P 0-30-45. (7) Aufwarts gekrummt. P 35-70-85. (8) Gespreizt (stark wenn lang gereizt). Fast im ganzen Vorpuppen- und Puppen-Stadium. (9) Aufgerichtet. P 70-94. (10) Blasenbildung (lang u. stark gereizt). P 30. Augen: (11) Gefurchte Augenoberflache. Spates LIII-P 15. (12) Unregelmassige Verteilung von Facettenharchen (rauh). Spates LIII-P 60. Beine: (13) Verkruppelt. E 10-20; LIII 22-P 12. Borsten: (14) Verkleinert, gegabelt und gedreht. LIII-P 30. (15) Verzweigt. P 25-40. (16) Hakenformig. P 35-50. (17) An der Spitze geknickt, geknopft. P 45-55. (18) Schwach bis ganz entfarbt. P 55-80. Aristae: (19) Harchen querlig verzweigt. P 30-35-40. Thorax: (20) Eingedellt. P 70-94. Scutellum: (21) Hornartige Auswuchse. P 10-20-30. Innere Gewebe: (22) Tumorartige, schwarze Korperchen. LIII.

Muller, William A. Possible sex influence upon the expression of a dominant blister wing.

The mutant blister-like is a dominant located 3.2 units from bw (965 total count). Small counts indicate no extreme chromosomal fragmentation. The character mainly involves wing veination and excess liquid causing a blister. All individuals do not show a definite blister. Blistery may show a minute thickening of the veins, an absence of veins, or a definite blister of the wing. Usually only one wing has a blister; however, when one wing shows a blister, the other wing always has abnormal veination. In a study on the variation of the trait, individuals were classified as (1) slight; that is, with abnormal veination and no blister; (2) definite; that is, with one or both wings having a blister regardless of the abnormal veination. The expression of the character is usually more marked in the female than in the male. Males - total count: 984; slight 788; definite 196 (80.1%: 19.9%). Females - total count: 773; slight 155; definite 618 (20%: 80%).

Neuhaus, M. Triploid stock in Drosophila simulans.

In order to obtain new hybrid combinations between D. simulans and D. melanogaster it was necessary to have triploid females in D. simulans. For this purpose, yw females with attached X's were mated to sn males. Gray females were looked for in the F_1 generation. 8 gray females were detected among 5380 yw females. Two of them gave the following progeny: One female gave 6 yw ♀♀; 1 y ♀; 3 sn ♀♀; 44 ♀♀; 3 yw ♂♂; 1 yw sn ♂; 3 sn ♂; 3+♂; 1 yw ♂; 1 w ♂. The other female gave 4+♀♀ and 1 w ♀. These data indicate the possible triploidy of these females. All gray daughters of the first female proved in further crosses to be diploid. One of the gray daughters of the second female gave 9+♀♀; 14 sn ♀♀; 2+♀♀ and 1 w ♂. It is obvious that this female was triploid. It was noted, simultaneously, that among these gray females there happen females with somewhat thickened scutellars and some other macrochactae on the thorax, a part of which was forked-like. It was surmized that these females were triploid. This was confirmed in further experiments.

The data show the offspring of females with such bristles. Obtained crosses between females with thickened bristles and sn males - Females: + = 51; sn = 64; 3N = 38; y w = 4; w = 1; y = 1; Males: sn = 42; w = 3; y w = 2; + = 3; Intersexes + = 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 sc^8 w^a f B males. The sc^8 chromosome was selected for the following reasons. It is known that the sc^8 - 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 sc^8 - 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 + + ♀♀; 4 sn ♀♀; 2 + ♂♂; 2 sn ♂♂; 4 + ♂♂; 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 cytoplasma 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 allel 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 allel of forked and two doses of forked appear non-forked. Control intersexes (2X3A) with one normal allel 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 $\frac{+}{f}$ 3A complement changes the expression of forked. Individuals of the composition $\frac{\quad}{\frac{+}{f}}$ 2A,