rapid vegetative development in the late spring, with slight increase in activity of the *Labyrinthula*, diminution in the vitality of the plant prior to seed formation in the early summer with sudden activation of the parasite, destruction of leaves, development of new leaf shoots and their subsequent destruction (repeated several times in mid-summer), and final exhaustion of a portion of the stem stock and dying back of part of the bed developed earlier. A number of plants will seed prematurely, or will appear to because more retarded members die off before the normal fruiting period is finished. Barring the development of resistent strains of *Zostera* or general attenuation of the parasite, this seems to be the probable cycle within any progressive return of the plant. This, I realize, is not a cheerful interpretation, but it will be recognized that readjustments no less drastic, but easily overlooked, occur constantly.

I should be grateful to readers of NATURE for particular information on local conditions of the eel-grass in England and on the Continent.

CHARLES E. RENN

Woods Hole Oceanographic Institution,
Woods Hole, Massachusetts,
and
Harvard University,
Cambridge, Massachusetts.

[1] C. E. Renn, NATURE, **135**, 544 (1935).
[2] C. E. Renn, *Biological Bulletin*, **70**, 148 (1936).

A Case of Complete Reversion of a Chromosomal Rearrangement in *Drosophila melanogaster*

THE process of gene mutation is known to be reversible, since back-mutations occur both spontaneously and under X-ray treatment. Yet no authenticated case of a complete reversal of a gene rearrangement has hitherto been observed. Muller and Stone[1] induced a partial re-inversion of the *ClB*-inversion of the *X*-chromosome, but neither of the new breaks corresponded to the original *ClB* breaks. A spontaneous re-inversion of the same inversion observed by Gershenson[2] has not been completely analysed; so it remains doubtful whether in this case old and new breaks coincided precisely.

In 1935, I described[3] a very long inversion of the *X*-chromosome induced by X-rays which was inseparably associated with a 'gene' for very rough eye-surface. In a stock homozygous for this inverted chromosome and carrying several recessive markers, animals with normal eye-surface appeared. Contamination was excluded by the fact that all the other factors were still present. A thorough genetical analysis showed that in these animals not only the rough eye-surface 'gene', but also the inversion had disappeared, and that old and new breaks were identical. This has since been checked up cytologically by my colleague, Mr. C. W. Emmens, in the salivary gland chromosomes.

The rough eye-surface associated with the inversion behaves allelomorphically with the factor roughest[2]. Genetical and cytological methods have hitherto failed to reveal any signs of a chromosomal abnormality associated with that mutant. Nevertheless, it remains still possible that roughest[2] is a position effect too minute to be demonstrable with our present methods.

This seems to be the first case in which a complete reversal of a gene rearrangement has been demonstrated by all available criteria. At the same time, the case furnishes crucial evidence for the existence of a position effect, since phenotypic effect and inversion appeared and disappeared simultaneously.

A detailed analysis of the case will be published in the *Journal of Genetics*.

HANS GRUNEBERG.

Department of Zoology,
University College,
London.
Aug. 28.

[1] H. J. Muller and W. S. Stone, *Anat. Record*, **47** (1930).
[2] S. Gershenson, Drosophila Information Service, No. 1 (1934).
[3] Hans Gruneberg, *J. Genetics*, **31**, 163 (1935).

Different Results in Reciprocal Crosses between Diploid and Triploid *Allium Schœnoprasum* L.

IN the summer of 1934, crosses were made between diploid forms of chive ($2n=16$) and artificial triploids ($2n=24$)[1]. The somatic chromosome numbers in the progeny of these crosses have now been determined for 100 plants and are shown in the accompanying table.

The results exhibit a decided difference, according to whether the diploid or the triploid was used as the mother plant. In the former case, the majority of the progeny obtained were diploids, only 18 out of 71 plants having different chromosome numbers, namely, $2n=22$–24. In this cross the numbers 17–21 were not found at all. If, on the other hand, the triploid was used as the mother plant, all chromosome numbers between 16 and 24, except the number 20, were obtained. The trisome class, $2n=17$, which was not formed in the former case, was now the one most numerously represented. In addition, there also occurred one plant with 28 chromosomes, the result of the functioning of a giant gamete.

Direction of cross	Chromosome number of the progeny										Total of plants
	16	17	18	19	20	21	22	23	24	Med.	
$2x$ ♀ × $3x$ ♂	53	0	0	0	0	0	4	11	3	17·8	71
$3x$ ♀ × $2x$ ♂	8	9	1	2	0	4	1	2	2	18·5	29

It is obvious that the effect of the elimination or non-formation of aneuploid zygotes is greater when the embryo develops on a diploid than on a triploid plant.

These results are in agreement with earlier work on reciprocal crosses between diploids and triploids, for example, in *Oenothera*[2] and *Zea*[3].

ALBERT LEVAN.

Sugar-beet Research Station,
Hilleshog, Landskrona, Sweden.
July 23.

[1] Levan, *Hereditas*, **22**, 1 (1936).
[2] van Overeem, *Beih. Bot. Zbl.*, **38**, 73 (1921).
[3] McClintock, *Genetics*, **14**, 180 (1929).

The Feulgen Reaction of the Bacteriophage Substance

THREE years ago, a method was described which yielded pure preparations of a *Coli* bacteriophage of large particle size (*WLL*) in weighable quantities[1]. The high phosphorus content (3·7 per cent) of these preparations and their high affinity for basic dyes