jelly-coat, which swells only after one hour of incubation. The two preparations also act in different ways when tested on a mucin solution: that from bull testis lowers the viscosity strongly and quickly, whereas that derived from sea-urchin testis acts only very slowly (Fig. 2).

Dialysis and egg water do not inactivate our preparation. Tryptic activity was excluded. The power of the preparation to liquefy the jelly-coat and to depolymerize the mucin disappears on heating at 100° C. for 5 min.

A more detailed account and a discussion of these results will be given elsewhere[9].

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Mutations in *Drosophila* Induced by a Carcinogen

Numerous attempts have been made by several geneticists to induce mutations in *Drosophila* by treating either eggs, larvæ, pupæ or adults with various chemicals. The first unquestionably positive results were obtained by C. Auerbach and J. M. Robson, who induced genetic changes in the sperm of males by exposure to the vapours of various mustards. There is very little doubt that the method of treatment developed by Auerbach and Robson contributed significantly to their success. This method can be used with chemical substances that can be handled as vapours.

For almost two years I have been working on a method that permits the use of chemical substances in solution. *Drosophila* males are kept in an atmosphere containing a fine ærosol of the solution being tested for mutagenic capacity. So far twenty-one substances have been investigated. An aqueous ærosol of nitrogen mustard (*HN2*) was the first to give positive results[1], indicating that the method is effective. Experiments are now in progress to test the mutagenic potency of several carcinogens, applied as ærosols of oil solutions. The first to be used was 1,2,5,6-dibenzanthracene. It gave positive results. Sperm of treated males was tested for X-chromosome lethals by the standard *ClB* method, and a considerable increase in the proportion of lethal mutations was observed.

	Chromosomes tested	Lethals	Per cent
Controls	7,755	3	0·04
Tests of 19 substances	47,028	18	0·04
Nitrogen mustard	5,491	90	1·67
1,2,5,6-dibenzanthracene	3,257	29	0·89

All lethals obtained in these experiments are being tested for chromosomal aberrations. The first results indicate that dibenzanthracene induces breaks in chromosomes as well as mutations.

Experiments with several carcinogens are now in progress, to determine if there is any correlation between carcinogenicity and mutagenic capacity in chemicals.

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Selective Mating as a Factor for Speciation in Cichlid Fish of East African Lakes

In most of the modern texts on evolution[1], one of the outstanding proofs of speciation, that is, development of forms separated from one another under normal conditions by their immiscibility, without geographical isolation, is the very high number of species and genera of the Cichlidæ in almost every one of the great lakes in East Africa. This remarkable phenomenon (Woltereck's "*schizotypische Artaufspaltung*") is characteristic only for the Cichlidæ of the East African lakes; other genera of freshwater fish can be represented in the same area also by more than one species, but in no other family is the diversity of types—some of them being specialized to a certain mode of life and nutrition—so well developed as in the Cichlidæ.

A plausible interpretation of this fact is still wanting, because the many factors influencing the rapid tempo of evolution proposed up to this time (existence of predators, small number of individuals occupying a new niche, old age of the lake basin in question, etc.) do not fit all lakes in the same manner and, on the other hand, would be applicable also for fish of other families. So there must exist, with high probability, a special mechanism in the Cichlidæ favouring a splitting-up in smaller groups with preferred mating tendencies *intra se* not found in the other groups.

The Cichlidæ show in varying degrees very characteristic breeding-habits. Where in other fish there is parental care for the brood, generally only one of the parents is involved; in the majority of the cases it is the male that is concerned with defence, aeration, etc., of the eggs and care of the young fish. In the Cichlidæ, however, there are many cases where the two parents co-operate in their care for their brood. (In some of the genera, for example, in the mouth-breeders, only one of the sexes is involved.) Normally the two sexes live in monogamy[2], at least for the time of one brood, lasting from the beginning of nesting to the end of the family life with the fry which begin an independent life only some days or weeks after hatching. It is easily understandable that, by the introduction of a type of monogamy, even if it is only for one breeding period, a factor is involved which acts against panmixia. Furthermore, it is a well-known fact, which has been observed by a great number of fish-breeders, that in the selection of the mate there is a clearly visible preference between two individuals in a larger swarm of fish of the same species of Cichlidæ. The two mates, long before egg-laying begins, choose a certain corner of the aquarium and do not allow other fish to approach it. This fact proves that pair formation is not haphazard, but conditioned by some psychological factor which results in a strengthening of a relative sexual isolation of different pairs or families from one another. At least under aquarium conditions the continuity of the monogamic life of a male with a certain