not lead to the establishment of a tetraploid race, whereas the immersion method produced only a minor proportion of such indivduals. The chief feature of the aerosol method for applying colchicine to plants appears to be that the drug may be dissolved in toxic penetrating agents of various kinds and spread on plant surfaces in sublethal amounts in a highly dispersed form, a result that could be attained in no other way. It is possible that a penetrating agent may be found that will carry colchicine into tree buds and other complicated meristems of plants when applied in aerosol form, and further work is in progress with this objective.

It should be pointed out that this method of applying colchicine to plants should not be used except under carefully regulated conditions because of the danger of breathing the poisonous aerosol.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

THE DETECTION OF SPERM IN THE EGGS OF INSECTS

It is frequently desirable in genetic studies to know whether all eggs laid by impregnated females have been inseminated. The usual method of preparing sections for this purpose is entirely unsatisfactory, for besides the great amount of labor involved in making such preparations, many eggs are injured or entirely destroyed in the process. What is needed is a rapid method which permits the accumulation of accurate, quantitative data that will be statistically significant.

In connection with our studies in the genetics of Drosophila, we have developed such a method which should be equally useful in similar studies on other insects. The method is as follows: Three or four eggs, which have been removed from the culture by means of a needle with a spatula-like tip, are placed on a clean slide at a distance of about one third its width from the anterior margin and arranged, properly spaced, in a row with their micropile ends all directed away from the observer. A cover-slip is then rested on the eggs and one or two drops of a physiological salt solution placed at the edge of the cover glass. Capillary attraction pulls the cover-slip down and forces the contents of each egg out through a rupture at or near the micropile. This gives a uniformly thin smear, which is more or less circular in outline.

By means of a mechanical stage, such preparations can be very quickly searched under a high-dry objective, and if sperm are present, they are easily detected. Inseminated eggs of Drosophila usually contain two or more sperm, but even though only a single sperm is present, it can be observed readily. The detection of spermatozoa in the egg of Drosophila is facilitated by the fact that they become coiled into ring-like configurations, apparently soon after entering the egg. In general, it is best to examine freshly laid eggs, although it is possible to detect the sperm as late as eighteen hours after they have been laid.

We have found this technique useful as a means for clearing up various points in genetics. It has been especially useful as an analytical method in determining zygotic viability. In certain interspecific crosses it has been possible to show by this method that secretions of the female reproductive ducts inactivate or kill the foreign sperm within twenty-four hours after mating has occurred. It is also a simple method for determining whether mating has been successful, without having to destroy the female in order to see if her sperm receptacles contain spermatozoa.

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DESTRUCTION OF FOAM IN VOLUMETRIC FLASKS

In the preparation of samples for vitamin assay we have been much troubled by foaming. Under circumstances in which we did not want to add a surface active substance, this greatly delayed accurate dilution in volumetric flasks. We have found that the foam can be quickly broken by alternate suction and its quick release.

An appropriate size of single-hole stopper is attached to a short length of glass tubing. This is thrust into a rubber hose connected with an ordinary water pump. When the foam begins to rise in the neck of the volumetric, the stopper is quickly withdrawn. The inrush of air destroys the foam bubbles.

Care must be taken not to draw off some of the foam, but one soon learns to judge the correct amount of suction to apply. The solution should also come well up into the neck of the flask to minimize the danger of implosion.

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