the results to steric factors alone, since the bulk of the nitro group is much less than that of, say, $-\overset{+}{N}R_3$, or $-\overset{+}{S}R_2$; it seems, in fact, to be more similar to that of the halogens, which give Saytzeff orientation. The products are, however, in line with the Hughes-Ingold classification, since the nitrogen of the nitro group carries a unit formal positive charge.

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Inhibition of Mold Contamination in Drosophila Food Using Sodium Orthophenylphenate

ALTHOUGH general use of *Drosophila melanogaster* as an experimental animal in genetics and general biology classes and research has been facilitated by heat sterilization or the incorporation of fungistatic substances in the food, a number of reports from colleges and universities indicate the need of a still more reliable and efficient method of mold control. The following method has been used by the author since 1942 with complete elimination of molds and with consistently high *Drosophila* population numbers. The cornmeal medium, the preparation of which has been outlined by Bridges (*1*), Lebedeff (*2*), and Sinnott and Dunn (*3*), was used with slight modification, but with sodium orthophenylphenate as the fungicide.[1] The ingredients used were: 15 g agar dissolved in 500 ml of water; ¾ g of Dowicide A dissolved in 10 ml of 95% ethanol; 125 ml dark corn syrup; 110 g of yellow cornmeal in 250 ml of water. The ingredients were mixed in the order given here, dispensed in containers, and allowed to cool. A heavy suspension of compressed yeast in water was then poured over the surface of the medium. After 24 hr the surplus yeast suspension was drained off. This medium has been stored for many weeks without becoming contaminated, and attempts to get several species of *Penicillium* and *Aspergillus* to grow on it have been unsuccessful. As yet no systematic study has been made of the effects of sodium orthophenylphenate in other media used for food for *Drosophila* or other animals, except that it has been shown that 0.5-g or 1-g lots when added to one l of Pearl's S101 medium (*4*) prevent fly reproduction.

[1] The sodium salt of orthophenylphenol used in the experiments was contributed by the Dow Chemical Company as Dowicide A.

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Channel Area in Electroconvection Apparatus

SEVERAL designs of apparatus have been described recently (*1–7*) for the laboratory use of electrodecantation or electrophoresis-convection. (I prefer to shorten this name to electroconvection.) It is not generally recognized that within wide limits, which include the usual range of laboratory apparatus, the rate of fractionation in electroconvection apparatus is practically independent of the channel face area. This conclusion has been confirmed experimentally by comparison of different cells and can be derived theoretically from the equations given by Brown (*8, 9*) for the characteristic transport time.

In the following equations the symbols employed are those of Kirkwood (*9*), viz:

θ = characteristic time of the transport function
V = volume of top reservoir
D = diffusion constant of solute

$h = \left(\frac{4\eta lD}{\alpha\rho_0 g C_0}\right)^{1/4}$ with η the viscosity and ρ_0 the density of the solvent, l the height of the channel, α and C_0 the partial specific volume and the concentration of the solute, g the acceleration of gravity

μ = electrophoretic mobility of solute
E = field strength in the channel
(Other symbols employed are defined as used.)

$$\theta = 2VD/hA\mu^2E^2 \qquad (1)$$

in which the field strength E is calculated from the total electric current I through the apparatus and the area A of the channel face: $E = I/kA$, where k is the conductivity of the solution. The electric power consumed in the channel is given by $H_c = RI^2 = aI^2/kA$, where a is the distance between the channel faces. Substituting in the equation for θ,

$$\theta = 2VDak/h\mu^2H_c \qquad (2)$$

This equation shows that for fast transport it is not necessary to use large areas of membrane which are difficult to support satisfactorily. A channel area of 1×12 cm was equal to one or 3×20 cm in transport rate, at equal power level.