Strickland, W. N. and D. D. Perkins. Rehydrating ascospores to improve germination.

Ascospores from dessicated crosses germinate poorly if heat-shocked directly after harvesting or isolation. The low germination con be overcome by rehydrating either in water or on the surface of fresh agar medium. We obtain good results, when isolating from old cross tuber, either by adding sterile water to the tube 12 hours before isolating or by isolating the ascospores from the dehydrated cross tube to fresh slants, which are then left overnight at room temperature (21°C) b efore subjecting them to heat-shock. (Longer Periods of storage without refrigeration might result in sufficient mycelial growth that heat shocking would not kill all vegetative cells.)

Quantitative data on the effect of dehydration and rehydration were published earlier (Strickland 1960 J. Gen. Microbiol. 22: 585). We ore prompted to call attention to the effect once again because it does not seem to be generally known, especially by those beginning to work with Neurospora, and because dehydration con seriously impair efficiency if it is unremedied. In the 1960 report, germination was reduced to less than one-third after 27 days; this was restored to 97.5% by rehydration.

Rehydration is not necessary when our standard procedure for crosses is followed. Crosses ore made on 10 ml slants in large tuber. Spores ore ripe and germination is good 27 days after first inoculation. At this time the water loss from evaporation will

have shrunk the slant somewhat, but not so as to dessicate the spores. Only if isolation is delayed until the agar has shrunk to half or less its original volume do we take steps to assure that ascospores are hydrated. With crosses in small tubes (10 x 75 mm), drying out occurs quickly and rehydration is more likely to be necessary.

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