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test injection was 80,000. Seven out of 10 experiments were positive, in that the second animal, which received aortic blood from the first animal, subsequently developed leukemia.

It is concluded that cells capable of producing leukemia can pass unarrested through the pulmonary circulation.

### **A Quantitative Analysis of Time Relationships in the Early Cleavage of Normal Fertilized Eggs of *Echinarachnius parma*, and the effect of Photodynamic Action.**

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Quantitative studies of the time relationship in the early cleavage of *Echinarachnius parma* were done according to Method 2 of Blum and Pierce (Jour. Gen. Physiol. 33: '50). In normal fertilized eggs the time from fertilization to first cleavage was 115-130 minutes. The interval from first to second cleavage was 40-43 min. and the second to third cleavage interval was 39-42 minutes. The temperature maintained during the study was  $16^{\circ}\text{C} \pm 0.5$ . A scatter plot for each egg counted from a single female was made. This plotted the time of the interval, fertilization to first cleavage, against the time from fertilization to second and/or third cleavage. The plot indicates no correlation in the order of eggs cleaving for any given cleavage. However, the average time interval between cleavages is fairly constant when taken from different animals.

When sperm were placed in a  $1.1 \times 10^{-7}\text{M}$  solution of toluidine blue in sea water and exposed to light for two minutes the interval, fertilization to first cleavage, was extended about 25 minutes. Subsequent cleavages were not affected, neither was there any detectable effect on later development. However, if the time of exposure to light was 10 min. cleavage was abnormal. Sodium sulphite would reverse both of the above effects. A dark reaction was not detectable at the concentrations used for the photodynamic action.

### **Transfer of Drugs From Blood to Brain, Muscle and Cerebrospinal Fluid of *S. Acanthias*, *Gadus Callarias* and *R. Catesbiana***

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It has previously been established (Zubrod 1953) that the "barrier" to the transfer of sulfanilic acid from blood to the central nervous system of *S. acanthias*, excluded the drug from brain but not from cerebrospinal