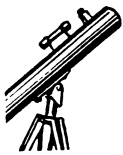


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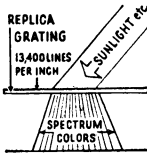
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BIOLOGY

RNA Influences Cell Differentiation

➤ **RIBONUCLEIC ACID** has been pinpointed as having an essential role in cell differentiation, the process by which the early embryo's look-alike cells become nerve, bone, skin and other organs.

Working with extremely small quantities of cellular material, 20 to 50 cells, taken from embryonic newt and salamander tissue, Dr. M. C. Niu of the Rockefeller Institute for Medical Research, New York, found that the presence of ribonucleic acid is critical for the formation of specialized tissues. He used cells removed from two-to-five-day-old fertilized eggs that under ordinary circumstances would become epithelial or skin tissue. These cells, Dr. Niu told SCIENCE SERVICE, have the unique characteristic of multi-potentiality: theoretically they could become nerve, bone or kidney cells.

This is believed to be the first practical demonstration of the cells' multi-potentiality.

By growing the cells in a hanging drop of saline solution that included a 97% pure extract of nucleic acid and protein taken from cow tissue, Dr. Niu was able to control cell differentiation. If the ribonucleic acid had been obtained from the kidney then the original unspecialized cells would develop into tubules when they were transplanted into living embryonic tissue. If the thymus gland had been the source for RNA, thymus-like cells would show up.

There is a very exact amount of ribonucleic acid necessary to control the cell differentiation activity, Dr. Niu found, either more or less will yield no results. Between 0.3 and 0.5 micrograms of RNA per hanging drop was found to be the optimum concentration.

There is direct relationship between the amount of RNA and the power of the cells to differentiate. With 40% of RNA removed, 12% of the differentiating activity of the tissue culture was lost.

Dr. Niu reported on his research to scientists attending a developmental biology symposium of the American Society of Zoologists meeting in Bloomington, Ind.

Science News Letter, September 13, 1958

MEDICINE

Vision Clouds as Cocktails "Make Life Rosy"

➤ **THE BELIEF** that a few cocktails will enable a drinker to "look at the world through rose-colored glasses" is inaccurate. The color is more likely to be grey.

A study of the effect of alcohol on vision and hearing revealed that alcohol had the same effect on vision as that of setting a grey glass in front of the eyes, or driving with sun glasses in twilight or darkness. Stronger light is needed for distinguishing objects and dimly lit objects may not be seen at all, Dr. Rollo N. Harger, professor of biochemistry and toxicology at the Indiana University School of Medicine, re-

ports in the *Journal of the American Medical Association* (Aug. 30).

Furthermore, alcohol tends to cloud the ability to differentiate between tones.

The difficulty arises because of the depressant effect of alcohol on the central nervous system. Most of the drug effects of alcohol are due to its presence in the brain, which it enters within seconds after it appears in the blood.

Small amounts of alcohol seem to cause a temporary rise in pulse rate, blood pressure, and total blood flow. In addition, the liver's ability to break down sugar becomes impaired. It appears unlikely, however, that the moderate use of alcohol produces any kidney damage.

Science News Letter, September 13, 1958

SCIENCE NEWS LETTER

VOL. 74 SEPTEMBER 13, 1958 NO. 11

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington 6, D. C., North 7-2255. Cable Address: SCIENSERV.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 7 1/2 cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage.

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Printed in U.S.A. Entered as second class matter at the post office at Washington, D. C., under the act of March 3, 1897. Acceptance for mailing at the special rate of postage provided for by Sec. 34.40 P. L. and R., 1948 Edition, paragraph (d) (act of February 28, 1925; 39 U. S. Code 283) authorized February 28, 1950. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member Audit Bureau of Circulation.



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