

## Biological Briefs

SCHMITT, FRANCIS O. *The Electron Microscope in Biological and Medical Research*. The Science Counselor 19: 67-68. September, 1946.

This up-to-the-minute paper deals with the recent advances in biology and medicine that have been made by using the electron microscope. In the short space of only five years since the electron microscope became available in this country, plant and animal viruses have been studied. Some that have been studied with success are the viruses causing such serious diseases as poliomyelitis, rabies, encephalitis, and others. Bacterial viruses called bacteriophages, are seen to possess a small head and a thin short tail, resembling a tadpole.

Not so long ago it was supposed that molecules would never be visualized directly. Now with the electron microscope giving a useful magnification of over 100,000 times, the larger protein molecules, like hemocyanin, and several smaller ones as well have been revealed. The new technique of shadow casting is extremely valuable in dealing with these small particles.

Dr. Schmitt shows with some detail how the electron microscope works, and explains the techniques by which the biological studies have been made. He predicts that ". . . we are on the threshold of the greatest era of discovery in the entire history of biological science."

*Erythrin Vs. Diphtheria*. Science News Letter 50: 292. November 9, 1946.

This penicillin-like antibiotic called erythrin is extracted from red blood cells of rabbits. It is reported by Dr. L. A. Silber of Moscow, Russia, to be very effective against different kinds of disease germs and particularly against the germs of diphtheria. Diphtheria patients and healthy carriers of diphtheria germs are at present being treated with erythrin, according to the report. First-hand account of this new antibiotic is being given American scientists by Dr. Vassily V. Parin, secretary general of the Academy of Medical Science of the USSR and Professor of Physiology at the Third Moscow Medical Institute.

A report is also being made on the famous K.R. anti-cancer vaccine under trial in Russia. This vaccine comes from a protozoa. Some but not all of the few breast- and skin-cancer patients treated have recovered clinically. However, not unless and until they have remained free of cancer for five years will doctors in Russia or elsewhere be satisfied

that the vaccine is a cure for cancer. Dr. Parin suggests that a whole new branch of the science of antibiotics may be opening as a result of this recent discovery of erythrin.

GORDON, ROBERT B. *Vitamin B<sub>1</sub> Activation of Protoplasmic Streaming*. The Educational Focus 17: 18-21. Fall, 1946.

The common water plant *Elodea* is probably the favorite plant used to detect movement of the chloroplast. The choice parts of the plant are the young leaves within an inch or two of the tip of the stem, and the cells near the midribs of these leaves are usually the most active. The results obtained from mounting these choice leaves in tap water alone, however, is often disappointing, as there is little or no movement of the chloroplasts.

Mr. Gordon says very good results have been obtained in his laboratory by adding a few drops of Vitamin B Complex solution to the water mount. The solution is prepared by dissolving approximately half of the contents of a gelatin capsule Vitamin B Complex (Lederle) in a half pint of water. He suggests that *Elodea* even under the most favorable conditions is likely to be deficient in thiamin because it is a water-soluble vitamin, and because it diffuses readily through non-cutinized cell walls. The author also calls to the readers' attention how this increased activity of the chloroplasts when Vitamin B<sub>1</sub> is added demonstrates the effect of this important food element. It is an excellent occasion to emphasize the dietary importance of adequate Vitamin B<sub>1</sub> intake at all seasons of the year, particularly when the calorie intake is increased or when there is a great loss of fluids by perspiration or kidney functions. The water-soluble Vitamins B and C are easily acquired from the proper foodstuffs and various synthetic sources, but they are just as easily lost. Unlike Vitamins A and D, they are not retained in the body for several weeks following their intake.

EIFERT, VIRGINIA S. *The Bird Explorers*. Nature Magazine 39: 461-464, 498. November, 1946.

Ever since the Pilgrims came to Plymouth, men, with unending enjoyment, have been discovering and naming American birds. Some birds reminded the homesick settlers of birds in England, so many of them received familiar English names. For example, they called our russet-breasted thrush a robin; our finches sparrows; our falcon a sparrow hawk. They named our redwings and grackles "blackbirds" even though they are orioles. But the greater number of our birds lived wild, free and unnamed through-

out the tremendous unexplored continent until such explorers and naturalists as Mark Catesby, Alexander Wilson, William Swainson, George Ord, Lewis, Clark, Sir John Richardson, Audubon and many others came and passed by their habitats. At that time there was no systematic method of determining names nor standard authorities on American birds. It was a completely unexplored field. Only a few of the birds these men found bear their names, for it was not the practice for the naturalist to give the newly discovered bird his own name. Birds named after naturalists acquired their names from the man's friends rather than the discoverer himself. Linnaeus named many American birds which he never saw. He named them from other men's descriptions, from their drawings and some from dead specimens. Gradually as the birds received names from various sources there were a few of the finders' names attached to them. For example, Swainson's hawk was named for the naturalist William Swainson, by Prince Charles Lucien Bonaparte, brother of Napoleon; the chattering nutcracker of the Rockies was called Clark's nutcracker after the explorer Clark; Lewis' woodpecker was named after the other member of the expedition; Audubon named the Townsend's solitaire after his friend Dr. Townsend, and the list could be continued much farther. Birding in those days was not always a gentle pastime and it seems only fitting that some of these names should remain as an enduring witness to those who sought new birds so earnestly.

SHARRITT, GRACE V. *Homecoming of the Elk*. Audubon Magazine XLVIII: 348-354. November-December, 1946.

Near Jackson, Wyoming, is located one of the most picturesque wildlife refuges in the nation. This is the National Elk Refuge. This area has the largest concentration of elk in the world. In 1945-46 the Jackson Hole herd was estimated at about 15,000. Some time in November each year, about half of this vast herd from the headwaters of the Snake River and timbered slopes of the Gros Ventre migrate down to the National Elk Refuge. It is the certain food and shelter that prompts this great migration. Before the establishment of the refuge, thousands starved each winter, and thousands more ate from the rancher's hay piles. It was a toss-up whether the ranchers or the elk would control the valley. Finally in 1911 and 1912 Congress made appropriations for the establishment of the refuge. It is now under the administration of the Fish and Wildlife Service. The refuge consists of 25,000 acres, and last year 1650 tons of alfalfa and other hay-producing plants were

fed to the "hay-burners" during the artificial feeding period. The range and the food supply is no longer adequate and one cannot help but wistfully speculate as to the fate of the magnificent primitive remnant of earlier days.

LOREN W. MENTZER

Several letters have been received in recent months asking, in various words and in different degrees of detail, this question: "Where can we find suggestions for worthwhile activities to keep up the interest of our Biology Club?" Evidently many teachers have organized biology or science clubs and have found after the first year or so that the well of ideas tends to run dry. We have not published an article in this field for some time, and are awaiting the arrival of suitable manuscripts. In the meantime, don't hesitate to send any items, however brief, which describe ideas that have worked for you and which you feel you would like to share with other teachers.

## RECENT PUBLICATIONS

*Annual Report of the National Foundation for Infantile Paralysis*. 120 Broadway, New York 5, New York. 78 pp. 1946.

An excellent overview covering the period from June 1, 1945, to May 31, 1946, of the infantile paralysis problem—where the epidemics were, how they were handled, methods of individual care, types of work underway, how the money was spent, and the personnel responsible for the various activities.

GRUENBERG, BENJAMIN C. *How Can We Teach About Sex?* Pamphlet No. 122, Public Affairs Committee, Inc., 22 East 38th Street, New York 16, New York. 32 pp. 1946. 10 cents.

A brief analysis of the present situation, giving some of its causes; the difficulties and the errors of some of the past methods; the role of the school in relation to the home and church; and some important "do's and don'ts"—sex is not a disease for medicine, or a subject like history or arithmetic; the new developments, approaches and future problems, including the training of leaders; a classified reading list.

STOLZ, CHARLES E. *Stop! Look and Listen!* Bulletin 47, Bureau of Educational Research, College of Education, University of Florida, Gainesville, Florida. 11 pp., mimeo. 1946.

A report of the program of audio-visual education at the Winter Haven, Florida,