

Biological Briefs

ALLEN, W. E. *Cutthroat Competition in the Sea*. *Scientific Monthly* 49: 111-119. August, 1939.

Many predators engage in strenuous competition to feed on the schools of sardines in California waters; yet sardines survive. Perhaps such ravages on sardine number reduce the amount of intraspecific competition for food. Inshore, where sedentary organisms seasonally release immense numbers of reproductive cells in tide-pools, competition among the young in finding places on which to settle is very strong. Good examples of these are barnacles, which even settle down on each other and crowd out their neighbors in the struggle for space, oxygen, and food. In some colonies, serpulid worms kill off the barnacles by rapid multiplication which results in suffocating or starving the previous residents. Bryozoans may similarly kill barnacles. Mussels likewise compete with one another for space on piers and rocks between mean high- and low-tide lines. Such struggles result in the survival of the strongest. Large colonies of sedentary marine forms attract predators, such as starfish, which also serve to relieve competition. Active rivalry is thus one of the most important and common of natural phenomena.

WELLS, W. F., M. W. WELLS, and STUART MUDD. *Infection of Air*. *American Journal of Public Health* 29: 863-879. August, 1939.

The article reports on the effectiveness of a new means of disinfecting air for hospitals and all other structures where freedom from the danger of air-borne disease is necessary. It consists of passing air through a curtain of ultra-violet light. Studies of the extent to which

diseases may be carried by air have also been made. The contagion of infectious diseases among children is often directly proportional to the amount of confinement in poorly ventilated quarters. Airborne infection has been fairly well established in measles, psittacosis, dog distemper, tuberculosis, pneumonic plague, influenza, and poliomyelitis.

HEINEMAN, PAUL G. *Friendly Bacteria*. *Hygeia* 17: 792-794, 853. September, 1939.

In spite of the existence of many types of harmful bacteria against which medical science does battle, in reality human life depends on a far greater host of helpful kinds. Even pathogenic bacteria are cultivated for the production of antitoxins and vaccines. In foods, bacteria are responsible for turning alcohol into vinegar, giving butter and cheeses their flavor, and producing buttermilk. Nitrogen-fixing bacteria provide soil nitrates. Bacteria of decay are of immense value in returning minerals to the soil. Such decaying material is of greatest value as plant fertilizer when lime has been added to neutralize soil acids, and when oxygen has been provided through plowing. Other types of bacteria serve to purify sewage and waste-polluted streams. In industry, pure cultures of bacteria and yeasts are now being used extensively.

MELLANBY, KENNETH. *The Functions of Insect Blood*. *Biological Reviews, Cambridge Philosophical Society* 14: 243-260. July, 1939.

Insects have no closed circulatory system; the blood circulates around the body tissues propelled by an open, pulsating dorsal tube in most species. The blood makes from 15% to 70% of the body

weight. The blood cells are not respiratory, but phagocytic in function. They ingest muscle tissue at the inception of the pupal stage, dead tissue during each moult, and invading bacteria and protozoa. The blood plasma has among its functions the following: water storage; transportation of digested food; occasional food storage; respiration, subsidiary to the tracheal system; protection against predators through reflex bleeding of distasteful plasma; immunity against microorganisms; and mechanical pressure for emergence of the insect from egg, moulted exoskeleton, and pupal case. Clotting, when exhibited at all, appears so slow as to be of no apparent protective value.

KANSAS ASSOCIATION OF BIOLOGY TEACHERS

The Kansas Association of Biology Teachers in their annual meeting at Topeka on November 3, elected the following officers for the coming year:

President—Dr. J. A. Trent, K.S.T.C., Pittsburg.

President-elect—Dr. John Breukelman, K.S.T.C., Emporia.

Vice-Pres.—Mr. Ira Hassler, Chapman.

Sec.-Treas.—Miss Gladys Beck, Kansas City.

Dr. D. F. Miller, of the Ohio State University, addressed the Association on "The Uses of Materials in the Teaching of the Biological Sciences." Dr. Breukelman discussed "The Aquarium as a Teaching Device," and Miss Frances Hutchinson discussed "Practical Biology" at the meeting. Dr. Dellinger, the retiring president, addressed the group on "The History of the Kansas Unit, and of The National Association."

The Kansas Association is cooperating with the State Department of Education in the preparation of a Course of Study for high school biology for the State of Kansas. A committee was also appointed to assist the Advisory Committee of the State Textbook Commission in the selection of a suitable textbook for the high schools of the State.

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