

may safely deposit in the sea. Some thoughtful people believe that we should put none of this stuff in the ocean, because we know so little about this aspect of the ocean ecosystem. Others, equally thoughtful, believe that we can dispose, within limits, of radioactive material. What we do not know about this aspect of marine biology is our greatest gap. It involves all these problems of the identity as well as the individual physiology of marine organisms, their feeding rates, their migrations, both up and down (as in the scattering layers), and to and fro with current systems and less regular patterns of oceanic water movements, and of the structure of communities. There is indeed much to be done, and many ways in which enlightened teachers can contribute, both through their own activity and in inspiring able students. The essential aspect of all research is to limit the scope of the problem to be tackled so that it does not exceed either the material or intellectual resources of the researcher. Thus we are back to our definition of research as the art of asking meaningful questions. It is true that many of the problems of marine biology are beyond the simple resources available to most of us, but even the greatest problems have simple aspects. No single person can expect to know the identity of all the creatures in the sea, and for the individual this question may take some such form as "What sea slugs can be found on the California coast," to name as an example one recently published report.⁷ As for more complex questions, we can remind ourselves of the example of spontaneous generation. This remained one of the great questions of biology through the centuries until Pasteur designed his ingeniously simple experiment to demonstrate the fallacy of this hypothesis some ninety-nine years ago.

Geniuses with such simple minds are rare, however, and philosopher's stones and magic talismans are even rarer. In the meanwhile there is work to be done, and ample opportunity for all who go to the seashore with an inquiring and informed mind to make useful and essential contributions to knowledge. Chance, as Pasteur said, favors the prepared mind, and conversely, chance may be wasted on an unprepared mind. There are many chances along the seashore as well as out in

⁷Marcus, E. 1961. Opisthobranch molluscs from California. *The Veliger*, Vol. 3, Supplement.

the deep ocean, and the moral need not be labored further.

Bionics

Scientists and engineers in their search to understand the world about them and make that knowledge useful turn constantly to nature for clues. At the second annual Bionics Symposium, sponsored by Cornell University and the General Electric Company some 300 scientists and engineers heard reports on studies of such organisms as baby chicks, leaves, and frogs, and how they may be applied to man-made systems such as radar.

An experimental machine, described by A. J. Cote, Jr., of the Applied Physics Laboratory of Johns Hopkins University employs processes patterned after those used by a frog in spotting and capturing insects and has demonstrated the ability to distinguish targets on a radar screen from background noise. Mr. Cote revealed how studies of the visual processes of a frog provide the basis for developing machines capable of fully interpreting radar displays.

Research Institute

A Basic Health Research Institute has been established in Tucson, Arizona, where qualified scientists may conduct basic research on problems of their own choosing. Inquiries should be addressed to Dr. Beatrice Gelber, Basic Health Research Institute, 509 N. Santa Rita Avenue, Tucson, Arizona.

NSTA Meeting

San Francisco is the site for the March 9-14, 1962, meeting of the NSTA. The convention will develop a series of "policy" resolutions for NSTA. A curriculum center under the direction of Prof. Paul DeHurd of Stanford will be a feature attraction. Major speakers include Dr. Ralph Tyler of the Center for Advanced Study in the Behavioral Sciences; Emilio Segre, Nobel winner in physics; and Vice-President Robert MacVicar of Oklahoma State University.