

swim, but not the slightest difficulty was encountered in carrying out the experiment. With the big copper helmets weighted with lead to hold each diver down and connected to hand pumps on the deck by fifty feet of ordinary garden hose, it was possible to walk around in perfect comfort and pass beneath the boat where those above could plainly see every move through the big glass in the floor of the dark-room.

Sharks and barracuda abound in the waters about the Florida Keys, but they were apparently kept off by the strangeness of the apparitions that constantly bubbled great bubbles of air to the surface as they stalked about among corals, sponges and sea fans.

The writer had used the helmets in 1925 while with Mr. William Beebe among the Galapagos Islands and Cocos Island. While there we found that at a depth of thirty or thirty-five feet, the water rose in the helmet about to the level of the diver's chin, compelling him to keep his head erect. In the shallower depth, chosen for the class experiment, water remained probably two inches lower.

The trip was an experiment, but it proved highly successful and similar ones will take their places as part of the regular schedule of course work in the zoology classes of the university.

JAY F. W. PEARSON

UNIVERSITY OF MIAMI,  
CORAL GABLES, FLA.

### SCIENTIFIC THEORIES

THERE are indeed grave objections to the use of the word "belief" as a name for the attitude of a scientist toward a proposition, law or theory which he employs in his thinking, experimenting or writing. Dr. E. C. L. Miller's communication in the issue of *SCIENCE* for March 23 is very pertinent.

His letter suggests to one reader who has given some thought to this matter in recent years such questions as these:

(1) Why should not some of our able popularizers and socializers of science employ their skill to disseminate a knowledge of and an interest in the scientific attitude and method as well as in more transient information in regard to scientific progress? There are opportunities from time to time, as, for instance, when Einstein spoke with such complete detachment of how his theory of special relativity must fall if the Dayton Miller experiments showing ether drift should be confirmed. "Experiment is the supreme court," said he. This might have been dramatized. Fully utilized, his attitude might have done quite as much for the advancement of science as the Miller experiments.

(2) Why should it not become a fixed policy of writers and publishers of text-books in science to see

to it that every science book in the future should contain a page or two, at least, intended to make clear to students that there are certain scientific attitudes common to all sciences which are even more important than the specific information constituting a particular science?

(3) Why should not every teacher of science who reads Dr. Miller's letter or this, attempt to formulate for himself and for his students, a little more carefully than he has heretofore, his own conception of the difference between scientific "acceptance for use" on the one hand and "belief" on the other?

In the institution from which I write a considerable number of students have been taught each year recently that real scientists do not believe their theories and laws as other people believe their inherited and absorbed beliefs; that scientists use their generalizations as tools of thought and guides in experimentation and observation; that, in their more rational and more philosophical moments, at least, scientists do no more "believe" their theories, laws, etc., than they believe a benzene ring diagram or a logistic curve. Their generalizations work to correlate and coordinate concepts, observations and experiences with one another. That is enough.

SELDEN SMYSER

WASHINGTON STATE NORMAL SCHOOL,  
ELLENSBURG, WASHINGTON

### SCIENTIFIC BOOKS

*Entomologie d'Haiti.* By GEORGE N. WOLCOTT. Republic of Haiti. Published under the direction of the Service Technique du Département de l'Agriculture et de l'Enseignement Professionnel. Port-au-Prince, Haiti, 1927. 440 pp., 133 figs., 8vo, cloth.

THIS volume, which is the second of a series of works written for the use of the students of the Central School of Agriculture of Haiti, is far more than the usual government or state bulletin.

It is necessarily largely a compilation of the facts known to every entomologist, which form the basis of the study of insects, and yet Dr. Wolcott has given his book quite a tropical flavor. The reader will be surprised at the start by the many excellent illustrations, many original and by the author or by M. Fritz Maximilien.

The work begins with a short discussion of entomology as a science and as a branch of zoology. The next chapter is headed "Les Arthropodes," and defines the members of this group and gives much interesting information.

The external anatomy of insects is next taken up, then internal anatomy and then development.