elle; May 1, American Chemical Society, regular meeting; May 8, Société de Chimie Industrielle (in charge), joint meeting with the American Chemical Society, American Electrochemical Society and Society of Chemical Industry; May 15, Society of Chemical Industry, regular meeting; June 5, American Chemical Society, regular meeting.

FREE lectures and demonstrations are being given at the New York Botanical Garden in the Central Display Greenhouse, Conservatory Range 2, as follows: December 6, "Fruits and seeds in winter," Dr. H. A. Gleason; December 13, "Rubber plants," Dr. A. B. Stout; December 20, "Greenhouse pests," Dr. F. J. Seaver; December 27, "A study of birds and their nests," R. S. Williams.

AT the Baltimore meeting of the American Chemical Society, which will be held during Easter week, the Division of Industrial and Engineering Chemistry will hold a symposium on corrosion. At the present time the tentative outline of the symposium is as follows: 1. Submerged corrosion of metals. *a.* Iron and steel. *b.* Non-ferrous metals. 2. Atmospheric corrosion. 3. Corrosion of special alloys. It is hoped that the scope of the papers of this symposium will cover the problems of corrosion in the heavy chemical industry, in the special chemical industry, in the marine world, in ordnance equipment, in the oil industry, mining industry, etc. Papers relating to any of these subjects or subdivisions will be welcomed by the chairman of the symposium, who is Robert J. McKay.

PAYMENT of $30,000 to the Cooper Institute, New York, for the advancement of science and art is provided for in the will of Eleanor G. Hewitt, sister of Peter Cooper Hewitt.

UNIVERSITY AND EDUCATIONAL NOTES

A GIFT of $1,250,000 has been given by the General Education Board, allied with the Rockefeller Foundation, for completion of the Medical School at the University of Minnesota. The gift carries the proviso that the university obtain elsewhere $2,350,000, which will complete the $3,600,000 estimated cost of the proposed expansion.

UNITS of the new graduate school of medicine of the University of Chicago, projected for immediate construction, include the Billings Hospital, with 200 beds; a medical clinic for internal medicine and the medical specialties, to be occupied by the department of medicine, and a similar surgical clinic for general surgery and the surgical specialties, to be occupied by the department of pathology. This group will also house the Billings Library, a gift from Dr. Frank Billings to the university. The buildings of the physiological group, to be occupied by the department of physiology and the department of physiological chemistry and pharmacology, will be erected on the south side of Fifty-eighth Street and will connect with the hospital group.

WORK will begin shortly on a $20,000 physics laboratory to be known as Founders Laboratory, it is announced at Vassar. The names of the donors have not been made public.

B. MARVEL O'HARRA, assistant metallurgist at the United States Bureau of Mines Experiment Station, Rolla, Missouri, was recently appointed metallurgist and acting director of the station.

APPOINTMENTS to the staff of the University of Pennsylvania School of Medicine have been made as follows: Dr. George Fetterolf, professor of otolaryngology, succeeding Dr. Burton A. Randall, retired; Dr. John Claxton Gittings, professor of pediatrics, succeeding Dr. John P. Crozer Griffith, retired, and Dr. William C. Stadie, assistant professor of research medicine.

DR. H. N. CALDERWOOD, formerly chemist at the U. S. Forest Products Laboratory, is now assistant professor of chemistry at the University of Wisconsin. He has charge of the laboratory instruction given to engineering students. Dr. S. M. McElvain, instructor in chemistry at the university, has taken over the courses in organic chemistry formerly conducted by Assistant Professor Glenn S. Skinner, who has resigned to enter industrial work.

DR. H. O. CALVERY and Dr. H. Jensen have joined the staff of the department of chemistry at the University of Louisville, Kentucky.

DR. L. GRANT HECTOR, former instructor in physics and Tyndall Fellow at Columbia University, has been appointed assistant professor in physics in the College of Arts and Sciences of the University of Buffalo. Dr. P. Thomas McIlroy, of Queens University, Canada, has been appointed instructor in pathology.

DR. ERNEST PICK has been chosen to take the place of Dr. Hans Horst Meyer, professor of pharmacology at the University of Vienna, who has retired.

DISCUSSION AND CORRESPONDENCE

MUSSEL SHOALS

THE Mussel Shoals of the Tennessee River in northern Alabama (between Lauderdale and Colbert Counties) have received their name from the immense number of species and individuals of freshwater mussels (Naiades) which used to be found at this locality. Thus the common and now official spelling "Muscle Shoals" should be discarded for the more correct one "Mussel Shoals." There is no other place upon the

whole wide world which could be compared with this one in this respect. The cause for this unusual development of Naiad-life (as well as other freshwater life) of this region is found in the fact that here two old faunas, in themselves exceptionally rich, come together, the so-called "Cumberlandian," belonging to the upper Cumberland and upper Tennessee rivers, and that of the "Interior Basin" (Ohioan fauna).

I have tried to compile a list of Naiades known from the Mussel Shoals, and have found that about 80 different species and varieties are represented here, belonging to 29 genera, and this number is increased by some additional types known from the tributaries of the Tennessee River in this region.

This extraordinary fact has been recognized at a very early time. Exactly 90 years ago, Conrad[1] wrote:

> The bivalves are . . . peculiarly abundant in those rivers of North Alabama and Tennessee, which have cut their channels in the carboniferous limestone, and where generally a long grass affords them a secure hold against the rapid current of these mountain streams. The expansion of the Tennessee River, known by the name of Muscle Shoals, is of the character I have described; it is shallow, ornamented with a number of small islands, and its bed is full of the long grass which abounds in various species of Naiades. The lover of the grand and the beautiful in natural scenery, as well as the student in science, will here find abundant sources of interest. He will be delighted with a noble river, whose beautiful and numerous islands are clothed with gigantic trees; whose high and undulating shore on the one hand is ornamented with thriving villages, and on the other spreads out an extensive alluvial, rich in all the gifts of Ceres, or rises abruptly from the river a mural escarpment of carboniferous limestone, which reflects its blue and sombre aspect in the crystal waters at its base. Like many other spots, however, remarkable for their loveliness, the subtle messengers of death have chosen it for their abode, infusing the poison of their breath into the serenity of autumn, when the transparency of the air and the purity of the sky, together with the gorgeous scenery, present at first to the unconscious traveller sensations alone of health and enjoyment.

At the present time, the above description holds good only in a small part. The beautiful islands, and the general features of the river itself are gone, as well as a large portion of the fauna, chiefly that of the mussels, which depend on the ecological conditions once presented here. For a dam has been built, the "Wilson Dam," just at the lower end of the "Little Mussel Shoals," about two miles above the town of Florence, ponding the river for many miles, and drowning entirely the "Little" as well as the "Big Mussel Shoals," beginning about four or five miles farther above. With the destruction of the conditions favorable for Naiad-life also the Naiades have been destroyed, which is so much more to be regretted, as there were forms among them which have been found only at this locality, and very likely will be, sooner or later, entirely extinct.

There are some shells yet present in this region, chiefly below the dam; but this is only a small remnant of the original richness of the fauna, and there is great danger that also this remnant will gradually disappear, due to the pollution of the waters which will be a consequence of further "improvements" connected with the dam. And then the "glory of the mussel shoals" will be entirely gone, those characteristic and unique features which would rather have deserved to be kept intact and preserved as a "natural monument," second only to very few other monuments of the United States.

Only one part of Conrad's description has been intensified and emphasized by the present conditions: this is the part which speaks of the "subtle messengers of death," undoubtedly alluding to malaria (and mosquitoes), although Conrad, of course, did not know anything about their connection. But the fact is that mosquitoes and malaria are increasing to such a degree that the inhabitants of Florence and other towns in the vicinity are becoming alarmed, and are beginning to discuss preventive measures.

Truly, a sad state of affairs!

A. E. ORTMANN

CARNEGIE MUSEUM

[1] Conrad, T. A., "New Freshwater Shells of the United States." Philadelphia, 1834, pp. 12, 13.

AS STUDENTS UNDERSTAND IT

THE assumption of omniscience in Dr. David Starr Jordan's comments on my list of student misconceptions, published in SCIENCE of August 29, reminds me of the old story of the man who consulted a physician for relief from an irritation in his chest. "What is your profession?" asked the doctor. "I play in a brass band," answered the man. "Just the trouble!" exclaimed Medico. "I have always claimed that this excessive blowing of horns was injurious to some lungs; What instrument do you play?" "I beat the bass drum," answered the man.

No one would question the absolute necessity of laboratory contact work in any science course, and the lecture accompaniment should be and doubtless is of a summary and explanatory nature.

In all the science courses at the Virginia Polytechnic Institute, in biological matters there are laboratory courses in invertebrate and vertebrate zoology, six hours a week for one term in each, using Dr. Pratt's two manuals as laboratory guides; in botany, systematic laboratory, 6 hours a week for one term, and in advanced botany, 6 hours per week for one