Wilson is certainly one, and perhaps the mass spectrograph of Astor. Other great tools, for example, optical and x-ray spectrographs, have been from the first the work of many independent hands. But when one contemplates the wide fields which are coming to depend on the cyclotron one is tempted to believe that it will prove to be *the* great tool of our times. Incidentally, to be frivolous for a moment, it is the one major tool of which, to my knowledge, the Cavendish Laboratory ever made a Chinese copy.

A great toolmaker is a high estate, but we should do Lawrence scant justice if we did not hail him as a great team leader too. He has inspired and driven a remarkable team of workers—in these days in enterprises of such magnitude and complication the power to organize such cooperative efforts and to get the best from a team is an essential quality in the outstanding physicist. At least one major discovery is credited in the Cavendish to the toe of Rutherford's boot. I fancy that Lawrence's boot has an equally good toe and have no doubt that he uses it with judgment—I hope with equal success—as the great team leader must.

The English-speaking democracies may well contemplate with some pride the part that their outstanding scientific leaders have played in building modern science, and not least that wing of the building devoted to physics and engineering—which physicists, chemists, engineers and an odd mathematician or two have combined to glorify. Each of us will have our own pet list of heroes in this group. All these lists will be different and I shall not invite criticism by giving you mine. But I think we shall all soon agree that on this list the father of the cyclotron will hold an honored place.

Physicist, engineer, team leader, good colleague, Comstock Prizeman, Nobel Laureate, on my own behalf and, not greatly daring, on behalf of the members of the Physical Society of London, Ernest Lawrence, I wish you well.

SCIENTIFIC EVENTS

THE SIXTH LERNER-AMERICAN MUSEUM BIG GAME FISH EXPEDITION

UNDER the leadership of Michael Lerner, field associate in ichthyology of the American Museum of Natural History, the sixth Michael Lerner-American Museum Big Game Fish Expedition left Miami, Fla., on January 7 by Pan-American Airways for Talara, a small oil camp on the northwest coast of Peru, which will serve as a base for fishing operations. Mr. Lerner states that "The main objective of this year's expedition will be to investigate the habits of marlin reported to be found at this season of the year off Peru, with the purpose of finding further clues to its breeding places and breeding behavior."

To meet the special requirements of this type of big game fishing, Mr. Lerner has obtained the use of a 39-foot deep-sea fishing launch, the *Alone,* which has been shipped to Talara aboard a Grace Line steamer to be in readiness for the arrival of the expedition.

From its base at Talara, Peru, near the Ecuadorian border, the expedition will cruise along the Peruvian and Ecuadorian coasts, fishing to an offshore distance of one hundred miles, and making a study of the currents in which the large fish are apt to be found feeding on the smaller fish. Talara was one of the base camps for last year's expedition, when quantities of swordfish, manta, sharks and whales were found feeding in the rip where the warm current El Nino enters the cold Humboldt current.

"The breeding places and breeding behavior of all marlins are still unknown," said Mr. Lerner. "Our expedition of last year found evidence contradicting a prevalent report that both marlin and swordfish off Chile were in spawning condition. Our examination of the fish caught at that time showed all forty specimens examined to be adult female fish in a totally inactive state, as was the case with swordfish caught on two previous expeditions to Cape Breton and with marlins caught off the Bahamas."

Since this series of expeditions was inaugurated in 1936, specimens of swordfish and marlins in the North Atlantic, the Bahamas, Australia, New Zealand and off the west coast of South America have been collected but the breeding places of both remain a mystery.

It is also planned to collect specimens of a large squid found off the northwestern coast of South America. These appear at the surface at night in enormous numbers. Live specimens will be gathered and shipped back to New York in a large specially constructed tank for scientific study at the American Museum.

WORK OF THE UNITED STATES GEOLOGICAL SURVEY

A CONSIDERABLE part of the United States Geological Survey's geologic staff has been engaged for many months past in field investigations of deposits of the strategic minerals—manganese, mercury, antimony, tin, chromite, tungsten, nickel and mica. Examinations completed or under way cover areas in a dozen states and Alaska. Nine of the resulting reports have been published, others are in press, and still others are in preparation or await additional office and

laboratory work. These investigations are being carried out under special appropriation because of their importance for national defense purposes. In furtherance of that program and as one phase of the program of cooperation among American Republics, several geologists of the survey have recently been sent to Central and South America to investigate deposits of strategic minerals. C. F. Park, W. D. Johnston and T. P. Thayer have been in Cuba since early November inspecting deposits of manganese and chromite; Eugene Callaghan and J. F. McAllister left for Bolivia early in December to work on tin, tungsten, and antimony deposits; and W. D. Johnston and S. R. Capps arrived in Brazil in the middle of December to investigate deposits of chromite and manganese.

Among other projects under way in recent months were the following: (a) By Paul Averitt, an investigation of the gas resources and possibilities of the Early Grove area in southwestern Virginia, in cooperation with the State Survey; (b) by W. P. Woodring and K. E. Lohman, investigation and mapping of the structure, stratigraphy, and oil and gas resources of the Santa Maria district, Santa Barbara County, California; (c) by W. C. Warren, a study of the stratigraphy and structure of the area east of Forks, Washington, between the Hoh and Soleduck rivers, with special attention to its petroleum possibilities; (d) by J. T. Pardee, a study of faulting of intermontane basins of western Montana; (e) by W. B. Lang, a field study of recent developments in the potash field and of the resources and developments of sodium sulphate, in southeastern New Mexico, western Texas, and Arizona; (f) by H. D. Miser, an investigation of the quartz crystal deposits in the western part of Arkansas for the special purpose of acquiring information on possible future production of crystals suitable for radio transmitters.

The installation of apparatus for work in x-ray crystallography, under the direction of W. E. Richmond, has now been completed and several new minerals discovered by survey mineralogists are under examination with x-rays.

The facilities and services of the Water Resources Branch of the survey in furnishing and analyzing water-supply data and in the investigation of the availability of additional water supplies needed for defense activities are being extensively used by the War and Navy Departments, especially through the construction Quartermasters stationed at specific points where defense works are being expanded. In addition, much use is being made of the same facilities by private agencies engaged in furnishing water supplies for camps and defense bases and also for industrial plants engaged upon the construction of defense material.

THE NATIONAL RESEARCH FELLOWSHIP FOR WOMEN IN SCIENCE

THE initiation of a program that will lead to the awarding of the Sigma Delta Epsilon National Research Fellowship for Women in Science was authorized by Lois Lampe, of the Ohio State University, National President of Sigma Delta Epsilon, Graduate Woman's Scientific Fraternity, at the 1940 national convention of the society held in Philadelphia during the meetings of the American Association for the Advancement of Science.

The awarding of this fellowship, plans for which will be announced later, will celebrate the twentieth year of the fraternity which was founded in 1921 at Cornell University. It is the only woman's organization affiliated with the American Association for the Advancement of Science. The membership is made up of about twenty-five hundred women grouped in fourteen chapters.

Officers elected for the year 1941 are:

National President, Dorothy Day, department of botany, Smith College.

First Vice-president, Elizabeth Wagner Beasley, Texas Agricultural Experiment Station.

Second Vice-president, Mary A. Magill, associate editor, *Chemical Abstracts,* Columbus, Ohio.

National Secretary, Nina E. Gray, department of biology, Illinois State Normal University.

National Treasurer, Mary Bartley Schmidt, Fayetteville, Arkansas.

A PLAN TO PROMOTE CULTURAL FELLOWSHIP AND COOPERATION AMONG THE AMERICAN REPUBLICS

DR. ANTON J. CARLSON, professor of physiology at the University of Chicago, writes, as president of the Union of American Biological Societies, "that the trustees of *Biological Abstracts* have learned, in part through information furnished by the Pan-American Union of Washington, D. C., that there are now some one hundred and fifty *bona fide* research and educational institutions in our sister Republics south of the Rio Grande, which owing to lack of funds, inequality in monetary exchange value, etc., are not now subscribers to *Biological Abstracts,* a most useful, if not necessary compendium of the world literature in biological and medical research.

"In the hope that many national biological societies, foundations and individuals in the United States may find here a practical and effective means of promoting a Pan-Americanism based on understanding, mutual respect, personal friendliness and fair play, the trustees of *Biological Abstracts* have decided to reduce the cost of a set of the abstracts from $250.00 to $100.00 (including subscription for the 1941 volume)