News and views

WASHINGTON DEBATE

CONGRESS CONSIDERS MANPOWER PROBLEM

As regards scientific manpower at this writing, the Capitol chit-chat in Congressional Committees, learned councils, and the Cosmos Club trends toward a pattern adapted to the concept of Universal Military Service and Training. Opposition to UMST from those who are justly concerned lest the training and use of scientists be jeopardized, was somewhat diminished by the testimony of Mrs. Anna M. Rosenberg. The "Defense Department Plan" as described in her testimony as Assistant Secretary of Defense in charge of manpower and personnel problems, which she presented to the Senate Armed Services Committee on January 10th, included more of the thinking of science groups and educators than was generally expected.

The testimony was in terms of intent and background only. At this writing, eight days later, the bill to be proposed by the Defense Department and the national manpower policy to be announced by the President have not appeared. It is expected that the latter will emphasize generally the importance of making the most effective use of scientists, and that the bill will include provisions to keep up the flow of training for scientific fields, at least temporarily, through Selective Service deferments of students now in college. Dipping into the 18 year age class relieves the pressure against deferments at higher ages, and hence a program of deferment for advanced science students becomes more feasible.

One feature of the plan provides for the assignment of a number of selected men, after four months of basic training, to ROTC units in colleges. This is to get officers. It is known that many in the government, and in various official advisory committees, as well as elsewhere, feel strongly that there should be some kind of civilian counterpart of the ROTC. To it also, selected trainees would be assigned after four months' basic training. This would bring back to college, for specialized training in the sciences and other critical fields, an appropriate number of men for essential services to national security in ways other than military in the ordinary sense. Thi- would avoid the, in their case, unrewarding two years of strictly military training and service. The- would presumably be obligated to give an equal amount of time later in some essential activity requiring their specialty.

Plenty of questions are left without clear answers as of now. Some, for example, involve the method of selection of men for college training, and their status during and after such training; the extent that they must major in selected "critical" fields; the extent that military policy makers will be the ones who decide what fields are critical; and so on.

Many observers feel that no appraisal of the Defense Department plan can safely be made until after a careful study of the exact wording to determine its more subtle implications. Only then can a fair comparison be made with the plan of the six advisory committees to General Hershey, the more recent plans of the AIP, NRC, American Chemical Society, and Engineers' Joint Council, the plan of the Interdepartment Science Committee and other plans not yet publicized. In the last category is the plan of the Scientific Manpower Advisory Committee of the National Security Resources Board.

It is rumored that there may soon be a National Manpower Administration.

1950 NOBEL PRIZE IN PHYSICS

POWELL HONORED AT STOCKHOLM CEREMONIES

Meson physics, which has figured in two other Nobel awards in past years, again in 1950 played a dominant role at Stockholm when Cecil F. Powell, 46-year-old Melville Wills Professor of Physics at Bristol University's H. H. Wills Physical Laboratory, received the 1950 Nobel Prize in physics ($31,715) for his contributions to the knowledge of mesons.

Some fifteen years ago, Hideki Yukawa, 1949 Nobel Prize winner, suggested the theoretical need for a subatomic particle intermediate in mass between the proton and the electron. Evidence for such a particle, the meson, was obtained in 1936 from cloud chamber photographs which had been exposed atop Pike's Peak by Carl Anderson and Seth Neddermeyer. Anderson, who has also been credited with having found the first evidence for the positron, received the Nobel Prize in 1936.

Several years later, Powell, while examining some electron-sensitive plates which had been exposed at the Jungfraujoch high altitude laboratory by D. M. Ritson of the Clarendon Laboratory, Oxford, established evidence for a meson heavier by about one-third than any previously identified. Upon examining the plates, Powell noticed a pattern of tracks indicating the slowing down of a high-energy particle. The original track gave rise to three further tracks, and Powell reasoned that a meson of greater than usual mass had disintegrated and that three particles had formed from its breaking down—one of a mass about 286 times that of an electron, and the other two either of similar mass or of a lighter type of about 212 times an electron's mass.

The mass of the original particle was estimated in several ways. In what seemed the most reliable method, Powell calculated the number of silver grains in a given length of track

Cecil F. Powell, winner of the 1950 Nobel Prize for Physics. Photograph courtesy Wide World Photos, Inc.

after developing the emulsion, and from this he arrived at a figure of approximately 1,080 electron masses.

By February of last year, Powell and P. H. Fowler (his coworker at Bristol) reported a new way in which the masses and energies of fragments yielded from cosmic ray disintegrations might be estimated. The method employed a microscope so arranged that in one direction it followed the general line of the track and in the other direction recorded the deviations along the lengths of track.

Less satisfactory evidence exists that there are perhaps mesons even heavier than those found by Powell. Two Russians, A. I. Alichanow and A. I. Alichinian, have been working since 1947 in a mountain laboratory in the Transcaucasian Republic of the USSR on the deflection of high energy particles contained in the cosmic radiation. In an exchange of letters published in *Nature*, the Russian scientists accused Powell of having ignored their claims to have detected sixteen different kinds of mesons, some of which were of quite large mass. From available descriptions of the experiments, Powell suggested in reply, it did not seem established that other possible explanations for the Russian results had been ruled out. He therefore recommended further studies which might tend to lessen the statistical variations of their observations. Powell also suggested that "a series of fully representative international conferences" on cosmic radiation and related topics would be of great value in the interests of better understanding, and he expressed his regrets that USSR scientists had not been able to participate in recent international scientific meetings in order to insure wider appreciation of the results of Russian research.

After receiving the Nobel Prize on December 10th, Powell left Sweden for Bombay, India, where he was scheduled to deliver a series of eight lectures. While in Bombay he has been working with Professor Bhabha of the Tata Institute on cosmic rays. He plans to return to Bristol sometime during February.

NEW COURSES

THE OAK RIDGE SCHOOL OF REACTOR TECHNOLOGY

Applications are now being received by the Oak Ridge School of Reactor Technology for enrollment in the 1951–52 session, beginning September 10, 1951. This School was established at the Oak Ridge National Laboratory in March of 1950 under sponsorship of the U. S. Atomic Energy Commission. Its purpose is to train engineers and scientists in the field of reactor theory and technology, in preparation for their employment in this field by the AEC or its contractors.

The Oak Ridge School of Reactor Technology will enroll students of outstanding qualifications who hold, or will receive by September 1951, bachelor's or master's degrees in chemistry, engineering, metallurgy or physics. A limited number of recent college graduates will be accepted under Category A in the status of student-employees of the Oak Ridge National Laboratory, and will be paid a monthly stipend for a twelve-month period, beginning September 1951. Provision is also made for trainees sponsored by government agencies and industrial organizations connected with or interested in the AEC reactor development program, Category B. Applications for enrollment under this category must be made by the firms or agencies employing the applicants. Such students remain on the payrolls of their home organizations. Much of the material presented in the curriculum of the Oak Ridge School of Reactor Technology will be classified; hence, all enrollments are contingent upon a personnel security investigation.

Men trained in chemistry, engineering, metallurgy, or physics are much in demand in the reactor development program. It is the purpose of the Oak Ridge School of Reactor Technology to provide engineers and scientists with sufficient background in reactor technology and allied subjects to become effective as research, development and design personnel.

Further information and application forms may be obtained by writing to the Director, Oak Ridge School of Reactor Technology, Post Office Box P, Oak Ridge, Tennessee. Category for which application is requested must be specified. These applications must be filed with the director of the school by March 1, 1951. Announcements of appointments will be made in April 1951.

INSTRUMENT ANALYSIS

Two one-week specialized training programs in instrumental analysis will be offered from July 9 to 13 and July 16 to 20 as part of the 1951 Summer Session at the Massachusetts Institute of Technology. The purpose of these programs, according to MIT, is to provide for each type of instrumental method discussed an adequate grounding in the fundamental principles and theory involved, a knowledge of a wide variety of types of practical applications, and first-hand experience with available commercial instruments. No academic credit will be offered. Tuition for each one-week period will be $65.

The first week's program, from July 9 to 13, will concern electrical methods of instrumental analysis and will emphasize potentiometry, polarography, conductimetry, amperometric titrations, and applications of self-balancing recording potentiometers. Optical methods of instrumental analysis, including spectrophotometry, colorimetry, fluorimetry, turbidimetry, nephelometry, and flame photometry, will be the subject of the second program, July 16 to 20.

Application forms may be obtained from Professor Walter H. Gale, Room 3-107, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

NEW LABORATORIES

GE OPENS THREE

The General Electric Company formally opened three new laboratories during the last months of 1950. The first of these, its main research center at the Knolls, is located near Schenectady, N. Y., in Niskayuna Township on a high bluff overlooking the Mohawk River. Construction began in 1946 and at this point the plant is virtually completed. Its five major laboratory buildings, however, have been in use for some time.

The second laboratory, located at Lynn, Massachusetts, is the new GE measurements research center, designed and staffed to give measurements information in the fields of magnetism, electricity, sound, heat, light, color, chemistry, and metallurgy. It has a technical staff of approximately three hundred persons and is equipped with complete facilities for applied research, product development, and design. In order to keep a constant check on the calibration of testing equipment, GE has announced, primary standards for measurement are kept at the laboratory which are equivalent to those of the National Bureau of Standards.

GE's aircraft gas turbine laboratory, also at Lynn, is the third of the new installations. Dedicated to the late Sanford A. Moss, the "father" of the turbosupercharger, the laboratory has full facilities for testing compressors and combustion systems.