Southern industry and, in turn, Southern agriculture would be benefited enormously. Dr. C. M. A. Stine states the following:

> Chemical industry spends 2 per cent. to 4 per cent. (as high as 7 per cent. in some cases) of its gross sales revenue on research; agriculture, in contrast, spends only about one seventh of 1 per cent. of the value of its products on research. As much as $240,000,000 might be expended annually in the United States on agricultural research and the expenditure would not be at all fantastic nor out of line with need.

Money for scientific research is the greatest need of Southern colleges and universities at the present time. The legislatures of the Southern states should appropriate additional money to the universities and other state colleges for scientific research. This is undoubtedly the most important means of building up scientific research within the Southern states. In addition to state aid, many gifts for scientific research from business men and endowed foundations have helped Northern and Far Western educational institutions. Few such gifts have been made to Southern educational institutions. Of course, Federal aid for scientific research in Southern educational institutions would help solve the problem. We can not build up Southern industrial scientific research laboratories without the cooperation of Southern universities and colleges.

A large number of individual companies and many trade associations make research grants to educational institutions. Need I say that very few of these are given to Southern colleges and universities? We need to increase our industrial scientific research organizations, along with our university and college research organizations, so that our Southern-trained young men will remain in the South and build up the South. These will be the men who will have new ideas and create many new Southern industries. If we train Southern men in scientific research, a certain proportion of them will remain in the South. Hence, the universities and colleges should take the lead in building up scientific research in the South. We should strive to have at least one institution in each of the Southern states granting the Ph.D. and M.D. degrees.

We should also build up natural science education in the secondary schools. At present there is a strong trend away from natural science in these schools.

We should establish our own nationally great colleges and universities, our own grants-in-aid for research, our own journals for the publication of research, etc.

A direct way to encourage scientific research in the South would be for the Southern states to forego taxes on industrial, as well as on college and university research laboratories.

Now I should like to mention just a few ways in which I believe the Alabama Academy of Science can help in this program. The more interest in science on the part of the people of the state, the better off science will be in the state. We are certainly furthering this interest through our Junior and Senior Academies of Science. For the first time we have several important all-year-round committees to carry on the work of the Academy. We are progressing in our finances, our membership, and in our journal activities. We should further expand our journal so as to be able to publish valuable research pertaining to the state of Alabama that would not otherwise be published and thus kept for posterity. Many colleges, universities and other institutions, primarily in the North and Far West, are beginning to publish their own scientific manuscripts. This is a necessary trend in view of the large amount of scientific research now being done. We should work for the establishment of similar publications in the South. We should also increase our grants-in-aid for research. These are all valuable and sure ways of building up science in the state. We need state aid to adequately finance the academy. I believe our next step should be the formation of a Southeastern Scientific Society (S.S.S.), perhaps later to become the Southeastern Division of the A.A.A.S., similar to the Southwestern Division, and meeting with our various state academies. This should stimulate further interest in science in the Southeast.

Finally, I should like to say that I sincerely hope that by the end of the South's "ten year program of economic and cultural enrichment" sponsored by the Southern Governors' Conference and to be climaxed by a great world's fair of the South in 1950, we shall be able to report much progress in scientific research. Therein lies the hope of the South for the utilization of its own natural resources.

SCIENTIFIC EVENTS

FIELD PROGRAM OF THE CANADIAN BUREAU OF GEOLOGY AND TOPOGRAPHY

THIRTY-SEVEN geological and topographical survey and exploratory parties, comprising a force of about a hundred and seventy men, have been assigned to field work this year by the Mines and Geology Branch, Department of Mines and Resources, Ottawa. These parties, most of which will be leaving Ottawa in the immediate future, will map and investigate areas in every mineral-producing province in the Dominion and in Yukon and the Northwest Territories.

In view of the wartime requirements of the nation, particular attention is being given to investigations in connection with such minerals as have a direct bearing on the war effort. The work of the bureau is largely directed toward the extension of the gold-mining industry, which provides foreign credits, and toward an evaluation of resources in petroleum, an increased domestic supply of which is necessary to limit dependence on foreign sources. Investigations will be made also of deposits of many of the so-called war minerals, such as chromium, manganese, molybdenum and tungsten.

Twenty-six parties will be engaged in geological surveys and investigations, and eleven in topographical mapping. In addition, two topographical parties will be employed on supervisory work. Of the geological parties, three will be in British Columbia, five in Alberta, one in Saskatchewan, two in Manitoba, two in Ontario, four in Quebec, one in New Brunswick, one in New Brunswick and Nova Scotia, one in Nova Scotia, one in Yukon and three in the Northwest Territories. Two other parties will be employed on the general investigation of deposits of war minerals, one in British Columbia and Yukon and the other in the rest of Canada.

The topographical mapping program for 1940 will be devoted entirely to surveys in the foothills district of Alberta, which is now of such importance as a potential source of petroleum supplies. Ten topographical parties, one control party and two supervisory parties will operate in this district.

THE COOK OBSERVATORY

PLANS to proceed at once with continuation of the astronomical work begun by the late Gustavus Wynne Cook, the Philadelphia industrialist and amateur astronomer, who died on June 4, have been announced by the University of Pennsylvania. The work will be done with the astronomical equipment assembled and used by Dr. Cook in his private observatory at Wynnewood, Pa., which has been bequeathed to the university.

At the time of his death, Dr. Cook was engaged in making a photographic map of the Milky Way region. In preparation for this work he acquired in 1936 an astrographic telescope, said to be the largest in the world. A little more than half of the Milky Way section has already been photographed and its completion will be one of the immediate objectives of the observatory.

Dr. Charles P. Olivier, Flower professor of astronomy at the university and director of the Flower Observatory at Highland Park, who will direct the new program, has announced that Dr. P. H. Taylor, who has worked with him for the past four years, will work full time, and that in addition three part-time astronomers have been added to the staff. These include I. M. Levitt and L. I. Tabor, who were associated with Dr. Cook for several years, and Dr. Roy K. Marshall, a member of the staff of the Franklin Institute. Mr. Levitt, also a member of the staff of the institute and a former student of Dr. Olivier, will continue the work he has been doing with the spectrohelioscope at the Cook Observatory, cooperating in an international project for the study of solar eruptions. Mr. Tabor, who has been in charge of the work with the astrographic camera, will carry forward the work of mapping the Milky Way.

The work of the observatory will be continued for the present on the Cook estate in Wynnewood. This will permit certain lines of investigation to go forward without interruption. The program will be coordinated with that of the Flower Observatory and the equipment eventually will be placed with that of the Flower Observatory at some suitable location. The Cook unit will maintain its integrity and the name of Dr. Cook will be perpetuated. He is said to have spent approximately $200,000 on equipment for his observatory.

The bequest includes two buildings—a "sun house" and a "star house"—in addition to the equipment they contain. The largest telescope in the collection is a 28½-inch reflector, which will be used for the study of stellar spectra for the solution of special problems. There are also, in addition to the astrographic telescope and the spectrohelioscope, a 15-inch horizontal refracting telescope and a new Schmidt Camera of 14 inches aperture.

THE ILLINOIS-INDIANA SECTION OF THE SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION

The Illinois-Indiana Section of the Society for the Promotion of Engineering Education held its annual meeting at the University of Notre Dame on April 21 with an attendance of nearly two hundred. After the Rev. J. Hugh O'Donnell, C.S.C., president of the university, welcomed the group, the Rev. John J. Cavanaugh, C.S.C., who is vice-president of the university, spoke on "Intellectual and Moral Education at Notre Dame," pointing out that Notre Dame is primarily concerned with the intellectual development of the student, but at the same time it integrates the religious and intellectual elements in higher education. Dean D. C. Jackson, Jr., of the College of Engineering, discussed "Engineering and Religion" and emphasized that "definite attention to integrating an intellectual study of religious principles and convictions into the engineering curricula is essential for the best progress of the progression of engineering in its broadening scope in approaching social problems in the future." Professor F. G. Seulberger, director of industrial relations at Northwestern University, gave an interest-