New Mexico, Albuquerque, for a three-year term; and Professor Victor J. Smith, Sul Ross State Teachers College, Alpine, Texas, to serve the remaining unexpired term of Dr. H. P. Mera, who was elected vice-president.

Biological Sciences:
Chairman, Dr. A. L. Hershey, Las Cruces, New Mexico
Secretary, Dr. Omer E. Sperry, Alpine, Texas

Mathematics:
Chairman, Professor Roy MacKay, Portales, New Mexico
Vice-Chairman, Dr. Lyle Mehlenbacher, Flagstaff, Arizona
Secretary, Dr. Harold D. Larsen, Albuquerque, New Mexico

Physical Sciences:
Chairman, Dr. C. T. Elvey, Fort Davis, Texas
Secretary, Dr. Oscar B. Muench, Las Vegas, New Mexico.

Social Sciences:
Chairman, Professor F. Martin Brown, Colorado Springs, Colorado
Secretary, Miss Katharine Bartlett, Flagstaff, Arizona

SCIENTIFIC EVENTS

CHEMICAL RESEARCH REPORTS

THE United States has led the world in the output of chemical research reports for the past ten years according to a survey made by Dr. E. J. Crane, professor of chemistry at the Ohio State University.

"Curves showing the relative shares of Germany and the United States in percentages of the world's total output of chemical papers since 1913 would take the form of an 'X' lying on its side with the upward slant representing the United States and the downward slant, Germany." Dr. Crane states that:

The crossing of the lines apparently occurred in 1930. An irregular spot would indicate the effects of the world war. An almost straight curve underlining this prostrate 'X' would represent the output of the next most active country—the British Empire.

In 1913, the last year before the world war, the German output of chemical papers was 34.4 per cent. of the world's total, while that of the United States was 20.7 per cent. and of the British Empire, 14.4. In 1939, in a sense the last year before the beginning of the present war in Europe since it got under way slowly and publication was little affected at first, the output of papers in the United States had reached 27.7 per cent. and Germany's had dropped to 18.7, with the British output remaining approximately 14 per cent.

At approximately the time when the lines of the 'X' cross, the British output was 13.5 per cent.; figures showing the effects of the world war (14.9, 16.8 and 15.4 per cent. for the British Empire for 1917, 1918 and 1923) still justify keeping the British curve approximately straight.

Most noteworthy is the strong development of chemical publication in Russia, which in 1913 has 2.5 per cent. of the total number of abstracts; in 1929, 3.4 per cent. and in 1939, 11.1 per cent. A good many Russian chemists have also been publishing papers in German periodicals.

While the figures on abstracts are not an exact measure of chemical research activity in the various countries, they have a good deal of meaning, nevertheless. No doubt there has been a growing amount of chemical research work directly bearing on national defense which has not been published. This may be true to a larger degree for some countries than for others.

There is also much industrial research activity that is not reflected in the publication of papers. Perhaps the number of chemical patents issued in the various countries may be considered a rough measure of industrial research activity in chemistry. In 1939, *Chemical Abstracts,* which endeavors to cover the chemical patents completely, published the following numbers of patent abstracts: United States, 7,727; Great Britain, 4,872; Germany, 2,929; France, 2,377.

The chemists of a few of the smaller countries, as Denmark, publish a considerable percentage of their papers in the journals of other countries. Happenings in Europe during the past year make the listing of countries puzzling, but the present survey ends with 1939.

France was fifth in number of abstracts published in 1939, ranking after the Soviet Union. Her percentage of the total was 9.1; Japan came next with 4.4 per cent., and Italy seventh, with 3 per cent. In 1913, Italy's percentage was 4.7, and in 1929, 3. France's percentage in 1913 was 13; it dropped to 7 in 1929. Japan had a percentage of only 0.37 in 1913, but reached 3.7 by 1929.

GRANTS OF THE GEOLOGICAL SOCIETY OF AMERICA

IN addition to grants authorized by the council of the Geological Society of America, which have already been reported, the following grants have been made in paleontology and petrology:

Paleontology, Invertebrate—$1,700.

Charles A. Anderson, University of California, will be assisted by J. Wyatt Durham in the study of Pliocene fossils collected in 1940 in Lower California on the cruise of the *E. W. Scripps* into the Gulf of California under a grant from the Geological Society of America. Mr. Durham was an assistant on that expedition and collected the fossils. $950.

E. R. Eller, Carnegie Museum, will study the Manitoulin (Silurian) dolomite of New York and Ontario with view to correlating its beds with beds of equivalent age in other parts of North America. Special study is to be

made of scolecodonts in the hope of proving their uses as index fossils. $300.

J. Harlan Johnson, Colorado School of Mines, will study Pennsylvanian and Lower Permian algal limestones from Kansas. He already has studied algal limestones from Colorado and New Mexico and will now demonstrate the importance of algal limestone deposition in Kansas during the late Paleozoic. $300.

Vladimir J. Okulitch, University of Toronto, will return to the United States National Museum in Washington for four weeks to complete his study of North American Pleospongia. $150.

Paleontology, Vertebrate—$2,197.40.

Barnum Brown, the American Museum of Natural History, and E. M. Schlaikjer, Brooklyn College, will complete their revision of the Ankylosauria. $750.

Miss Tilly Edinger, Harvard University, is to study the evolution of the brain in the horse evolutionary series by investigation of endocranial casts. $217.40.

Alfred S. Romer, Harvard University, receives additional aid to complete his preparation of a bibliography of vertebrate paleontology of countries exclusive of North America up to 1933, which has been in process under a previous grant. $900.

Horace Elmer Wood, 2nd, University of Newark, will devote the summer to stratigraphic work in Wyoming in continuing his correlation of the North American continental Tertiary. $330.

Petrology—$3,340.

V. T. Allen, St. Louis University, will collect clays from selected localities extending from Georgia to New Jersey and will study them by petrofabric, x-ray and chemical methods with special reference to the formation of diaspore, bauxite and "hydro-mica" by processes of weathering. $450.

Ernst Cloos, the Johns Hopkins University, will intensify his quantitative investigation of rock flowage in relation to cleavage and folding by means of statistical measurements of deformed oolites in Paleozoic limestones of one of the outstanding uplifts in the Appalachians, the South Mountain uplift of Maryland and Pennsylvania. $995.

John C. Haff, Colorado School of Mines, will study ocellar structure in lamprophyric dikes and alkaline extrusives. Petrofabric analyses will be made of grain orientation around vesicles and phenocrysts in an investigation of the mechanism of formation of ocelli and their part in the consolidation history of the rocks examined. $70.

E. B. Mathews, the Johns Hopkins University, will complete his compilation and classification by geographical position of all available analyses of igneous rocks published prior to 1940, some 35,000 items. $700.

Aaron C. Waters, Stanford University, will complete a petrologic and stratigraphic investigation of the Columbia River basalt in eastern Washington and adjacent parts of Oregon and Idaho. $1,125.

THE OPTICAL SOCIETY OF AMERICA

THE twenty-sixth annual meeting of the Optical Society of America will be held in New York City with headquarters at the Hotel Pennsylvania, on October 24 and 25.

Symposia of invited papers have always been important features of the meetings of the society. This year a symposium on the role of "Optics in the National Defense" is being arranged for the session on Friday morning, October 24. Due to uncertainties arising from the national emergency, it has seemed best to defer announcement of the speakers and their titles until the program of the meeting is mailed to the members early in October. The annual dinner of the society will be held on Friday evening. A special feature of this dinner will be the award of the Frederic Ives Medal. The sessions on Friday afternoon and on Saturday will be devoted to the presentation of contributed papers.

The time and place of this annual meeting, according to the preliminary announcement, were selected by the Board of Directors with an appreciation of the fact that many members of the society have additional duties because of the emergency which make attendance at meetings less convenient than in normal times. Through cooperation with other societies to which many of our members belong, there will be meetings of four national societies at the Hotel Pennsylvania during the week of October 20. The Society of Motion Picture Engineers will hold its meeting from October 21 to 23 inclusive. The Acoustical Society of America and the Society of Rheology will hold their meetings on October 24 and 25, simultaneously with that of the Optical Society. A joint luncheon is being arranged for Friday, October 24; and plans for other features of common interest are being formulated. It is hoped that the membership will demonstrate its appreciation of this consolidation of activities by making reservations immediately at the Hotel Pennsylvania.

Members desiring to communicate papers to the meeting should send abstracts to the secretary on the usual form. All abstracts must be in the hands of the secretary not later than noon of September 22. The appropriate grouping of contributed papers will be greatly facilitated if members intending to present papers will forward their abstracts to the secretary at the earliest possible date.

The meeting will be open to non-members as well as to members. All those interested are cordially invited to attend. Non-members who desire to receive the advance program, final notices or other information in regard to the meeting should address their requests to the secretary, Arthur C. Hardy, Massachusetts Institute of Technology, Cambridge, Mass. The chairman of the program committee is A. W. Kenney, E. I. du Pont de Nemours and Company, Wilmington, Del.