where their special knowledge and skills will be of the greatest use in the successful prosecution of the war; others remain on the local "home front" where the daily service they render is just as highly important and just as effective in the war efforts.

Illustrations multiply daily in the experience of each Geological Survey as to how dependent upon the broad base of geologic science—pure and applied—is the successful conduct of a large-scale modern war. In fact, the turn of the wheel of fortune in great measure is as closely related to geologic science as it is to military science, though the latter is without question the more directly involved and the more directly responsible. It is so obvious now as to be trite that this is a war of machines and instruments, of terrain and topography, of mineral resources and ground-water supplies—all geologic resources of the greatest importance. This is no minimization of man power, or of the value of brains compared with brawn, but under modern conditions they are not the unique force of ancient warfare. The unfortunate fact still remains, however, that the supreme value of geologic resources has not been clearly understood or readily accepted by all who are concerned with all the theaters of preparation, of potential conflicts of interest and of actual combat. "Too little too late" also has its dismaying applications here as well as elsewhere.

The war rôle of an efficient Geological Survey appears, therefore, to be primarily an accelerated continuance of its best peacetime methods. A decisive shift in emphasis upon the type of results to be obtained and their application—both in time and place—rapidly becomes necessary, or even mandatory. Some temporary measures will be desirable, but ultimate peacetime good may come from some of them. The war rôle of an official Geological Survey thus involves a shift in immediate objectives, a new setting of the sights and probably also a realignment of personnel.

In conclusion, we must never forget, or permit others to overlook, the facts that those Surveys are the great repositories of the most useful and diversified geologic and mineral resource data, that they are the users of the most modern field and laboratory techniques in their respective spheres, and that above all they have the technically trained, skilled personnel to make effectively the necessary conversion from peacetime scientific and industrial research to frontal attacks upon very important war problems. Obviously, the closer the cooperation with all other agencies having similar rôles, the more effective will be the contributions of the Geological Surveys toward the prompt and effective winning of this war. Unselfish continuance of such effective cooperation far into the post-war period should help to make another such war virtually impossible.

OBITUARY

ISAAC MCKINNEY LEWIS
1878–1943

ISAAC MCKINNEY LEWIS, professor of bacteriology in the University of Texas, died of a heart attack on March 12, 1943. He had suffered an attack in the summer of 1941, but, after a long convalescence, he had apparently fully recovered. He is survived by two brothers, Dr. Charles E. Lewis, of Waterville, Maine, and John R. Lewis, of Wolcott, Indiana. He never married.

Dr. Lewis, third son of Isaac R. Lewis and Margaret Jane (McKinney) Lewis, was born on September 21, 1878, on a farm in Jasper County near Rensselaer, Indiana. He had the misfortune never to know his father, who died in the May preceding his birth. He was devoted to his mother, who had been a teacher, throughout her lifetime and he gave her credit for instilling in him the desire to secure an education.

He attended the country school near his home and finished the eighth grade at the age of fourteen. By home study while working on the farm he prepared himself for the teacher's certificate, and at the age of seventeen he began teaching in his home township of Barkley. In 1897 he entered the Indiana State Normal School. His work there was interrupted by trouble with his eyes following measles, and by the necessity of earning his expenses, but he was finally able to finish in 1904. He entered the University of Indiana in the fall of the same year and from this institution he received the B.A. in 1906, the M.A. in 1907 and the Ph.D. in 1909. During the year 1908–09 he was instructor in botany in New Hampshire State College and assistant botanist in the experiment station. In September of 1909 he came to the University of Texas to be instructor in botany and to initiate work in bacteriology. He rose through the successive ranks to professor in 1919. In 1918–19 he was a captain in the Sanitary Corps, U. S. Army, stationed at the Yale Army Laboratory School. He was designated as research professor in 1938–39. For a number of years he taught both botany and bacteriology, but the development under his leadership of the work in bacteriology was such that for the past fifteen years this field occupied his entire time. Throughout his career, however, he retained an intense loyalty to the parent science of botany.

As a man he was unselfish, kindly and modest almost to the point of shyness, with a lively sense of humor

and a ready wit. Friends, colleagues, students found him easily approachable, sympathetic, and in times of trouble generous with financial aid.

As a teacher Dr. Lewis was excellent. His lectures, sound always in matter, were invariably well organized, well presented and highly interesting. Students trained under him were warmly welcomed if they transferred to another institution. Among his associates it has been a common experience to be told by former students that Dr. Lewis was the best teacher they had during their college career, either at the University of Texas or elsewhere.

He was a member of Sigma Xi, the American Association for the Advancement of Science, the Botanical Society of America, the American Phytopathological Society, the American Microscopical Society (vice-president, 1932), the Society of American Bacteriologists and the Texas Academy of Science. In the Society of American Bacteriologists he was a member of the national council from 1940 to 1942. He was the organizer of the Texas Branch of that society, and at the time of his death was serving his second term as its president.

In productive scholarship Dr. Lewis was painstaking and tireless. Few of his publications show joint authorship, for he preferred to work alone, even to the point that he prepared himself most of the media and glassware. Each experiment he repeated many times over before he accepted the results. It is plainly evident from a consideration of his publications that his primary interest was in the pure and fundamental aspects of the subject. And the caliber of the work done by him is attested by the letters of commendation which he received from foreign and American bacteriologists. At the time of his death he was engaged in the preparation of the manuscript for a book on the bacterial cell.

O. B. WILLIAMS

RECENT DEATHS

DR. HENRY SEELY WHITE, professor emeritus of mathematics of Vassar College, died on May 20 at the age of eighty-two years.

JOHN S. STONE, from 1920 to 1935 a member of the department of research and development of the American Telephone and Telegraph Company, died on May 20 in his sixty-fourth year.

ELIZABETH T. PLATT, since 1937 librarian of the American Geographical Society of New York, died on May 22 at the age of forty-three years.

SCIENTIFIC EVENTS

EXPLORATIONS AND FIELD WORK OF THE SMITHSONIAN INSTITUTION

THE annual report for 1942 by Dr. Charles G. Abbot, secretary of the Smithsonian Institution, gives the following account of explorations and field work carried out during the year:

Explorations, often in out-of-the-way corners of the earth, have always formed a major part of the institution's program for the "increase and diffusion of knowledge." Although world conditions during the past year have made it either impracticable or undesirable to send out many of the expeditions that normally would have taken the field, nevertheless, even under the present unfavorable conditions it was found possible to carry on some field work in connection with researches previously commenced.

In astrophysics, field observers carried on their study of the intensity of solar radiation at the three Smithsonian observing stations on Mount Montezuma, Chile, Table Mountain, Calif., and Burro Mountain, N. Mex. Observations were made on every suitable day throughout the year, and the results were transmitted to Washington where they are used in investigations on the variability of solar radiation and on the relation between this variability and the earth's weather.

In geology, Dr. W. F. Foshag directed an expedition in cooperation with the U. S. Geological Survey with the purpose of studying certain strategic-mineral resources of Mexico. Dr. Charles E. Resser continued his studies of Cambrian rocks from Montana into the Canadian Rockies, obtaining much new information and many desirable specimens pertaining to the ancient Cambrian period. Dr. G. Arthur Cooper made large collections of Carboniferous and Permian fossils in Texas and Oklahoma, including much material hitherto lacking in the National Museum collections. A third expedition to the Bridger Badlands of southwestern Wyoming in search of extinct vertebrate animals was directed by Dr. C. Lewis Gazin; many interesting exhibition and study specimens were brought back to the museum, including a 1,270-pound slab containing 12 or 13 fossil turtles.

In biology, Dr. E. A. Chapin visited the island of Jamaica to continue his studies of the insect fauna with special reference to the termites. Large collections of the plants of Cuba were made by C. V. Morton, who spent two months on the island in botanical field work accompanied by two Cuban Government botanists.

In anthropology, Dr. T. D. Stewart visited Peru to make a scientific examination of the skeletal remains exposed in the numerous ancient cemeteries of that country; he also gathered information on the skeletal collections in Peruvian museums. As an extension of Smithsonian cave explorations in the Big Bend region of Texas, Walter W. Taylor investigated caves in the region of Ciénegas, Coahuila, Mexico, some twenty caves being excavated in the course of the work. Dr. Frank H. H. Roberts, Jr., conducted archeological investigations near the town of San Jon, eastern New Mexico, revealing four types of projectile points from four stratigraphic horizons, the