scrubby oaks. At higher elevations fir and pine tres are abundant.

The area is underlain by igneous rocks that appear to be chiefly basaltic and andesitic flows and tuffs. The sequence of the rocks in part in the Lake Creek district comprises, beginning with the lowest flow, a platy basalt, 500 feet or more thick; a red basalt tuff, commonly manganiferous, 100 to 300 feet or more thick; a platy basalt, a few feet to 100 or more feet thick; dark gray to buff,locally manganiferous, andesitic tuffs and breccias, a few feet to 500 feet thick; vesicular to compact massive gray and purplish gray andesitic flows and tuffs, about 500 feet thick; and dense black basalt that weathers light gray on the surface, a few feet to more than 100 feet thick.

About 1,500 tons of ore, containing at least 15 per cent. of manganese, is "in sight." In addition, incomplete prospecting by drilling and by open cuts indicates that at least 4 acres are probably underlain by 10 feet of ore (about 120,000 tons) containing probably 10 per cent. of manganese. The surface indications in other parts of the district warrant an estimate that they may yield 130,000 tons more of material carrying at least 10 per cent. of manganese, so that the probable reserves of ore of this grade amount to at least 250,000 tons.

EXHIBIT OF MINERALS USEFUL IN WAR

Graphically displayed in the Hall of Minerals of the American Museum of Natural History is a series of minerals intended to visualize the steps necessary in the development of war munitions from the crude ore to the finished product, and to point the urgent need of domestic production. Included in the exhibit are the rarer minerals such as mercury, nickel, manganese, chromium, tungsten, vanadium and molybdenum, and under each specimen of these a label indicating in what particular industry it is used. For instance we find molybdenum steel is used in the construction of the inner tubes of large guns, as it has been found that this metal best resists the erosion caused by the gases developed by smokeless powder.

There are also displayed small distribution maps showing the occurrence of the ores in the United States and other countries, giving locations of the principal supplies prior to the war, and indicating regions in this country worthy of development. Particularly interesting is the display of finished products. Through the courtesy of a number of prominent manufacturers, material has been secured which illustrates how these minerals and metals are extracted and are being turned into tools for our army forces. By this means one can trace the application of mercury from cinnabar—how the primers are charged with fulminate of mercury which explodes the hand and rifle grenades now being so successfully used in pushing back the Teuton forces. One may also see a sectional barrel of the three-inch naval gun with its lining of molybdenum steel. Also interesting and instructive is the series showing the many stages required in the manufacture of a completed nickel-jacketed bullet like those now being used by thousands in our rifles, machine guns and revolvers.

Stamped on the lead insert of the .303 caliber cartridge used in the Lee-Enfield rifle of the British Army, are the letters "U. S.," which must have served as a reminder to the Kaiser's troops, in the early part of the war, that these particular arguments were made in the United States. Another display makes comparison of these modern messengers of death with those in use during our Civil War.

LIBRARY OF THE EDGEWOOD ARSENAL LABORATORY

Major Wm. Lloyd Evans, Chemical Warfare Service, has addressed the following letter to Colonel Wm. H. Walker, commanding officer:

As we are becoming more settled in our laboratory work, the need for the well-known handbooks and chemical journals becomes more apparent daily. We are badly in need of such works as Beilstein's *Organische Chemie,* Landolt-Börnstein, *Tabellen, Journal of the American Chemical Society, Journal of Industrial and Engineering Chemistry, Metallurgical and Chemical Engineering, Journal of the Society of Chemical Industry, Transactions*

of the American Society of Testing Materials, Transactions of the American Electrochemical Society, and many others that readily suggest themselves. Through the kindness of the duPont Company, of Wilmington, we have been able to locate the owners of a few of these desirable works, but as you can readily imagine they are very difficult to obtain. You will be happy to know that Dr. Ira Remsen has offered us his *Gmelin-Kraut* as a loan.

It has occurred to me that a notice placed in the *Journal of Industrial and Engineering Chemistry* and also in SCIENCE, explaining the needs of this laboratory, might bring forth loans of books we greatly desire. If the commanding officer, Edgewood Arsenal, concurs in this view, might I respectfully suggest that this notice be asked for, and that all communications in reference to the same be made to the commanding officer, Edgewood Arsenal?

Colonel Walker has approved the suggestion and has authorized the publication of the letter. He will be glad to receive books loaned to the laboratory and to return them without damage at the end of the war. In case of damage or loss involving any or all of the books the Edgewood Arsenal assumes liability up to 150 per cent. of the original price. The cost of packing and shipping the books to and from Edgewood Arsenal will be borne by the government.

ENDOWMENT FOR ENGINEERING RESEARCH

AT a joint meeting of the trustees of the United Engineering Society with the Engineering Foundation Board in New York on October 7 announcement was made that Ambrose Swasey of Cleveland, Ohio, had given the Engineering Foundation an additional $100,000 for endowment of engineering research.

Mr. Swasey, who is a past-president of the American Society of Mechanical Engineers, is well known as a designer and builder of large telescopes and other optical instruments and fine machine tools. In 1915 he gave $200,000 for engineering research, so that the total endowment is now $300,000. Mr. Swasey's original gift made possible the establishment of the Engineering Foundation by the United Engineering Society, representing the American Society of Civil Engineers, the American Institute of Mining Engineers, the American Society of Mechanical Engineers and the American Institute of Electrical Engineers. His gifts have been inspired by his conviction of the necessity for research in engineering science not only in connection with the war but for keeping the United States in the forefront of nations in industrial development. This latest gift is an expression of Mr. Swasey's appreciation of the war service which the United Engineering Society and the Engineering Foundation have rendered to the country.

SCIENTIFIC NOTES AND NEWS

DR. VERANUS A. MOORE, head of the New York State Veterinary College at Cornell University, was elected president of the American Veterinary Medical Association at the annual meeting held recently in Philadelphia.

DR. A. E. KENNELLY, of Harvard University and the Massachusetts Institute of Technology, has recently returned from a trip overseas during the summer on special duty for the United States Army Signal Corps.

LIEUTENANT COLONEL WILLIAM H. WELCH, of the Johns Hopkins Medical School, now attached to the surgeon-general's staff at Washington, is recovering from an attack of influenza.

LIEUTENANT COLONEL THOMAS R. BOGGS, Baltimore, has been made chief medical consultant for the air service of the American Expeditionary Forces, attached to general headquarters.

CAPTAIN MADISON BENTLEY is now president of the Aviation Examining Board, examining aviation recruits from New England colleges.

CHARLES F. BROOKS has received leave of absence from Yale University where he was instructor in geography, in order to become an instructor in meteorology in the Signal Service.

MAJOR GENERAL WILLIAM C. GORGAS, who has now returned from his inspection trip to France, has received from Secretary Baker a letter, which has been made a part of his military record, expressing the appreciation