of medicine. The pioneer conditions of that period are indicated by the fact that he not only established the laboratory of histology and embryology but also had charge of the work in bacteriology and clinical microscopy! According to the faculty minutes at that time 64 laboratory hours were allotted to histology, 10 lectures to embryology and 12 to bacteriology. With the development and expansion of the school, Dr. Lee was soon relieved of the extraneous subjects and concentrated his attention upon histology and embryology. His title as professor of these branches was changed in 1908 to professor and head of the department of anatomy. In 1913, he became professor of comparative anatomy.

Although quiet and modest in demeanor, Dr. Lee was firm and aggressive in his persistent efforts to increase the facilities and improve the standards of scientific laboratory work. For years he served as secretary of the medical faculty. As librarian, he also devoted much time to the foundation and development of the medical library. He visited the various laboratories of Europe and America in developing plans for the erection of a new Institute of Anatomy, which was completed at Minnesota in 1913.

His activities, however, were not restricted to teaching and administrative work. He was active in the investigation of mammalian embryology, and published several important papers on the early development, implantation and placentation of *Spermophilus tridecemlineatus* and related rodents. His collections of material in this field are extensive and valuable.

The breadth of his interests is indicated by his membership in many scientific organizations, including the American Association for the Advancement of Science, Sigma Xi, American Society of Naturalists, American Society of Zoologists (secretary-treasurer of the Central Branch, from 1906 to 1908), American Medical Association, Minnesota Academy of Medicine, American Association of Anatomists and Anatomische Gesellschaft.

In religion, he was a Unitarian. He was deeply interested in the Masonic order, and was a charter member of the University Lodge and of the Acacia fraternity. As a Knight Templar, he served as president of the council. In the Scottish Rite bodies, he was Master of the Lodge of Perfection and was honored with the 33rd degree of that organization. He was highly esteemed by his colleagues and is affectionately remembered by thousands of former students, who speak of him familiarly as "Tommy."

UNIVERSITY OF MINNESOTA C. M. JACKSON

WILLIAM AUGUST PUCKNER

DR. WILLIAM AUGUST PUCKNER, secretary of the Council on Pharmacy and Chemistry of the American Medical Association since March 1, 1906, died at the Presbyterian Hospital in Chicago, on October 1, 1932, aged 68.

Dr. Puckner was born in New Holstein, Wisconsin, educated at the Chicago College of Pharmacy, at Harvard University and the University of Heidelberg. He was professor of chemistry at the old Chicago College of Pharmacy, now the School of Pharmacy of the University of Illinois, from 1890 to 1910. He was a charter member of the Chicago section of the American Chemical Society and was chairman of the Chicago section in 1903. For many years Dr. Puckner was considered one of the leading alkaloidal chemists of the world. On March 1, 1906, Dr. Puckner was chosen secretary of the Council on Pharmacy and Chemistry and has continuously held that position for 26 years, during periods of which time it required courage to carry on in the face of great difficulties. In 1909, his vision became so impaired that it was necessary for him to give up laboratory work entirely and even to have the services of a guide. In spite of this handicap, Dr. Puckner carried on efficiently a most useful work in the interest of public good.

Dr. Puckner was a member of the committee on revision of the U. S. Pharmacopoeia and of the committee on synthetic drugs of the National Research Council. He received honorary degrees from the University of Pittsburgh and the Philadelphia College of Pharmacy.

P. N. L.

RECENT DEATHS

DR. WILLIAM LAMBERT RICHARDSON, professor emeritus of obstetrics and from 1899 to 1907 dean of the faculty of medicine of Harvard University, died on October 20, in his ninety-first year.

DR. MARCUS BENJAMIN, industrial chemist and editor of the publications of the U. S. National Museum, died on October 22, at the age of seventy-five years.

TINIUS OLSEN, a pioneer in the development of testing machinery in the United States, died on October 20, at the age of eighty-six years.

MEMORIALS

THE bicentenary of the birth of Nevil Maskelyne, astronomer royal at the Greenwich Observatory from 1765 until his death in 1811, occurred on October 6.

MEMBERS of the department of geological sciences at the University of California have presented to the university a portrait of the late Professor Arthur S. Eakle, done in charcoal by Peter Van Valkenburgh.

RESOLUTIONS expressing grateful appreciation of contributions made by the late Dr. George F. Kunz to the development of the American Museum of Natural History have been adopted by the scientific and ad-

ministrative staffs of the museum and forwarded to the board of trustees. It is suggested that a suitable tablet in memory of Dr. Kunz should be installed in the Morgan Memorial Hall.

A MEMORIAL to Sir Andrew Balfour at the London School of Hygiene and Tropical Medicine was unveiled on October 6 by the Earl of Athlone, chancellor of the University of London.

SCIENTIFIC EVENTS

THE MOUNT ST. KATHERINE OBSERVATORY OF THE SMITHSONIAN INSTITUTION

DR. CHARLES G. ABBOT, secretary of the Smithsonian Institution, announces the establishment of a solar observatory on the summit of Mt. St. Katherine in the Sinai desert.

The decision to establish the observatory on this desolate peak, rising 8,540 feet above sea level out of the desert, concludes, temporarily at least, a long search for the highest, driest accessible spot in the eastern hemisphere. In this search the possibilities of the high mountain tops of three continents have been surveyed.

Last year the institution abandoned its station on Mt. Brukkaros in south West Africa after making observations there for five years. At the time of its establishment it was the best that could be found in a country with stable political conditions, but it became steadily apparent that the errors due to unavoidable natural conditions—haze and terrific winds—were too great to make the observations fully satisfactory.

Alfred F. Moore, of the Smithsonian staff, finally turned to the Sinai desert when he was unable to find a suitable station on the African continent. He climbed Mt. St. Katherine and took observations for more than 100 days on the summit. These were judged sufficiently satisfactory to warrant the setting up of a permanent station, for which funds have been provided.

Mt. St. Katherine is about 12 miles south of Mt. Sinai, whose summit tradition accepts as the place of the revelation described in Exodus. The Biblical account, however, is vague and there has been considerable dispute among scholars. There has been a persistent tradition linking the Biblical story with the higher mountain. The nearest neighbors of the Smithsonian astronomers will be the monks of the great monastery of St. Katherine, 10 miles below on the mountain side.

For years the astrophysical observatory of the Smithsonian Institution, under the direction of Dr. Abbot, has been measuring daily the amount of solar radiation in different parts of the western hemisphere —at Washington, Table Mountain in California and Mt. Montezuma, Chile. The observations must be made with extreme accuracy under the most favorable conditions and it is essential to find a mountain in a desert where the water vapor is at a minimum and where there is a minimum of dust.

Mt. Montezuma in Chile is considered an almost ideal site. But the combination is hard to find in the Old World. In addition to the physical requirements for satisfactory observations endurable living conditions for the observer are necessary and it is essential that there be stable political conditions.

Mt. St. Katherine comes close to satisfying conditions. The monks of the neighborhood are friendly. There is very little moisture in the air. The winds are light and Mr. Moore's observations established that they generally blow from the Mediterranean Sea at the north, rather than from the dusty deserts to the eastward and westward.

THE NEW CRYOGENIC LABORATORY OF THE CALIFORNIA INSTITUTE OF TECHNOLOGY

THE new cryogenic or low temperature laboratory under construction at the California Institute of Technology is designed to produce comparatively large quantities of liquid hydrogen and helium at low cost. Science Service reports that the output is expected to be about five liters of liquid hydrogen an hour at a cost of $2.00 per liter. The plant in Berlin, which is the largest in the world, can produce twenty liters an hour.

There are so far only four European cryogenic laboratories and four in America, one at the Bureau of Standards in Washington, D. C., one in Berkeley, California, a third in Toronto, Canada, and a fourth at the Johns Hopkins University. Russia is planning a large plant in Charkow, France intends to install one in Paris, and Göttingen is about to build one also.

Professor A. Goetz, who is responsible for the Pasadena low temperature work, recently inspected European equipment. He observes that the first consideration in the design of a cryogenic plant is the danger of explosions due to the presence of liquid hydrogen. Accidents, sometimes involving fatalities, have occurred in different laboratories in the past, but they are avoidable. In fact, the oldest cryogenic laboratory, which is at Leiden, Holland, has been in daily operation since its opening by K. Onnes twenty years ago. Since his death a few years ago, its traditions have been carried on by De Haas. In all that time there has never been a single explosion.