nesota Press is publishing his "Measures of Double Stars," left at the time of his death. The book includes a number of measurements made by William O. Beal, who was assistant professor of astronomy at the University of Minnesota from 1913 until his death in February, 1930. The records in the book were made during a period of forty years, and consist of the measures of 1,185 stars. Both Mr. Leavenworth and Mr. Beal were members of Sigma Xi and of the American Astronomical Society.

AT the same time that Admiral Richard E. Byrd received the Langley Memorial Medal, America's highest award for achievement in the field of aeronautics, a similar honor was conferred posthumously on Charles Matthews Manly in recognition of his pioneering work in connection with the first aeroplane flight in this country. Charles W. Manly, a Cornell undergraduate, accepted this award on behalf of his father. The exercises took place at the Smithsonian Institution in Washington during the annual meeting of the Board of Regents on December 11. Chief Justice Charles E. Hughes made the presentation address. The Langley Medal has been awarded only five times previously—to the Wright brothers, Eiffel, Curtiss and Lindbergh. The medal is cut from a die kept in the French mint in Paris. The belated honor to Charles M. Manly comes as a result of the suggestion of Mr. Charles L. Lawrance, president of the Wright Aeronautical Corporation. On his graduation from Cornell in 1898, Charles Matthews Manly went to Washington as chief assistant to Samuel P. Langley and was engaged in aviation development at the Smithsonian Institution until 1905. He built and piloted the historic Langley aeroplane in its tests in 1903, when the work was stopped by lack of funds from congressional appropriations.

RECENT DEATHS

DR. M. A. MINER, until his retirement in 1916 professor of chemistry and pharmacology in Northwestern University, died on December 11 at the age of eighty-one years.

PROFESSOR ALBERT DICKENS, head of the department of horticulture of the Kansas State College at Manhattan since 1902, died on November 28 at the age of sixty-two years.

THE following deaths are reported in *Nature:* Dr. J. W. Evans, C.B.E., F.R.S., a past president of the Geological Society, on November 16, aged seventy-three years; Dr. E. R. Frazer, a distinguished pathologist and benefactor of the University of Oxford, on November 17, aged sixty-three years; Dr. G. H. K. Macalister, formerly principal of the Singapore Medical College and editor of the *Malaya Medical Journal,* on November 2, aged fifty-one years; Dame Mary Scharlieb, a pioneer in medical education for women, on November 21, aged eighty-five years; Professor J. H. Teacher, St. Mungo (Notman) professor of pathology at Glasgow University, on November 21, aged sixty-one years.

SIR FRANCIS OGILVIE, former director of the National Science Museum at South Kensington, died in Edinburgh on December 14 at the age of seventy-two years.

SCIENTIFIC EVENTS

ARCHEOLOGICAL FIELD WORK OF THE UNIVERSITY OF MINNESOTA IN 1930

DR. ALBERT ERNEST JENKS, professor of anthropology, University of Minnesota, has returned to Minneapolis after an absence of eight months in archeological field work in North Africa and Europe. Accompanied by Mrs. Jenks and two graduate students, Lloyd A. Wilford and Ralph Brown, Dr. Jenks, in cooperation with Logan Museum, dug shell-heap culture during the three spring months on the high plateau of central Africa.

The Minnesota party spent June in reconnaissance farther south in the barren deserts of Algeria and Tunisia. It located eleven unrecorded shell-heaps, found habitation grottoes and rock shelters in two areas never studied, and in its excavations had particularly good fortune. About 6,000 pieces of flint from the one shell-heap trenched were brought back, while an equal number were left with the Algerian government. The party also found seven human burials in undisturbed position which are of the age of the shell-heap at its mid-development. This skeletal material becomes particularly valuable in America, since the University of Minnesota purchased from M. Arthur Debruge, of Constantine, the type-skull of the shell-heap culture of North Africa, the "Mechta el Arbi" man, found by Debruge in 1912 and first measured and published in 1923–1924 by M. Henri Logotala.

Though the prehistoric stone culture of North Africa was named "Capsian" from the Latin name of the present Tunisian oasis of Gafsa, and again named "Getulian" (a pre-Roman local tribal designation), yet the vast amount of the artifacts assembled for the scientific study of that culture came from the provenence around about Redeyef—a desert phos-

phate mining camp some forty air-line miles west of Gafsa. That area lies in the once well-watered triangle of some twenty-five kilometers along its base on the Southern border fixed by the three barren mountains, Bliji, Chouabine and Alima, with Redeyef close to that base line near its middle. Professor Jenks was fortunately able to purchase the collection of M. Louis Gaillot, of Redeyef, gathered over a period of twenty-five years, which played an important part in M. Gobert's studies of that North African culture ranging well throughout the time and type of the Aurignacian stage of culture in Europe. That collection, together with the entire Debruge collection of artifacts, of animal bones, and of seven human crania—including the Mechta el Arbi type-skull, and the abundant materials resulting from Minnesota digging and surface find far afield in 1930—enable the University of Minnesota to contribute an important part to the ever-growing source-material of prehistory available for students in America.

July and August were spent digging in France and Czecho-Slovakia. In France, Professor Jenks was with Dr. Henri Martin at his famous Mousterian site at La Quina and there dug and from there brought back an extensive and excellent collection of flint and bone implements and more than 100 pieces of animal bone which show the marks of the flint tools of Neanderthal man. The time spent in Czecho-Slovakia was largely in the nature of a reconnaissance, but fruitful digging was done as arranged by the Zemska Museum of Brno. In the vicinity of Znojmo, Neolithic-age, Bronze-age and Hallstad-iron age sites were dug and small amounts of typical cultural materials were thus secured and exported. Besides a considerable collection of identified prehistoric materials were purchased in Moravia.

Mr. Wilford, assistant to Professor Jenks, returned to the University of Minnesota the middle of June. During the summer he continued archeological work at the Minnesota Mimbres site on the Galaz ranch in southwestern New Mexico. A small amount of excavation was also undertaken in the Upper Gila culture (bordering the Mimbres on the north) and in the Chihuahua culture (bordering Mimbres on the south.)

The archeological program at the University of Minnesota is made possible over a term of years through the gift of money by interested citizens of Minneapolis. The Minneapolis Institute of Arts, as well as the University of Minnesota, shares in the materials acquired by research and purchase.

WORK OF THE SMITHSONIAN INSTITUTION

IN his annual report presented to the regents of the Smithsonian Institution, Secretary Charles G. Abbot lists a number of important achievements in the "increase of knowledge" and one material event which is certain to make possible a greater number of such achievements in future years.

That event is the authorization by Congress of an appropriation to add wings to the natural history building of the National Museum at a cost of $6,500,000. This will mean, besides increased exhibition space, many new laboratories for the preservation and study of the collections.

Of the achievements reported by Dr. Abbot is the discovery by the Astrophysical Observatory of an apparently considerable influence of short period solar variation on the temperature of the United States. That is, an average change of 0.8 per cent. in the sun appears to cause a temperature change of the order of 5° Fahrenheit in Washington. "Although this relation is complicated," says Dr. Abbot, "it offers promise of weather forecasting nearly a week in advance."

The institution's new division of radiation and organisms has made rapid progress in the construction of laboratories for physical, chemical and biological investigations. In an experiment on the amount of bending of plants towards light of various wave lengths, it was found that red or infra-red light produced no bending of the plant; that yellow light produced a small bending; that green light was one thousand times more effective than yellow; and that blue light was thirty thousand times more effective than yellow.

During the year the Smithsonian brought to a conclusion its support, which has lasted twelve years, of Dr. R. H. Goddard's experiments in designing and building a rocket to explore the unknown upper layers of the atmosphere.

Dr. Goddard's experiments are now going on in New Mexico under a gift from the late Simon Guggenheim. "It is a pleasure to record here," says the report, "that the Smithsonian has again been able to support during its more or less uncertain pioneering stages an investigation of great promise for the increase of knowledge."

In the natural sciences twenty-eight major expeditions were sent out during the year to widely scattered regions. These included expeditions to remote Eskimo and Indian tribes in Alaska by Dr. Aleš Hrdlička and Mr. Henry B. Collins, Jr.; an extended botanical exploring trip along the Amazon in Peru and Brazil by Mr. Ellsworth P. Killip; intensive collecting of mollusks in the West Indies by Dr. Paul Bartsch; as well as anthropological, biological and geological expeditions to Africa, Spain, the Philippines, China, Siam, and many parts of this continent.

The Bureau of American Ethnology excavated Indian sites in Florida and Arizona, carried on field