their separateness without, however, losing sight of their intimate interdependence.

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## ROLLIN ARTHUR HARRIS

DR. ROLLIN ARTHUR HARRIS, of the U. S. Coast and Geodetic Survey, died suddenly of heart disease on the twentieth of January, 1918, in the fifty-fifth year of his age. He was born in Randolph, N. Y., April 18, 1863, and received his early education in the public schools and high school of Jamestown, N. Y. In 1881 he entered Cornell University, receiving the degree of Ph.B. in 1885. He remained at Cornell, taking up graduate work in mathematics and physics. In 1886–7 he was a fellow in mathematics and in 1888 he received the degree of Ph.D. From 1889 to 1890 he was a fellow in mathematics at Clark University where he pursued special studies in mathematics and lectured on mathematical subjects.

He entered the Tidal Division of the U. S. Coast and Geodetic Survey as computer in 1890, through the United States Civil Service. After becoming familiar with the work, he began the preparation of a publication into which would be gathered the tidal information scattered in various journals and memoirs and in which the methods of tidal reduction and prediction would be coordinated. Dr. Harris threw himself into the work with enthusiasm. Because of his splended training in mathematics and his ability, he was specially fitted for the work, and the result, as embodied in the "Manual of Tides," which appeared in six parts in various reports of the superintendent of the Coast and Geodetic Survey, between the years 1884 and 1907, has placed our country well at the front in that branch of scientific enquiry. Taken as a whole the "Manual of Tides" is a monumental work of some 1,200 quarto pages of text and plate containing a large amount of original contributions, in a field cultivated by the most brilliant mathematicians.

It is gratifying to know that the "Manual of Tides" has received the recognition it merited from scientists the world over. Perhaps it may not be out of place here to quote the words of the eminent French mathematician Henri Poincaré. In his "Mécanique Céleste" he subjects the various tidal theories to searching analysis and sums up by saying that "it appears probable that the final theory will have to borrow from that of Harris a notable part of its essential features."

Dr. Harris published a number of articles in SCIENCE and other scientific journals on mathematical and tidal subjects. Mention should also be made of "Arctic Tides," a monograph published by the Coast and Geodetic Survey in 1911 which is a classic of its kind.

Personally, Harris was a man of modest bearing, somewhat reticent, but possessed of a pleasing sense of humor. He was an indefatigable worker with a high conception of the obligations of the scientist. He was a member of scientific societies, both local and national. He leaves a widow, Emily Doty Harris, whom he married in 1890.

His loss will be felt by his friends and colleagues of the Coast and Geodetic Survey and by the many scientific men, engineers and explorers in many parts of the world, who brought their problems to him and received the benefit of his wide knowledge in a peculiarly abstruse branch of science.

## SCIENTIFIC EVENTS

### DR. FEWKES AND THE BUREAU OF AMERICAN ETHNOLOGY

MR. FREDERICK WEBB HODGE, who has been the head of the Bureau of American Ethnology of the Smithsonian Institution since 1905, has resigned to accept a position in connection with the Museum of the American Indian, founded by George G. Heye, of New York City. Mr. Hodge's resignation, to take effect February 28, has been accepted with regret by the secretary of the Smithsonian Institution, with whom he has been associated in scientific work for many years. Mr. Hodge will be greatly missed by his associates and generally by the men of Washington's scientific colony, among whom he is well known.

Dr. Jesse Walter Fewkes, a distinguished archeologist and naturalist, has been appointed chief of the Bureau of American Ethnology in Mr. Hodge's place. Dr. Fewkes has been an ethnologist on the Bureau's staff since 1895 and is a member of the National Academy of Sciences and of many scientific societies in this country and abroad.

Dr. Fewkes is a graduate of Harvard University, with the degrees of A.M. and Ph.D. He was a student in the University of Leipsic, Germany, from 1878 to 1880; served as assistant in the museum of comparative zoology at Harvard University from 1881 to 1890; was a member of Louis Agassiz's school at Penikese Island and had charge of the laboratory of Alexander Agassiz, at Newport, Rhode Island, for four seasons. He was secretary of the Boston Society of Natural History from 1885 to 1890. During this year, while in California studying marine zoolgy, he became deeply interested in the aborigines of the southwest and gave up natural history to devote himself entirely to the ethnology of the Indians of New Mexico and Arizona. For five years he had charge of the Hemenway Expeditions organized for the study of the southwest Indians, at Zuni and Hopi. In 1895 he was appointed an ethnologist in the Bureau of American Ethnology. He is preeminently a field worker, and the record of his original researches on archeological subjects can be found in the *Journal of American Ethnology*, of which he was editor, and in the Bulletins and Reports of the Bureau of American Ethnology and the Smithsonian Institution. He has made extensive collections of ancient pottery and other prehistoric aboriginal objcts, the more notable of which are now on exhibition in the National Museum.

One of the important lines of work inaugurated by Dr. Fewkes was the repair of the large ancient ruin, consisting of several compounds composed of massive buildings, known as "Casa Grande" in southern Arizona and cliff dwellings and other ruins in the Mesa Verde National Park, Colorado. Previously to this work, no care was taken by archeologists to repair and otherwise preserve from rapid destruction the prehistoric buildings they had excavated. An increased interest in these antiquities led to their protection by the government and to the limitation of work on them to systematic scientific investgators. Up to the present time four large ruins on the Mesa Verde—viz., Spruce-tree House, Cliff Palace, Sun Temple, and Far View House—have been preserved in this manner under his direction.

Some of the scientific writings of Dr. Fewkes are: "The Snake Ceremonials at Walpi"; "An Archeological Expedition to Arizona in 1895"; "Two Summers' Work in Pueblo Ruins"; "Casa Grande, Arizona"; "Excavation and Repair of Spruce-tree House"; "Cliff Palace"; "Sun Temple"; and "Far View House." To meet the increasing desire for archeological information on the West Indies, after the close of the Spanish War, several visits were made by him to Porto Rico, a report on which was published in an elaborate memoir, "The Aborigines of Porto Rico and Neighboring Islands."

Dr. Fewkes has received the degree of LL.D. from the University of Arizona, was made a Knight of the Order of "Isabela la Catolica" by the queen regent of Spain in 1872, and was the recipient of a gold medal from King Oscar of Sweden for his archeological researches.

## PUBLIC-HEALTH ADMINISTRATION IN RUSSIA

RUSSIA, with about 180,000,000 inhabitants, 85 per cent. of whom live in the rural districts, has developed a combined system of free medical care and health protection for her rural population to a point which is unique and of which we are only beginning to dream. This is a statement of Professor C.-E. A. Winslow, professor of public health at the Yale Medical School, and member of the Red Cross Mission to Russia in 1917, who, in *Public Health Reports*, as quoted by the *Journal* of the American Medical Association, gives the history and many details of the public-health administration in that country which he studied in the past year during the revolution.

Previous to the creation of the zemstvos in 1864 by Alexander II., hospitals had been established and medicine had developed chiefly in