

sale to the Hittites. An interesting innovation in the work on this site is the employment in air photography of a small captive balloon which carries a camera operated from the ground. Its use is fully described for the first time by Mr. P. L. Guy in *Antiquity*, June 1932.

A concession from the Persian Cabinet to explore and restore the palace of Persepolis has been inoperative until recently owing to lack of funds; but a generous anonymous donation has now made it possible to begin work. Dr. E. Herzfeld, of the University of Berlin, has been placed in charge of the excavation. As a preliminary, and in order to provide accommodation for the expedition, six chambers in the palace have been cleared. These chambers have afforded some interesting material,

which *inter alia* indicates that they had once been part of the quarters of the harem of Darius.

Of the activities of the Institute in research and publication in Chicago, no more can be said here than that they keep fully abreast of the strenuous work of the expeditions in the field in dealing with the original material, and at the same time foster inquiry on other and cognate lines. Throughout its activities the characteristic feature of the work of the Institute is the breadth of vision with which its operations have been planned, combined with a singleness of direction towards the aim which was marked out for the Institute at its inception. It is scarcely necessary to indicate to what an extent in this, as in other matters, the Institute is indebted to its director, Dr. J. H. Breasted.

Obituary

M. SANTOS-DUMONT

THE death at São Paulo, Brazil, on July 23, of M. Alberto Santos-Dumont, at the age of fifty-nine years, removes another of the few remaining pioneers through whose efforts mechanical flight was achieved. Santos-Dumont was the first in Europe to make a public flight in a heavier-than-air machine, while his numerous experiments with dirigible balloons stimulated the progress of airship construction. His enthusiasm and intrepidity led him into many adventures, and his flights with small airships in the neighbourhood of Paris some thirty years ago made his name famous throughout the world.

Santos-Dumont was born on a large coffee estate at São Paulo on July 20, 1873, and it was during a visit of his family to France in 1892 that he began his work on dirigible balloons. By 1898 he was in possession of his first airship, and during the next few years he constructed about a dozen of various sizes, driven by internal combustion engines. With one of these, on Oct. 19, 1901, he made a flight from St. Cloud around the Eiffel Tower and back, in 29½ minutes, and thus secured the prize of 125,000 francs offered by M. Deutsch de la Meurthe. To commemorate the event, the Brazilian Government struck a special medal. The airship in which the feat was accomplished was of 22,000 cub. ft. capacity, and was driven by a 12 h.p. engine. During his experiments Santos-Dumont had many narrow escapes, and on one occasion had to be rescued from the roof of the Trocadero by firemen. His airships were all of the non-rigid type.

From the airship Santos-Dumont next turned to the aeroplane, then engaging the attention of the Voisins, Ferber, Archdeacon, Blériot, and others in France. Though familiar with the gliding experiments of Octave Chanute, little was yet known by workers in Europe of the aeroplane of the Wright brothers and of their historic flights in December 1903 at Kitty Hawk, South Carolina. By the beginning of 1906, however, Santos-Dumont had constructed a biplane with wings of box-kite form, and with this machine, on Aug. 22 that year, made the first public flight on record in the Old World.

The same year he made other short flights. The machine was called *The Bird of Prey*. "Its main double-decker planes", wrote Miss Gertrude Bacon, "were tilted up at a considerable angle. There was no tail, but in front a big box-kite elevator; so that the thing appeared to fly tail foremost, or as someone said, like a duck with its neck outstretched. On a light, open framework in the midst, mounted on bicycle wheels, was the 50 horse-power Antoinette motor, driving the propeller at the back, and the sort of wicker waste-paper basket in which the aviator stood."

According to the *Times*, M. Santos-Dumont will be buried in the family vault at São Paulo, over which a monument will be erected identical with that set up some years ago at St. Cloud to mark his historic flight of 1901.

PROF. A. HUMBOLDT SEXTON

PROF. A. HUMBOLDT SEXTON died on June 21, at Jersey, at the age of seventy-eight years, after a long illness. He was the eldest son of Dr. George Sexton, who was well known in his time as a lecturer on spiritualism and later as a Christian apologist, and he was educated at private schools and the Royal School of Mines. He obtained a Royal Exhibition tenable at the Royal College of Science, Ireland, in 1871. In 1873 he became assayer to the Mining Company of Ireland, and in the following year was appointed chemist to the Broughton Copper Works.

Appointed science master to the Wedgwood Institute, Burslem, in 1881, in the following year Sexton became lecturer in chemistry and metallurgy at the Manchester Technical School. Two years later he was appointed professor of metallurgy at the Glasgow and West of Scotland Technical College, a position which he held until his retirement in 1909 with the title of emeritus professor.

Prof. Sexton was a past-president of the West of Scotland Iron and Steel Institute, and his numerous books on chemistry, metallurgy, and refractories were well known and much used in schools and colleges. He also published many papers in technical and scientific publications.