

by two pneumatically operated valves near the top and there are four inverted open canvas chimneys in the bottom, 7.5 ft. in diameter and 17 ft. long, to relieve it of surplus gas when fully inflated by the reduction of the external pressure.

The total lift of the balloon on the ground is more than 8 tons. This figure includes the weight of the balloon itself, men, equipment and ballast. The gondola is 9 ft. in diameter and weighs 638 lb. empty. It is painted white both inside and externally above the equatorial plane and black below. An arm, 14 ft. long, extends horizontally from it carrying a fan on the end, which supplies a tangential force to rotate the whole balloon. The gondola is provided with an 80 ft. round point triangular parachute operated by a pilot parachute to draw it from its bag.

INSTRUMENTS AND EQUIPMENT

The bag is provided with a 3-ft. dial thermometer near the top to be viewed directly from the gondola through porthole and vent. For cosmic ray studies, Prof. R. A. Millikan has supplied three ionisation chambers, one exposed, one in two inches of lead and one, weighing 600 lb., in four inches of lead. Dr. W. F. G. Swann has supplied counter sets for various elevations from the horizontal, a lead-shielded chamber for 'bursts' and a Wilson expansion chamber. Mr.

O. H. Gish has supplied an apparatus consisting of a vertical chimney external to the gondola 1 ft. in diameter and 3 ft. high for a continuous ion count of the external air. Sun, sky and earth brightness records will be taken from outside the gondola, and records made of temperature and barometric pressure with resistance thermometer and short mercurial barometer respectively. The readings of the latter will be further checked by vertical camera studies of the ground and transit circle observations of the balloon made from the ground.

The sun and sky light will be studied spectrographically both from within and without the gondola for ozone content of the stratosphere. Mention has already been made of the vertical camera for height observations, but other cameras will photograph the horizon to obtain the figure of the earth, and a motion picture camera is provided to record any moving events. Air samples will be taken and spores collected, and even cultures of fruit flies are to be exposed to the rigours of the stratosphere. Finally, the observers will be in continuous radio communication with the ground on a transmission of 13,050 kilocycles per second, and a study will be attempted of the diffraction by the horizon of two sets of modulated waves emitted from the gondola aerial at 56,000 kilocycles and 112,000 kilocycles a second respectively.

News and Views

Retirement of Sir George Adam Smith

WHEN the autumn term begins, the Very Rev. Sir George Adam Smith will retire from the principalship of the University of Aberdeen. His long service of twenty-six years as principal exceeds that of any of his predecessors since the present University arose from the union of "The King's College" and "The Earl Marischal's College" on the passing of the first Universities Act of 1858. He has watched and guided the University during a period of notable development, when a demand for specialisation has increased the teaching staff by the addition of nine professorial chairs, three readerships, and forty-seven lectureships; and when these changes, together with an increase in the number of students from 1,007 to 1,272, have required considerable additions to the fabric of the University itself. Of equal importance for the future of education and of scientific research has been the formation of linkages binding the University as a working unit with other institutions. In the present year the former United Free Church College in Aberdeen has joined with the University, and co-operation of great promise for the development of biological investigation in the north takes place with the Rowett Institute for

Research in Animal Nutrition, the Macaulay Institute for Soil Research, the Scientific Laboratory of the Fishery Board for Scotland, and the Torry Research Station. In the course of another year a new and vital link between the teaching and clinical aspects of medical subjects will be completed at the new Infirmary. These developments, on which, in some directions, the future of the University depends, Sir George has guided with a tact and balance of mind and with a friendliness and humanity which have endeared him to his fellow-workers in the University; and both town and University appreciate his services in ensuring that common appreciation, co-operation and goodwill unite the civic and academic interests of the community.

Valentin Magnan

THE eminent French psychiatrist, Valentin Jacques Joseph Magnan, the centenary of whose birth was celebrated on May 27 by a special meeting of the Société médico-psychologique, was born on March 16, 1835, at Perpignan, which was also the birthplace of three other celebrated French psychiatrists, Pinel, Esquirol and Falret. His medical education took place first at Lyons and then in Paris, where he