

sulphate in sulphuric acid by animal and man-made protein fibres, as there is no incipient decomposition, such as occurs with nitric acid solutions. Line tracings of magnified fibres have given an adequate demonstration of the theory that directional felting is to be attributed to orientation of fibre units in the form of loops, in a preferred direction at right angles to that of the impulsive forces, and the anisotropic properties of felt produced by directional felting accord with this conception. A study of the physical and chemical properties of different samples and grades of lac has been commenced, and the foundations have been laid for a detailed study of wool hardening. The examination of the fastness properties of various classes of dyestuffs for fur felt indicates that the wet fastness on fur felt tends to be lower than that listed by the manufacturers for wool. The metal-complex type of dyestuff appears to possess excellent fastness properties, but in the laboratory attempts to apply them satisfactorily without undue degradation failed. Practical trials have been made of the influence of temperature in dyeing fur felt in the cone type of machine and in the free circulatory type, while studies of the effect of increases in acidity and temperature of treatment of a series of non-mercuric carrotted furs, prepared with a hydrogen peroxide-nitric acid carrotting agent, showed losses of protein remarkably similar to those for mercuric carrotted furs. Interest in the application of showerproofing agents and work on the assessment of physical properties and dimensional characteristics of felt were maintained during the year under report. An attempt is being made to separate compression from felting by studying a series of experimentally compressed felts, and an apparatus has been constructed for giving a non-destructive measure of air-permeability of wool hoods.

#### Computing Service at the Franklin Institute, Philadelphia

It is reported in the *Journal of the Franklin Institute* (261, 384; March 1956) that a contract has been signed for the installation of a complete UNIVAC computing centre and an integrated computation exhibit in the Franklin Institute in Philadelphia. The centre, which will be operated by Institute personnel under the supervision of Mr. D. Houghton, section chief of the Analysis Section, Division of Electrical Engineering, of the Institute, will be the largest of its kind for public use and the first to be installed in a private institution. The computations to be performed will be either for the Institute's laboratories, in which case they will relate to scientific or engineering problems, or for the public. The exhibition section will portray the historical evolution of the art of computation from the earliest calculating machine, the abacus, to the most modern electronic computer, and a guide will explain in simple and non-technical language how the ultra-modern devices operate. UNIVAC large-scale computer systems, the product of the Remington Rand UNIVAC Division of the Sperry Rand Corporation, are in use in several industrial and government institutions in the United States, and their particular value lies in the great speed of operation, the large amount of information digested and the accuracy of the results obtained because of the automatic self-checking features. In the UNIVAC computer, for example, the high-speed printer sets down the final results at the rate of 78,000 characters a minute.

#### Sondes Place Research Institute

THE Sondes Place Research Institute has published an attractive illustrated booklet (pp. 16; from the Institute, Dorking, Surrey; 1955) describing the organization and services for sponsored research and development in chemistry, chemical engineering and mechanical engineering offered by the Institute. Some twelve hundred problems have been handled by the Institute during its first seven years, and nearly three thousand copies of its occasional bulletin, entitled "Report", are distributed in thirty-nine countries throughout the world, each issue being devoted to a single subject of general interest to industrialists and directors of research. The Institute has developed from a consulting chemical and chemical engineering practice founded in London in 1936 and incorporated as a limited company in 1947, when the present premises on the outskirts of Dorking were acquired. These include laboratories for the chemical, chemical engineering and mechanical engineering departments, a library, stores, administrative offices and drawing office. The pilot-plant house at Sondes Place has a floor area of 2,000 sq. ft., with an annexe of 700 sq. ft. for special investigations, while a further area of 1,680 sq. ft. is now available in the outbuildings of the adjacent property of Milton Heath. The services offered include technical and economic assessment of projects, laboratory research, the development of pilot plant, and the design of full-scale plant.

#### Museum of Applied Arts and Sciences, Sydney : Annual Report for 1954

THE annual report for 1954 of the Museum of Applied Arts and Sciences, Sydney, outlines the requirements and hopes for the future of this progressive museum—probably the foremost of its kind in the southern hemisphere. Urgent needs include a new Spitz planetarium and an orrery, while the long-term policy makes provision for a new site and a new building of some 200,000 sq. ft. to replace the present one of about 27,000 sq. ft. The report states that many valuable and historic exhibits are now confined to storage, and that the limited accommodation for the public makes it almost impossible at peak periods for the exhibits to be appreciated intelligently. Exhibition activities include the display of an important collection of footwear, musical boxes and gramophones, a modern television unit and a transparent plastic woman. As usual, many scientific reports on particular problems, often of national importance, have been prepared by members of the staff.

#### Museum of Applied Science, Victoria : Report for 1953-54

THE report for 1953-54 of the Museum of Applied Science, Victoria (pp. 15; from the Museum, Melbourne, 1955), indicates that the outstanding event was the special display arranged to commemorate the fiftieth anniversary of the achievement of powered flight. The display was in a chronological sequence and included numerous charts on the performance of aircraft, photographs, documents and relics. The exhibition included about ninety different aircraft models ranging from the age of the kite and glider to the modern period of the jet and rocket. The Fleet Air Arm displayed a Sea Fury outside the building. It is also reported that a radiocarbon dating service with the necessary apparatus is being set up by the Museum.