provision for the Government's share was being included in the additional recurrent grants announced on May 9. The Foundation and the Government also proposed to give help on similar lines to a college of advanced technology and another leading technical college. The Government regarded the development of management studies as being of great importance and welcomed the co-operation of industry in these developments.

Cryogenics, Superconductivity and Marine Research

REPLYING to a question in the House of Commons on May 21 regarding research into cryogenics and superconductivity, the Parliamentary Secretary for Science, Mr. D. Freeth, said that the Atomic Energy Research Establishment at Harwell was working on the superconductivity of thin metallic films and on the relation of metallic structure to superconductivity, while work on the mixing of helium III and helium IV had led to a new method of cooling at low temperatures. The Department of Scientific and Industrial Research was supporting work in universities as well as working on the influence of metallurgical factors and other physical factors on superconductivity and on the development of a cyclotron at the National Physical Laboratory. Replying to another question, Mr. Freeth said that research had been carried out for many years at marine laboratories in the United Kingdom, and particularly at the Plymouth Laboratory of the Marine Biological Association, on the concentration by marine animals and plants of the chemical constituents of sea-water—especially, at the present time, cæsium, potassium, sodium, zinc and manganese, and in recent years strontium, iodine, niobium and vanadium.

The British Leather Manufacturers' Research Association

OPEN days were held during May 7–9 in the laboratories at Egham, Surrey. The annual lecture by the director of research had been given earlier in the year at the forty-third annual general meeting of the Association, and during the open days shorter lectures on the work in progress were given by members of the staff. Several of the exhibits dealt with present work on the isolation and composition of various protein and non-protein constituents of skin and on structure and interweaving of the collagenous fibres. A special study is being made of the action of enzymes on the composition and structure of skin, as a background to the tests on hair- and wool-loosening by enzymes. Other work on protein chemistry was shown in the study of the interaction of collagen with 'reactive' dyestuffs. The organic chemistry section dealt with the study of the natural organic tannins. Among the exhibits dealing with technical matters, microscopical techniques for studying adhesion problems and the development of specification tests for various types of leather were of general interest. The popularity of suede garments was reflected in work shown on dyeing and finishing.

The City Museum, Sheffield

THE long overdue inauguration of a new cataloguing system and amount of tedious work which such a change produces, the complete inspection, overhaul and re-housing of the major archæological and natural history reference collections, a library reorganization, and a revision of the system of recording enquiries, comprised the internal, domestic rearrangements of an average and non-spectacular year at the City Museum, Sheffield. The annual report for the year ended March 31, 1962, also records the investigation of the physical and historical features of the site of former glassworks (Pp. 16 + 8 plates. Sheffield: The Museum, 1963).

The South Australian Museum, Adelaide

THE annual report of the South Australian Museum for 1961–62 records the continued efforts made to modify the nineteenth century building so as to accommodate the ever-growing and rich collections of the State (Pp. 17. Adelaide: Government Printer, 1963). The saturation of both storage and display space makes it inevitable that the Government must soon provide the Museum with a modern structure specifically designed to display and safeguard the now largely irreplaceable historical and biological collections. The Museum Board therefore appeals to the Government to provide a new building designed for the installation of modern techniques in visual education rather than to modify continually an out-of-date structure.

Meteorological Data Processing

A NEW high-speed data processing system will be installed in the summer of 1964 at the Meteorological Headquarters, Bracknell, Berkshire. It has just been ordered from English Electric–Leo Computers, Ltd., at a cost of around £400,000, and is known as the *KDF* 9 system. Weather forecasting will be done by the computer through a programme which involves the mathematical solution of the equations of atmospheric motion. The solution has to be carried out in many steps to obtain a forecast for 24 h ahead, and the high reliability and extreme speed of the transistorized system are essential to meet the deadline set by the time of issue of the forecasts. One million additions can be carried out in one second, and the system will be operated almost continuously for seven days per week. Printing out of results can be done at the fantastic speed of 10–15 lines per second with 120 characters in each line. The high capability of the computer is partly the result of a circuitry which can be used on a 'time sharing' basis. Climatological and research branches of the Office will also make use of the computer for processing the masses of weather data available. For example, information in an existing library of 30 million punched cards will be transferred to magnetic tape, and weather observations received at Bracknell will be incorporated daily into this library. The computer system will provide the means for analysing such a tremendous quantity of material in order to answer climatological problems and automatically prepare climatological publications. The system should also be capable of editing some three million characters of incoming teleprinter traffic daily so that various outgoing messages can be dispatched to give recipients only the data which concern them.

Petroleum Multi-products Pipe-line System in Britain

THE Esso Petroleum Company's scheme for distribution of petroleum products in Britain is well summarized both in print and coloured illustration in the *Esso Annual Review* for 1962, published earlier this year. The proposed Midland pipe-line system, much of the plan still awaiting approval by the Minister of Power, embraces: (*a*) a direct line from Fawley Refinery, Southampton Water, to Severnside, Gloucestershire, carrying ethylene to the Imperial Chemical Industries works there; (*b*) the construction of the Fawley–West London pipe-line started in mid-May 1962, involving (*c*) a formidable engineering problem of laying lines from the refinery across Southampton Water, and (*d*) the proposed Midland system itself. Regarding (*a*), this was completed and has been operating satisfactorily since May 1962. The Fawley–West London leg (*b*) involves the under-water line in Southampton Water to feed to a new distribution plant under construction near Staines, Middlesex, and a third line laid simultaneously in the same trench to carry petroleum gas to the North Thames Gas Board's works at Southall, both nearing completion. Closely linked with this pipe-line scheme is the dredging of Nab Shoal approach to Spithead, also dredging by the Southampton Harbour Board on behalf of Esso of the main channel in Southampton Water, enabling the largest tankers in the Company's service to berth at Fawley jetty fully laden.