has now commenced. This building, which had recently become extremely dilapidated, was erected as a temporary structure for the International Exhibition of 1862, and continued to be used thereafter by the Science Museum for exhibition purposes until the beginning of the War in 1939. For many years these galleries have been scheduled for destruction, and owing to their susceptibility to fire and bomb damage were a source of considerable anxiety during the War. The main portion of this old building is now being demolished to make room for a new centre block for the Science Museum, on the roof of which a planetarium is to be erected. It is anticipated that the ground floor and basement of this new building will be available in time to accommodate the science and technology portion of the Festival of Britain Exhibition in 1951. After this, work on the building will be continued and the building when completed will form the centre block of the Science Museum, with four floors of exhibition galleries. Arrangements for the occupation of this portion of the Science Museum are well under way, and it is anticipated that long before this additional accommodation becomes available, detailed arrangements for the display of specially appropriate and attractive exhibits will have been completed.

Scientific Instruments of George III

WHILE he was still Prince of Wales, the future King George III showed much interest in mechanics, optics, astronomy and scientific experiments of all kinds. Thus encouraged, the leading instrument makers of the second half of the eighteenth century constructed many models and apparatus for the instruction of the Prince. As might be expected, these models illustrate the craftsmanship of the period, and collectively they convey a remarkably clear impression of the general field of scientific study and experiment at that time. Fortunately, the instruments were preserved as a collection, and for many years they were kept at Kew Observatory. They were used again for instructing the many children of George III, and in 1841 they were presented to King's College, London. The collection was loaned to the Science Museum in 1926, but since 1928 it has been in store on account of the lack of space. It has now been placed on exhibition again and may be seen, until the end of September, at the Science Museum, South Kensington, London, S.W.7. Historically, the exhibition is of interest, as it covers an important era in scientific development—an era which witnessed the growth of modern physics and chemistry from the 'black magic' and haphazard alchemy of the Middle Ages, the development of such instruments as the thermometer, and great advances in the study of electricity. Science was becoming popular, but at the same time the foundations were being laid for progress on logical lines of experimental and theoretical philosophy. The course of instruction and the experiments performed tended to follow closely the lines laid down half a century earlier by the Dutch philosopher 'sGravesande, himself a disciple of Sir Isaac Newton, and one of the gems of the present exhibition is the 'Philosophical Table', which is similar to that designed by 'sGravesande. In the parlance of this more vulgar age, a 'philosophical table' is a 'laboratory bench'. Other items worthy of special note are the vacuum pumps made by George Adams and two fine microscopes constructed about 1750.

Commission on South African Museums

LAST year, in *Nature* of November 27, p. 861, it was reported that the Government of the Union of South Africa had set up a Commission to inquire into the financial position of certain State-aided institutions which, it was then understood, included certain museums, art galleries and zoological gardens. An announcement in the *Government Gazette* (*Pretoria*) for March 4 of this year extends the field of inquiry, and lists the institutions concerned, as follows: the South African Museum, Cape Town; the Transvaal Museum, Pretoria; the Natal Museum, Pietermaritzburg; the Orange Free State Museum and Monument Museum, Bloemfontein; the Voortrekker Museum, Pietermaritzburg; the South African War Museum, Johannesburg; the South African National Art Gallery, Cape Town; the Michaelis Collection, Cape Town; the National Zoological Gardens, Pretoria; and the National Botanical Gardens, Kirstenbosch.

The inquiry now covers not only the financial aspects of these institutions, but also their organisation and activity. The Commission is directed to make investigations and recommendations regarding the co-ordination of the research carried out by each institution; the possibility of co-operation between the named institutions, universities and other institutions towards a greater economy and efficiency in the preparation of material for exhibition and educational purposes; the advisability of forming a national board of trustees, or similar organisation, for the co-ordination of the work of the named institutions; the advisability of co-ordinating the research and education functions of the institutions and certain others not State-supported; the advisability of all or some of the named institutions becoming full State institutions; the incorporation of war museums in other museums; and the establishment of a science museum in Johannesburg. If the Commission finds that the last-mentioned is desirable, it is asked to make recommendations for its organisation and control. For the purpose of the inquiry outlined above, the Commission is given full authority to consult any person and Government book, record, etc. The wide scope of the inquiry and its importance demonstrate the formidability of the Commission's task, and it is indicative of a strong Government interest which will ultimately not only strengthen the efficiency of the Union's museum services, but will also point the way to even further developments.

Survey of India: Annual Report

THE Survey of India has issued a Civil Activities Report covering the period April 1, 1945–March 31, 1946, which replaces the detailed General and Geodetic Reports which have been in abeyance since 1939 but are to be introduced for the year 1946–47. Much of the work of the Survey during the year was directed towards the furtherance of a number of long-term projects, such as the Kosi, Mahanadi and Tista irrigation schemes. For these schemes somewhat rigid priority assessments had to be made owing to the shortage of men and instruments, and new and cheaper survey expedients were adopted to provide preliminary information. Even so, the routine topographical programme received scant attention. With the widespread resumption of civil surveys, the concentration of resources in Dehra Dun has been reversed, and the Eastern Circle controlling work in Assam, Bengal, Bihar and Orissa has been

re-established in Shillong. The Southern Circle has been re-created; but map publication is still largely concentrated in Dehra Dun, where also the projects officer is located. No new or revision topographical surveys or forest surveys were carried out during the year; but two settlement surveys were undertaken in the hilly districts of Kulu and Almora. Considerable progress has been made in replenishing stocks of quarter-inch maps corrected up to date; but for one-inch maps the present policy is to reprint the maps uncorrected pending the opportunity for surveying the necessary corrections. The series comprises 4,100 sheets, and in issuing corrected editions a start will be made with the most developed regions.

War experience as well as post-war activities have shown the need for a strong scientific body largely free from administrative responsibilities to enable the Survey of India to keep abreast of scientific thought and developments. The proposed Survey Research Institute, replacing the War Survey Research Institute, when constituted, will carry out the scientific functions of the Survey, and will also collaborate with the National Physical Laboratory, particularly in respect of standards of length and time. The Institute will be staffed and organised for work on measurements of length; standardization of measuring tapes, etc.; astronomical work as applied to latitude, longitude and time; tidal work; and magnetic observations. During the year the War Survey Research Institute carried out further investigations on the improvement of base-measurement apparatus and devised new methods of rapid fixation of position from stellar observations.

Linen Research Association: Report for 1948

THE Linen Research Association, which is at Lambeg, Co. Antrim, has recently issued its annual report for the year ended September 30, 1948. The report records the opening of the new buildings in June by the installation of plant and equipment in the new technical shed for bleaching, dyeing and finishing is now almost complete. Delivery of machinery for the weaving section has also begun; but difficulties in recruiting well-qualified scientific staff have continued, although the accommodation for the increased staff planned in 1945 is now available. In view of the fall in home flax production, it is considered essential to continue research on flax production and to make another serious attempt to increase the yield of flax obtained from scutching. The total number of members is now 280, and the report includes lists of both members and staff and of the membership of committees. Research work carried out during the year has included a continued study of the effect of varying the retting process on the yield and quality of fibre produced from different types of straw, and also a study of the prevention of deterioration of the retted straw during drying. An investigation on a standard turbine scutching-machine has shown that low humidity has little effect on yield provided the straw contains about 14 per cent of moisture, but it greatly reduces the yield if the straw is dry; while at 85–90 per cent relative humidity in the turbine, dry straw can be scutched with a yield only slightly lower than that with properly conditioned straw. The investigation for the Ministry of Supply on the relation between fibre properties and yarn quality has been completed, and an investigation of 'dropped ends' has been started to determine the factors which limit the rate of production and the efficiency of spinning frames. Weaving tests have continued on a variety of yarns in automatic looms of the shuttle-change and pin-change types. Work on cloth bleaching has aimed at modifying existing processes to whiten fabrics with no degradation of the cellulose, and to secure the maximum durability; while work on dyeing has led to an improved method of securing penetration of vat dyes in linen fabrics.

Analysis of Management

IN his paper, "The Nature of Management", based on an address to the London and District Society of Chartered Accountants, and now issued as "Occasional Papers No. 1" by the British Institute of Management, Sir Charles Renold insists that management is directed to action and that the action is at second-hand: management is concerned with guiding the actions of people other than the planners or guiders. Accordingly he regards management as fundamentally the process of getting things done through the agency of a community, and the functions of management as the handling of a community with the view of its fulfilling the purposes for which it exists. A large part of those functions is, in fact, concerned with the well-being of the team or community, and, in pursuing that well-being, the particular purpose of the community may be only of very indirect consideration. Sir Charles examines in some detail the requirements of community well-being so far as they are yet understood, emphasizing the importance not only of the structure or organisation of the community and procedures but also of their acceptance by the individuals forming the community. Contentment will not be secured unless there is confidence that rules and discipline are administered fairly, and the processes of using the team or community to achieve its purposes really turns on devising instructions appropriate to the situation. Planning he regards as a group of processes providing the raw material from which operative instructions are fashioned, and control as seeing how the plans are working out with the view either of modifying them or of improving the response of the community when necessary. Accountancy is one of the indispensable techniques of management; but he points out that every official in the course of his executive duties has to make decisions which are of the nature of policy, and the readiness to accept responsibility for making such decisions and the ability to make wise ones are as important elements in the qualifications of an official as is loyal compliance with orders. The statement that policy-making is the business of the board of directors and execution that of the management should not be accepted uncritically; and Sir Charles distinguishes policy-making as the establishment (not necessarily the origination) of an overall pattern of rules and principles from the development of these rules and principles into greater detail, and execution as their application to particular situations.

Problems in Astronomy

THE Cawthron Lecture for 1947, with the title of "Problems in Astronomy, Solved and Unsolved", was delivered by F. G. Gibbs, curator of the Atkinson Observatory, Nelson, N.Z., and gives a very useful survey of the progress of astronomy during the last two decades. Some space is devoted to an examination of the theories of the source of stellar energy, and a short description is given of Bethe's carbon-cycle theory which is now generally accepted. A consideration of variable stars leads to the past