

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 1948, 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. 12" 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