

and June 30, 1952, together with the direction of initial earthquake movement. A dotted line on each map is drawn perpendicular to the direction in which the seismograph is orientated, and two full lines are also drawn on each diagram perpendicular to each other through the station to show the boundaries between the regions of compression and dilatation as indicated by the initial movement on the seismogram. The general fault trend is parallel to one of these latter two lines. Geological evidence favours a north-east strike. According to this evidence, the western side of the faults must in general move north-eastwards relative to the eastern side. It is now proposed to examine a considerably larger series of records and to attempt to distinguish the finer details of the regional pattern.

Extragalactic Studies in the Southern Hemisphere

In an article on "Extragalactic Studies in the Southern Hemisphere" (*Occasional Notes Roy. Astro. Soc.*, No. 18; 1956), G. de Vaucouleurs refers at the beginning to the unbalance between our knowledge of the northern and of the southern sky, which is more serious in the field of extragalactic studies than in any other branch of astronomy. He then continues with a short history of extragalactic studies in the southern hemisphere, starting with Halley's expedition to St. Helena in 1679, though none of Halley's objects was actually extragalactic, and the credit for first observing these must be given to N. L. de La Caille during his expedition to the Cape in 1751-52. An account follows of J. Herschel's first systematic survey and of subsequent work by others, early photographic exploration, and reflector surveys of bright galaxies—with two tables, one giving details regarding the twelve brightest galaxies irrespective of hemisphere, and the other supplying similar details of twenty bright southern galaxies lying in declination between $-11^{\circ} 21'$ and $-66^{\circ} 40'$. As the Harvard "Survey of Bright Galaxies" is still the only source of magnitude for southern objects, there is urgent need for a photometric survey by modern photographic or photoelectric methods of the Shapley-Ames galaxies in the south to supplement the corresponding work by Stebbins and Whitford and others for northern objects. It is planned to obtain such observations at Mount Stromlo for the objects south of dec. -35° , already covered by the programme of direct photography with the Reynolds reflector. There is also need for further work on the luminosity distribution in the largest southern galaxies; and as the plates of the Reynolds survey are photometrically standardized, they provide ample material for such studies, especially for the larger galaxies. Under the heading of isophotometry, it is pointed out in the article that, while a beginning in this work was recently made in the northern hemisphere with the help of automatic recording isophotometers, there is none in service in the southern hemisphere. The latest model of Siedentopf's iris diaphragm photometer with 'magic eye' indicator has been found to be well adapted to the nearly continuous tracing of isophotes on photographs of nebulae by manual operation; but it gives a satisfactory sensitivity only in the bright central regions of the nebulae where the gradient of the photographic density is large and the effect of the granulation of the image is small compared with the variations due to nebular details. For this and other reasons, ordinary recordings or discrete readings are necessary.

Higher Technological Education

In an address on higher technological education given to the North of England Education Conference at Liverpool on January 3, Mr. A. A. Part, head of the Further Education Branch, Ministry of Education, said that State scholarship figures showed that, so far as men are concerned, science is now getting a reasonable proportion of the best brains and that the position in engineering is not discouraging, but there is much to be done before the schools could supply enough good students to enable the universities and technical colleges to meet their 1970 commitments in science and engineering. The technical college part-time course leading typically to the Ordinary and Higher National Certificates, which at present accounts for about half the annual output of 5,000 engineers, was likely even in 1970 to supply a significant proportion of technologists; but it is by the full-time or sandwich course at a technical college that the White Paper policy will stand or fall. At least 5,000 technologists should come by this route by 1970, in place of less than 1,000 at present. The designation of Chelsea Polytechnic and the Loughborough College of Technology brings the number of colleges of advanced technology to five, and since the White Paper was published a 75 per cent grant has been promised to the Faculty of Engineering, Bristol. As regards the building programme, £17 million worth is now under construction and programmes for the next three years totalling more than £40 million have been approved. The Preston Education Authority and the governors of the Harris Institute have agreed that the Development Group of the Ministry should design, in co-operation with them, the £500,000 extensions to the Institute which are due to be started early in 1958. The planning work is now in hand and the benefit of any researches or developments emerging from the project would be made generally available. Mr. Part believed that the technical colleges would provide more opportunities for educational pioneering than any other part of the educational system, but he stressed the need for closer co-operation with industry.

Report of the National Central Library

THE fortieth annual report of the Executive Committee of the National Central Library, covering the year ended February 29, 1956, records a marked decrease both in applications and in issues of books and periodicals. Applications totalled 92,688, compared with 97,269 in 1954-55, and of these 70.67 per cent were dealt with successfully. Issues of separate volumes from or through the Library totalled 93,708, compared with 100,159 in 1954-55, and of these 16,890 were to university libraries, 15,723 to county libraries, 14,264 to adult classes, 10,382 to special outlier libraries, 5,275 to government departments, 4,476 to industrial and research organizations and 3,305 to overseas libraries. There are now 255 outlier libraries and the number of volumes lent by these libraries also fell from 21,256 in 1954-55 to 18,845. University libraries lent 26,466 books compared with 25,291 in the previous year and received 15,091 books from or through the agency of the Library, compared with 17,434 in 1954-55. The number of international loans continued to increase: 2,650 volumes were lent abroad by British libraries and 1,468 were borrowed on behalf of British libraries compared with 2,624 and 1,270, respectively, in the previous year, Western Germany remaining the