THE YERKES OBSERVATORY.—From the University of Chicago we have received a brochure in which Prof. E. B. Frost gives a brief, detailed account of the establishment, equipment, and work of the Yerkes Observatory. Fourteen excellent reproductions of photographs of instruments, spectroheliograms, nebulæ, &c., illustrate the twenty-four pages of the booklet, and give the reader a very fair idea of the enormous activities and possibilities of the institution. One point which attracts our attention is Prof. Frost's emphasis of the necessity for having, in a modern astronomical observatory, well-equipped workshops wherein repairs and modifications of existing instruments may be executed, and new instruments constructed.

PROMINENCE OBSERVATIONS.—No. 6, vol. xxxviii., of the *Memorie della Società degli Spettroscopisti Italiani* contains Prof. Ricco's periodical summary of the Catania prominence observations, dealing with the first six months of 1908. Prominences were observed on ninety-three days during the six months, and 170 in the northern, and 247 in the southern, hemisphere were measured. The mean latitude for the two hemispheres was 27·5°, but, dividing the latitude, N. and S., into 10° steps, there were two maxima (lat. 10°–20° and 50°–60°) in the northern hemisphere and only one (20°–30°) in the southern.

SCIENTIFIC WORK IN INDIA.

THE annual report of the Board of Scientific Advice for India for the year 1907–8 has lately been issued by the Superintendent of Government Printing, Calcutta. The Board was constituted in 1902, and consisted originally of the heads of the meteorological, geological, botanical, forest, survey, agricultural, and veterinary departments, but the Government of India invites from time to time to serve upon it other men of science in the service of the imperial and provincial Governments. The Board is a central authority for the coordination of official scientific inquiry, intended to ensure that the work of research is distributed to the best advantage and the prevention of useless duplication of inquiries and lack of interdepartmental cooperation. The advice of the Board is given with the view of aiding the Government of India in prosecuting practical research into questions of economic and applied science on the solution of which the progressive prosperity of the country depends. The Board discusses annually the proposals of the head of each of the great departments in regard to the programme of investigation in his department, and submits each year a general programme of research to the Government. Its reports and programmes are communicated through the Secretary of State for India to the Royal Society, which has appointed an advisory committee to consider them.

The present report opens with a summary of the proceedings at the three meetings held during 1908, two at Calcutta and one at Simla. As indicative of the scope of the labours of the Board, some of the subjects discussed at the first meeting may be mentioned. The Board had under consideration the remarks of the Royal Society committee on the Board's report for 1905–6 and its programme for 1907–8. The subjects discussed included, among many others, the preparation of a hand-list of the species of the flora of India, economic and industrial chemistry, and the limits of the imperial mycologist's research work, the relations of the zoological section of the Indian Museum to other departments engaged in zoological research, and proposals for a special report on the progress of the Geological Survey.

The conclusions arrived at by the Board in these matters were as follows:—that, as regards the preparation of a hand-list of the flora of India, although its importance was recognised, lack of staff and the existence of more immediately necessary work precluded its preparation forthwith; that the consideration of economic and industrial chemistry and the work of the imperial mycologist should await the results of the discussion of the subjects by the Board of Agriculture for India; that reference should be made, so far as possible, to the zoological section of the Indian Museum by other departments engaged in zoological research; and that no officer was available for the increase of work that the preparation of a special report on the progress of the Geological Survey of India would necessitate.

Very full reports upon the work of the various scientific departments during the year 1907–8 then follow. Dr. J. W. Leather and Mr. D. Hooper deal with the work on industrial and agricultural chemistry, and Mr. Puran Singh with forest chemistry; Dr. G. T. Walker, F.R.S., with solar physics, meteorology, and terrestrial magnetism; Sir Thomas H. Holland, F.R.S., with geology; Colonel S. G. Burrard, F.R.S., with geodosy and geography; Messrs. W. W. Smith, A. Howard, E. J. Butler, and R. S. Hole with various branches of botany; Mr. A. M. F. Caccia and A. J. Gibson with forestry; Dr. N. Annandale and Messrs. H. Maxwell-Lefroy and E. P. Stebbing with zoological subjects; and Colonel H. T. Pease with veterinary science.

The programmes of work of the various scientific departments for the year 1908–9, as approved by the Board, constitute the next section of the volume, which concludes with an appendix by Dr. W. R. Dunstan, F.R.S., director of the Imperial Institute, describing the economic investigations conducted for India at the Imperial Institute during the year ended September 30, 1908.

The detailed programmes of work teem with particulars of investigations of great interest, but since the bare enumeration of the researches to be undertaken runs to twenty-seven large pages, it is possible here only to give an example or two. In meteorological work, a special endeavour is being made this year to secure meteorograph records of temperature and humidity up to great heights by means of small balloons. At four nearly equidistant periods between April and December batches of registering balloons have been, and are to be, liberated at some place in the west of the Punjab, and organised efforts made to recover as many as possible on descent. Each batch was to comprise, perhaps, ten complete units, the adjustment and liberation of which takes between a week and ten days. It was hoped to reach heights of 25,000 feet in the earlier experiments, and later in the year it is hoped to increase the heights at which the balloons are caused to descend until 50,000 feet has been reached. It is important to reach this height in order to see whether the isothermal zone, which has been almost invariably found at or near that level by sounding balloons in Europe, is to be encountered over India.

The new work to be undertaken by the Geological Survey provides another typical instance of the activity of scientific workers in India. The mapping of previously unsurveyed areas in the Amherst district of Lower Burma is being proceeded with, the geological map of the Raniganj coalfield is being revised in conjunction with a committee appointed by the Mining and Geological Institute of India, and the following pieces of work are in hand:—a survey of the ossiferous deposits of the Siwaliks and the Salt Range; an examination of copper-ore and associated sulphide-ore deposits in Sikkim; a survey of certain glaciers in Sikkim; and a study of the palæontology of (*a*) the Cretaceous rocks of Tibet, (*b*) the fossil fishes of the East Coast Gondwanas.

POSITION FINDING WITHOUT AN HORIZON.

WHEN about three years ago the first Gordon-Bennett balloon race was held, and several of the aëronauts descended precipitately on the north coast of France, believing they were approaching the Bay of Biscay, it seemed to me worth while to consider the possibility of designing an instrument by the aid of which observations could be taken so as to obtain even a rough idea of position. For this purpose the observation of the altitude and azimuth at any moment of a single star or of the sun will be sufficient to establish the locality, or the altitudes of two stars not in the same vertical plane with the observer will do as well.

If the observation is such that the error is as great as the diameter of the sun or moon, the resulting uncertainty of position will be a little more than thirty miles, and so in proportion. The observer will be, of course, on a circle on the earth described round the point where the star is in the zenith, the radius of which in nautical miles is