THE ROYAL OBSERVATORY, GREENWICH.

THE annual visitation by the Board of Visitors of the Royal Observatory, Greenwich, was held on Saturday last, June 5, when, in accordance with the usual custom, the Astronomer Royal presented his annual report showing the work performed during the twelve months ended May 10.

The transit and circle observations, 10,142 and 10,034 respectively, included the sun, moon, planets, and fundamental stars, and observations of stars brighter than magnitude 9·0 in the zone 24° to 32° N. for the Oxford astrographic work. From the observations made in 1907, the value of the co-latitude, using Pulkowa refractions, was found to be 38° 31′ 21·71″.

From the solar observations of 1907, the tabular value for the obliquity of the ecliptic requires a correction of −0·01″, whilst the discordance between summer solstice and winter solstice observations, +0·20″, indicates that the mean of the observed distances from the pole to the ecliptic is apparently too small by 0·10″. The 1908 values of the diurnal changes of level and nadir are sensibly smaller than the mean values for the period 1897–1905.

The mean error of the moon's tabular place, deduced from ninety-six observations made during 1907, is −0·38s. in R.A. and −0·37″ in N.P.D., while from 105 observations the mean error in R.A., for 1908, is −0·41s.

The Second Nine-year Catalogue (1900), completed in 1905, will shortly be ready for distribution.

The altazimuth was employed as in previous years, and a comparison of the results from the two instruments, altazimuth and transit circle, shows that the lunar observations agree very satisfactorily.

A ten-year catalogue of the stars observed with the altazimuth in the meridian, during the period 1899–1908, is to be prepared, and will contain about 1500 stars of the following classes:—(1) stars in Newcomb's Fundamental Catalogue; (2) stars used for the heliometer observations of the major planets at the Cape; (3) Eros reference stars, 1900–1; (4) moon culminators and other selected stars; the star-places will be reduced to the equinox of 1900·0.

With the reflex zenith tube 1040 double and seventeen single observations were obtained during the year, eighty-eight different stars being observed. An arrangement for controlling the field illumination of this instrument by tilting the annular reflector proved unsatisfactory, and the variation of brightness is now controlled by a rheostat.

With the 28-inch refractor, observations of double stars were made from a working catalogue including all known double stars showing relative motion, Hough stars not previously observed at Greenwich, and a number of pairs, having separations of less than 2″, selected from Hussey's and Aitken's catalogues; among the stars observed were κ Pegasi, δ Equulei, 70 Ophiuchi, and Procyon. Bifilar and double-image micrometer measures of the polar and equatorial diameters of Jupiter were also made with the 28-inch refractor, some measures being made by Mr. Bowyer, before sunset, to ascertain the effects of irradiation. The new dusky ring of Saturn, discovered at the Geneva Observatory, was examined on thirteen nights.

Nearly 300 photographs were taken with the 30-inch reflector, including 23 of Phœbe, 20, 8, and 15 of J VI., J VII., and J VIII. respectively, 32 of comet 1908c for position, and 139, on thirty-seven nights, for the study of the rapid changes in its tail and form. Twenty long exposures were made in the search for Halley's comet, but without success. Whilst comet 1908c was under observation it was found that the sensitiveness of the plates was lowered by the absorption of moisture during the exposures, and the difficulty was overcome by placing an electric heater, designed by Mr. Davidson, in the plate-holder behind the plate.

In astrographic work, the photographic division made about 12,000 prints, reproducing, on double scale, 202 plates. Only 125 plates now remain to be reproduced ere the Greenwich contribution of 1149 plates is complete, and it is hoped that the work will be completed this year.

A re-computation of the perturbations of Halley's comet, by Pontécoulant's method, gave April 13, instead of April 8, 1910, as the probable date of perihelion passage, whilst the method of mechanical quadratures gave April 16; the identifications of the comet have now been carried back to 240 B.C., beyond which date no satisfactory records exist.

The observed magnetic elements for 1908 were:—

Mean declination	15° 53·5′ W.
Mean horizontal force	4·0184 (in British units) 1·8528 (in metric units)
Mean dip (with 3-in. needles) ...	66° 56′ 17″

and there were two days of great, and six of lesser, magnetic disturbance.

In the testing division both chronometers and chronometer watches showed an improvement in their performances over those of the previous year.

The time-signal report shows satisfactory performance, but the signals from January 1 to January 7 were to some extent erroneous, being affected by an uncertain error of the Greenwich clock.

In concluding his report, Sir William Christie outlines the growth of the observatory's work since 1836. For many years, it is stated, the work of the observatory has been seriously hampered by the inadequacy of the permanent staff.

THE ASSOCIATION OF TEACHERS IN TECHNICAL INSTITUTIONS.

THE third annual conference of the Association of Teachers in Technical Institutions, held at Liverpool during Whitsuntide, was highly successful. On the morning of Monday, May 31, after addresses of welcome from representatives of the Liverpool Education Committee, the president, Mr. J. Wilson, delivered the presidential address. In the course of the address he stated that one of the objects of the association was to further the progress of technical education by breaking down the barriers separating technical institution teachers from those engaged in primary, secondary, and university work.

After discussing certain matters of professional interest, such as the proposed minimum scale of salaries, the conditions of service of part-time teachers, superannuation of teachers, and the representation of technical institution teachers upon such bodies as local education committees, the consultative committee of the Board of Education, and the proposed Teachers' Registration Council, Mr. Wilson said members may congratulate themselves that, upon the whole, an increasing amount of attention is being directed to technical education. Employers are recognising its value more and more, and sociologists of all phases of political thought are increasingly insisting upon the vital importance of technical education to the community. The higher ranks in the commercial world recognise more clearly than their predecessors the necessity for technical education. The main obstacle lies in the opposition of the foremen, the Trades Unions, and the apathy of the workers themselves during the critical period from fourteen to twenty-one years of age.

The work done inside the technical institutions has been characterised of recent years by a steady improvement, both in quantity and quality. The calibre of the students is slowly rising, and systematic courses extending over a period of years are being taken by many students, instead of isolated subjects as in the past. The character of the staff, equipment, and courses of instruction (both day and evening) in some of the technical schools places them now on an equal educational level with many university colleges.

After discussing the educational reforms recommended in the Majority and Minority Reports of the Poor Law Commission, Mr. Wilson pointed out that, partly as a result of the Act of 1902, the country is now covered with a network of more or less efficient secondary schools, generally of one type, that is, the old-fashioned "grammar-school" type. We need two distinct groups of secondary schools, one preparing for the universities or the learned professions, and the other preparing the boys (and girls) for commerce, scientific and technical industries, trades and crafts, while continuing the general education of the