Bishop's Observatory, Regents Park

THE OBSERVATORY OF GEORGE BISHOP, ESQ., F.R.S.; F.R.A.S. AND TREASURER ; ETC., ETC., ETC.

This observatory, though of more recent date than that of Sir James South, has attained in a short space of time an enviable distinction for its proprietor and or his talented coadjutor, Mr. Hind, by the series of brilliant discoveries hat have been made, and for the really valuable and laborious, yet less known, works which have been performed at it. A brief account of its erection and a lescription of the Equatorial chiefly used in it, will properly precede our ccount of the discoveries.

It was erected in the year 1837, in the grounds to the south-west of Mr. Bishop's residence, South Villa, in the Inner Circle, Regent's Park, near the toyal Botanic Society's Gardens.

663

682

LONDON.

The principal instrument is an equatorial telescope, equipped on the plan known as the English mounting ; the polar axis is 13 ft. 8 in. long and 91 in. broad at the widest part near the centre of its length, tapering off to about 71 in. at the extremities. The solar focus of the telescope is 10 ft. 10 in., and the clear aper-ture of the object-glass 7 in. The instrument was wholly constructed by the present G. Dollond, Esq., of St. Paul's Church Yard. The circles are 3 ft. in diameter ; the hour-circle reads to single seconds of time by verniers, and the declination-circle to 10" of arc. The instrument is driven by clock-work motion, this part of the machinery in particular being very elaborately worked.

The stone pier supporting the upper end of the polar axis of the equatorial weighs \$1 tons, and that at the lower end 21 tons. The clock-movement is fixed on a stone pedestal perfectly isolated from the floor, as is also the sidereal clock.

The micrometers consist of-

A position-wire micrometer.
A double-refracting crystal micrometer.

3. A divided eye-glass micrometer.

4. An annular micrometer.

The telescope is provided with magnifying powers up to 1200. * Coronse was separated in June last with a power of 800, which may give an idea of the optical and defining capacity of the instrument.

The dome is of wood, with stout iron braces, and is not exactly hemispherical, but tapers upwards to a point (for the sake of ornament). It revolves on wheels working in a live-curb, and its performance is excellent. It is impelled by a lever, which acts on iron arms placed at equal distances (about 2 ft.) round the inner border. The machinery was finally adjusted by Mr. Penn, of Green-When in good order it may be turned more than half-round at one wich. effort.

The observatory consists of a circular equatorial room surmounted by the dome, and an arm extending westward, which forms the anti-room and contains the altitude and azimuth instrument now used for keeping the time, various micrometers, a sidereal clock, a chronometer, and general furniture. Gas illumination is used in the observatory for the transit-observations.

A mahogany revolving chair is fixed in the equatorial room, which is very convenient for observing objects near the zenith, or for delicate observations in general. This chair gained the medal of the Society of Arts and the money prize in addition.

The longitude of the observatory is 0m. 37s. 1 W.; the latitude, 51° 31' 29".8 N.

In the year 1839 Mr. Bishop was fortunate in securing the services of the Rev. W. R. Dawes, a gentleman previously well known for his observations of double stars made at an observatory of his own, at Ormskirk.

During the attachment of Mr. Dawes to the observatory which continued till the beginning of the year 1844, the observations consisted principally of double-star measurements. The results have not yet been published, but the volume containing them has nearly passed through the press, and its publication may be expected almost immediately.

In the year 1844 Mr. Dawes resigned, and was succeeded by J. R. Hind, Esq., then an assistant in the magnetical department of the Royal Observatory, Greenwich, where he had already distinguished himself by the zeal and ability with which, in addition to his ordinary duties, which were severe, he devoted himself to the labour of observing comets and calculating the elements of their orbits.

Almost from the time of Mr. Hind's appointment the observations took that character for which his talents fitted him, viz., the search of the heavens for new comets and planets, and the scrutiny of such stars as seemed to offer any physical peculiarities of colour, variability, &c.

Bishop's Observatory, Regents Park

THE OBSERVATORY OF MR. W. SIMMS.

Mr. Bishop and Mr. Hind were almost immediately rewarded by discoveries of comets. Three of these bodies were discovered in the years 1846 and 1847, of which the latter became visible at noonday, when near its perihelion, and for which the King of Denmark's gold medal was awarded.

The other branch of research was still more successful, viz., the search after small planets lying between Mars and Jupiter. It may be desirable to say a few words in this place on the nature of the search that must be instituted for these bodies, so as to offer any reasonable probability of ultimate success. They are in general very faint objects, varying from about the 8th to the 11th magnitude, and differing by no physical characteristic from the small stars near them. There are then only two means of detecting them, viz., 1st. By observing previously all stars that lie within those limits of the heavens within which they may be reasonably expected, that is, by observing and mapping all the stars for several degrees on each side of the ecliptic; or, 2ndly, by observing on several successive nights all the stars down to the 11th magnitude in certain spaces of the heavens, pricking off immediately their places on maps previously prepared, and then, after re-observation of them, noting whether any one of them seems to have had any motion in the interval, this being the only planetary characteristic observable. The former of these methods was determined on by Mr. Bishop, who undertook, in conjunction with Mr. Hind, the formation of ecliptic charts of stars of all magnitudes down to the 11th. This great and important work has been steadily prosecuted ever since; only one chart has, however, yet been published, owing to the severe illness of Mr. Hind, at one period of the work—an illness occasioned chiefly by his unremitting labours.

In the course of these researches three small planets have been discovered, viz, Iris, on August 13, 1847; Flora, on October 18, 1847; and Victoria, on September 13, 1850. For the discoveries of Iris and Flora a prize on the Lalande foundation was received from the Academy of Sciences, at Paris, in April, 1850. It will be readily seen from the preceding brief explanation that such discoveries are not accidental, but are the result of a sagacious plan of observation carried out with most severe labour and unwearied patience.

Amongst Mr. Hind's star discoveries may be mentioned a star in Ophiuchus, of very great variability, which had never been previously observed. This star after its detection became of such brightness that it was visible with the naked eye, and it has since faded away and become so faint that the writer of the present article remembers to have had great difficulty in observing it recently with an instrument of considerable optical power.

Mr. Hind has paid great attention to the subject of variable stars, a very necessary branch of sidereal astronomy at the present time, and has come to the following remarkable conclusion concerning them, that a very great proportion of them are red or orange when about their maximum, and that many have a clouded nebulous appearance when at their minimum of brightness. These facts have, it is believed, never been observed before, and are well worth confirming.

In closing our account of this observatory, we are sure the intelligent visitor will cordially join us in wishing health and long life to Mr. Bishop, its munificent founder and proprietor, and to Mr. Hind, his talented and zealous coadjutor.



Source: Weale 1854, 681-3