Obituaries.

R. T. A. Innes.

Very unexpectedly and with much regret we have to record the death of Dr. Innes that happened with painful suddenness on Monday March 13 last. He was present at the gathering of astronomers who met to do honour to Sir Frank and Lady Dyson on the Friday preceding, apparently in good health and in the good spirits that he retained until a few minutes before his end. Regret arises, if for no other reason, because we lose an attendant at our meetings, who contributed genially, humorously and instructively to the proceedings.

Robert Thorburn Ayton Innes was born at Edinburgh on November 10, 1861, and went to school in Dublin, but is more associated with the southern hemisphere than with the northern for almost all his astronomical work has been done at the Royal Observatory, Cape of Good Hope, and the Observatory of the Union of South Africa at Johannesburg, from the Directorship of which he retired at the end of the year 1927. He joined the Royal Astronomical Society at the age of 17 on 1879 January 10 when he was living near London, but early contributions to the Society dealing with orbital computations of a rather advanced nature were addressed from Sydney, New South Wales. The further circumstances of his life are told briefly in a paragraph in Sir David Gill's History of the Cape Observatory that we take leave to reproduce:—

> Mr. Innes before he joined the staff of the Cape Observatory was a merchant in Sydney, Australia, but was well known to astronomers as an amateur devoted to the discovery and observation of double stars. He wrote to Gill offering his services as an assistant at the Cape Observatory; but there was no vacancy in that capacity, and Gill could only offer him a temporary post as secretary, librarian, and accountant.* That post was afterwards put on the establishment under the title of clerical assistant. Mr. Innes performed all the duties of that office in the most satisfactory manner, but devoted every moment of his spare time, day and night, to pure astronomical work, most of which is mentioned in the pages of this history. On the conclusion of the Boer War it was determined to found an observatory at Johannesburg, which, in the first place at least, was to be devoted to meteorology; but it necessarily included a time department which in energetic hands could be developed into a regular astronomical observatory. With this end in view Gill recommended the appointment of Mr. Innes to the post (of Director), and he has filled it with marked success and distinction since 1903 March 31.

It may be mentioned that the acceptance of the post at the Cape Observatory involved a considerable pecuniary sacrifice to Innes, but the choice was his own. That he retained interest

* He joined the staff of the Cape Observatory on 1896 January 1.

in mathematical astronomy is shown by papers written quite late in his career, the latest example being an erudite contribution to the Report of the Comet Section published as Part I, Vol. XXX, of our Memoirs in 1932 May, but whilst at Sydney he took up the science on its observational side and a paper read before the New South Wales Branch of the Association in 1895 November, that will be found in Volume 6 of our *Journal*, recounts observations of nebulæ, variable stars and double stars made by him with amateur instruments or with the naked eye, and another in the *Monthly Notices* of 1895 March is made up of a short list of probably new double stars observed with a 6¼-inch telescope lent to him by Mr. Gale of Sydney.

Innes's early work at the Cape Observatory was in connection with the Revision of the Cape Photographic Durchmusterüng, the splendid survey of the southern heavens by Kapteyn that was examined after its first publication for the purpose of detecting variability, duplicity, or proper motion of any of the stars it contained or to reconcile discrepancies with other catalogues. He used the 7-inch equatorial of the Observatory for this work and some variable and double stars were discovered in the course of revision, but his principal double star observing was done with the 18-inch refractor that forms part of the Victoria instrument, and with this he discovered several hundred objects of the kind and made observations numbered by thousands. His Reference Catalogue of Southern double stars published in 1899 as Vol. ii, Part 2, of the Annals of the Cape Observatory at the Cape Observatory double-star results give testimony to the excellence of his work at the Royal Observatory.

Gill was justified in his assumption that Innes would be able to transform the meteorological observatory at Johannesburg into an astronomical one. As a first step in this direction, Gill lent an equatorial stand on which Innes mounted a refracting telescope of 9 inches aperture by Grubb, bought by himself, but the complete instrument was taken over by the Observatory later. The twin telescope with which Mr. Franklin-Adams had photographed the southern sky, and another instrument belonging to that gentleman, were presented to the Union Observatory in 1913. But in the year 1909 Innes had persuaded the authorities to provide him with a large refracting telescope of 26-inches aperture, the building to house which was begun in the year 1911, but owing to difficulty in obtaining the glass discs, the war, and perhaps for other reasons, it was not until 1925 November that the instrument was delivered and erected. A blink-microscope was procured for plate comparison about the year 1912. Photography with the Franklin-Adams instrument appears to have been mainly in the hands of Mr. Wood, his Chief Assistant, but with the 9-inch refractor Mr. Innes continued his observation of double stars, observed the phenomena of Jupiter's satellites, occultations and comets as occasion required, and after the arrival of the blink-microscope used that instrument for the detection of proper motion of stars on plates of the astrographic chart borrowed from Greenwich and else-

where. Beyond the pleasure of doing all this work efficiently Innes was rewarded by "discoveries." In the course of his work on the Durchmusterüng he came upon the star Cordoba Zone 5h. 243 that has a proper motion of 870 seconds a century, the largest then known. In 1917 he found on a Sydney astrographic plate a star of the 13th magnitude about 2 degrees from α Centauri, which proved to be in close agreement with that star both as regards proper motion and parallax, the latter being somewhat greater so that the faint star to which the name Proxima Centauri has been given is the nearest body of the stellar universe known to us except our Sun. Later he found a faint object, its visual magnitude being 12, in R.A. $11^h\ 12^m$, Dec. $-57^\circ{\cdot}2$, generally quoted as Innes's star, which emits only about a ten-thousandth of the light that the Sun does, and at that time it was believed to be the least luminous star known, but may since have lost that distinction. Innes was a man of original and unconventional ideas that he never hesitated to express. He at one time disagreed with the thesis that nebulæ could change into stars, but argued that the process was more likely to be the reverse of this since we had seen it so happen in the case of a Nova. Of late years he has tried to demonstrate the futility of making star-catalogues, since the final result can be so much more easily achieved by the blink-microscope, and some rather daring remarks about the passage of the earth through a comet, and its meteorological effects made at a meeting of the Association will be remembered.

Original views such as these, and his unaffected manner of expressing them made Innes a charming companion in daily life, and as a friend or acquaintance he will be much missed. He leaves a widow and three sons now living in Johannesburg, to whom he was hoping to return shortly, having been on a visit to England during the last six months in connection with a business enterprise. The prefix "Dr." to his name was derived from the Leyden University who awarded him the degree D.Sc. *honoris causa* in 1922.—H. P. H.