

appointed Forbes as the Government representative in the China Straits, and Mr. and Mrs. Forbes arrived at Samarai in June, where they remained until the end of March 1887. Forbes then went to Australia to arrange for another expedition. He left Port Moresby for the interior in October 1887 and again reached the base of the Range, making further geographical and other observations. An account and a map of this unsuccessful attempt to reach the summit of the Owen Stanley Range will be found in the *Scottish Geographical Magazine*, 4, 138, 1888. Sir William Macgregor succeeded in reaching the summit in 1889 and renamed it Mount Victoria; in his account of the expedition he criticised the work of Forbes (*Proc. Roy. Geog. Soc.*, 12, 218; 1898). This led to a reply by Forbes (*loc. cit.*, p. 558), and Coutts Trotter later attempted to reconcile the two accounts (*loc. cit.*, p. 697). Although Forbes visited various parts of New Guinea he did not publish anything about the natives in scientific journals, but he recorded a few notes in his official reports (New Guinea, Further Correspondence, C. 5883, London, 1890).

In 1890, Forbes was appointed director of the Canterbury Museum at Christchurch, New Zealand. During his stay there, he visited the Chatham Islands and made a study of the very interesting extinct birds found in recent deposits in that group. The results of this investigation will be found in a paper published in the *Ibis* for 1893, while his more theoretical views as to the geological history of this island group as deduced by a study of the recent and extinct fauna formed the basis for a paper published in the *Supplementary Papers* of the Royal Geographical Society, for which he received the award of the Gill Memorial.

In 1894, Dr. Forbes was appointed director of the Liverpool Museums, the interests of which he was energetic in promoting, and about this time he made, in company with the late Mr. W. R. Ogilvie-Grant, an expedition to the Island of Socotra, where large collections were made for the British Museum (Natural History) and for the Liverpool Museum; the results of this will be found in the "Natural History of Sokotra and Abd-el-Kuri: a Monograph of the Islands", published in 1903.

Forbes's last expedition was to Peru to investigate the condition of the guano industry and the best means for the conservation of the bird life on which the industry was dependent of the Guano Islands off the coast. This was undertaken on behalf of the Peruvian Government, for which a valuable report was prepared containing a survey of the islands, and suggestions for the most efficient methods of working the deposits.

From the University of Aberdeen, Forbes received an honorary degree of LL.D. He was a fellow of the Royal Geographical Society and of the Zoological Society, as well as of many other learned bodies.

#### DR. R. T. A. INNES

ROBERT THORBURN AYTON INNES was born in Edinburgh and educated in Dublin. In 1879, at the age of seventeen years, he became a fellow of the Royal Astronomical Society. He was married in London and began his career as a double star observer in Sydney, where he soon became of repute among astronomers. Half a dozen years later he deliberately sacrificed his quite considerable material prosperity in order to become temporary clerical assistant to Sir David Gill at the Royal Observatory, Cape of Good Hope, at a salary just one-tenth of his income in New South Wales. No weak, 'Safety First' principle in this sudden plunge but everything he had, wife, family, capital and reputation, risked. In after years it gave Sir David pleasure to record the insatiable appetite of his 'Secretary, Librarian and Accountant' for work, extra work and yet more work.

During these few years Innes used the 18-inch Victoria telescope in an extensive search for double stars, but his main work was in the revision of the Cape Photographic Durchmusterung, in which Gill years earlier had the co-operation of Kapteyn. The importance of the C.P.D. may be judged by the award in 1902 of the gold medal of the Royal Astronomical Society to Kapteyn. In this work and for his observation of variable stars Innes used the 7-inch equatorial by Merz which dated from 1849 and Gill wrote, "This work of Mr. Innes was from first to last a labour of love, carried out by him with conspicuous energy and success." It would be difficult to over-estimate the value of this period of testing when Innes was acquiring the knowledge and experience and habits of methodical industry which procured him in 1903 the unsolicited post of creator of the Transvaal Observatory.

The Boer War emancipated the Dutch of South Africa from the tutelage of President Kruger, and at its conclusion an intellectual awakening demanded the establishment of the Transvaal Observatory, which must surely be regarded as the first fruits of that war. For a time at least, it was intended that this Observatory should be exclusively devoted to meteorology with an indispensable time department. Except as a step-ladder by which to raise himself to higher levels, meteorology, whether theoretical or observational, had no appeal for Innes. "Here," said he, in effect, "is a fine clear sky with steady observational conditions, let me use my telescope without stopping to inquire as to how these conditions arose." His first step upon appointment was the purchase (how, we know not, but probably his family had to endure 'iron rations' for a time) of a 9-inch refractor to be mounted on an equatorial stand borrowed from his benefactor at the Cape. In 1909, after an interval of six years, Innes persuaded the authorities to provide him with funds for a 26-inch refractor—this in itself was a difficult piece of work. It was expected that this worthy instrument would be in use in a couple

or three years at the most but here is the tragedy of the life of Innes. For sixteen years he was fretting and chafing at the delay, for his telescope was not erected complete with the object glass fitted until April 1925, only two years and nine months before his retirement at the age of sixty-six years.

Innes's first communication made to the *Monthly Notices of the Royal Astronomical Society* was to correct a computational slip in Laplace. From Sydney there followed two others on the secular perturbations of the orbit of the earth by Mars and by Venus, and by a third on the methods of Gauss. It was from New South Wales too that he published his first discovery of 26 new double stars using a 6-inch equatorial without circles. This result of thirty hours observation, "will prove what a mine of wealth awaits the diligent double-star observer in the southern hemisphere". Prophetic words, for ultimately his own doubles numbered 1,200. Next at the Cape he observed  $\eta$  Argus and in a few years discovered 285 new doubles and published his catalogue of southern double stars. Besides this work he contributed two papers to the *Monthly Notices* on multiple systems, and a very notable communication on Jacobi's 'Nome' as a means of computing elliptic integrals.

At Johannesburg Innes established his well-known Circulars which contain the records of much of his work—but the *Proceedings of the Royal Society of Edinburgh*, *Astronomische Nachrichten*, and *Astronomical Journal* contain papers of value. His interest in celestial mechanics continued unabated but of necessity other subjects demanded and received due attention—to mention a few: Jupiter's Galilean satellites, galactic co-ordinates, variable rotation of the earth, occultations and their reduction by improved methods, continuation and completion of the work of Franklin-Adams, use of blink microscope, the invariable plane of the solar system, a new catalogue of southern

double stars, and comet orbits. It was a proud day for Innes when the University of Leyden gave him the D.Sc. (*honoris causa*) and of all his work perhaps his discovery of Proxima Centauri pleased him most.

Innes was a good friend and the wide extent of his generosity is barely suspected. In spite of his advancement, he remained to the end absolutely simple, approachable and unaffected and apparently unaware of the high regard in which he was held. Deeply interested in the work of others, he himself worked until the day of his sudden and quite unexpected death on Monday, March 13. FRANK ROBBINS.

WE regret to announce the following deaths:

Lieut.-Col. A. W. Alcock, C.I.E., F.R.S., professor of anthropology in the London School of Hygiene and Tropical Medicine and professor of medical zoology in the University of London, from 1919 until 1924, formerly superintendent of the Indian Museum and professor of zoology in the Calcutta Medical College, known for his work on Crustacea and deep-water fishes, on March 24, aged seventy-three years.

Mr. James Groves, an authority on the *Charophyta*, on March 20, aged seventy-five years.

Prof. Friedrich Rinne, formerly professor of mineralogy and petrography in the University of Leipzig, author of many works on crystallography, on March 12, aged seventy years.

Prof. Edwin C. Starks, associate professor of zoology in Stanford University, California, who was a corresponding member of the Zoological Society of London, aged sixty-six years.

Prof. J. Millar Thomson, F.R.S., emeritus professor of chemistry at King's College, London, president of the Institute of Chemistry of Great Britain and Ireland in 1900-3, who was known for his work on the chemistry of ancient glasses, chemistry of pigments, etc., on March 22, aged eighty-four years.

## News and Views

### Early Man in East Africa

WHILE it is no longer possible on the latest interpretation of the evidence to accept the very high antiquity of Oldoway man, there appears elsewhere in this issue of NATURE (p. 477) a series of reports on the further evidence collected by Dr. Leakey in the spring of last year (not "autumn" as stated inadvertently in our note last week) which points to the early appearance of *Homo sapiens* in East Africa. We publish in full the reports of four committees, each dealing with one aspect of the evidence, presented to, and adopted by, the Royal Anthropological Institute's conference at Cambridge. The material which the committees had before them was derived from deposits at Kanjera and Kanam, two sites, about three miles apart, near Kendu, at the north-east of Victoria Nyanza, an area of old lake-beds,

well-known for its fossiliferous deposits. It comprised a part of a femur and fragments of human skulls of three individuals from Kanjera, of which one group formed a skull-cap, and a second permitted a reconstruction of the skull, and of a small fragment of human mandible from Kanam, fossil animal remains, including a considerable proportion (which has been put so high as fifty per cent) of specimens belonging to extinct forms, and two stone industries, one a pebble industry and the other Chellean. It is to be noted that at Kanjera, while the human bones comprising two groups had been washed out by the rains, two fragments of the third group were found *in situ* in association with fossil animal remains and Chellean tools. Further, the Kanam fragment of mandible was found not far from a pre-Chellean stone implement.