

discuss particular subjects. Allan Sandage reads the time on the stellar, isotopic and cosmological clocks that point to about  $10^{10}$  years for the age of the universe. Walter Sullivan paints a graphic picture of continental drift, and Lieutenant-Colonel Yuval Ne'eman traces the genealogy of the quark. Other enjoyable features are Nigel Calder on the Royal Society, D. S. Greenberg on the public career of George Kistiakowsky and an all too topical prescription for rat control in American cities by David E. Davis.

A few flies are embedded in this fine ointment. A curious exercise in graphics is heralded in the preface by the editor's admonition, "We think you will be fascinated by this meaningful and dramatic portrayal"; the painting, intended to represent the creation of the universe, depicts a man in a Michelangelo-like pose, though emasculate, and sundry other parts of the evolutionary tree, against a backdrop of space. Equally false is the statement that the abnormal height and criminal propensities associated with the *XY* male were discovered last year by Mary A. Telfer. Dr Telfer's useful survey was yet another confirmation of findings made by Patricia A. Jacobs and others in 1965.

NICHOLAS WADE

## Obituaries

### Professor H. L. Hawkins

PROFESSOR H. L. HAWKINS, an eminent geologist and Emeritus Professor of Geology in the University of Reading, died on December 29, 1968, at the age of 81. He had an international reputation for his erudite works on fossil sea-urchins. As founder of the Geology Department at Reading, and its guide for 43 years until his retirement in 1952, he will always be remembered as a wise counsellor by those fortunate enough to come under his spell.

Herbert Leader Hawkins was born in Reading in 1887 of Quaker parents. He was educated at Reading School. The Reading Beds provided his first introduction to geology while he was still a schoolboy. From Reading, Hawkins went on to Kendal and thence to Owens College, Manchester, with a classical scholarship. At Manchester he became the first Mark Stirrup Scholar in Palaeontology and graduated with first class honours in 1908, gaining his MSc in 1909 and DSc in 1920.

In 1909, while still a research scholar at Manchester, the request of two students to take the London Intermediate Examination in Geology provided an opportunity for Hawkins to begin lecturing part-time at University College, Reading. He was soon offered a permanent place on the staff. Starting with a precarious foothold in the Zoology Department, through the generosity of Professor F. J. Cole, he worked quietly away to develop a Geology Department at Reading, and was appointed Professor of Geology in 1922.

His steady stream of publications commenced in 1909 and continued until 1956. The country around Reading provided his keen eyes and skilful hands with a rich harvest. His earliest papers contain the results of his studies of structures in some fossil Echinoidea. These studies on specimens extracted from the local rocks were supplemented by work on material from other parts of the world. Hawkins's thoughts on this class of the animal phylum Echinodermata were brought to a culmination in his address to the Geological Society of London in 1943 on "Evolution and Habit among the Echinoidea: some Facts and Theories".

Hawkins had the gift of being able to paint the broader geological picture. As a palaeontologist, he was well

qualified to comment on the human race, and such articles of his as "A Palaeontologist looks at Life, Palaeontology and Humanity" (his British Association address which called forth editorial comment in *Nature*), "Humanity in Geological Perspective" and "Fossils and Men" can be read with pleasure and profit. This is also true of his other address to the Geological Society, "Some Episodes in the Geological History of the South of England" (1942). It is tempting to suggest that this latter review stemmed from his long interest in the beautiful Vale of Kingsclere, just beyond his native Berkshire. His detailed work on part of Buckland's "type-specimen" of a "Valley of Elevation" demonstrated the value of the hand-auger for elucidating structures in suitably soft rocks.

It is clear that Hawkins recognized no separation of pure and applied science so far as his geological work was concerned. His knowledge of the succession and structure of the local rocks led naturally to his being involved as geological adviser to the Thames Valley and Metropolitan Water Boards. The investigation of the proposed Enborne Valley reservoir site led to the discovery of a pinnacle of Chalk penetrating the Eocene strata on the floor of a buried river-channel. Hawkins also investigated the phosphatic chalk of Taplow.

Hawkins was elected a Fellow of the Royal Society in 1937. He served as president of the Cotteswold Field Club from 1929 to 1931, the South-Eastern Union of Scientific Societies in 1934 and again in 1958, the Geological Section of the British Association in 1936, the Geologists' Association in 1938, the Geological Society of London in 1941-42 and the Palaeontographical Society from 1943 to 1965.

As a scientist, Hawkins combined observation of detail with a vivid imagination. Believing strongly that a geologist is a historian of the Earth, he clearly saw his duty to tell a story. Those who were fortunate enough to hear him lecture and who read his papers will always be grateful.

CORRIGENDUM. In the article "Energy Flux from the  $3^\circ$  K Radiation" by P. T. Landsberg and K. A. Johns (*Nature*, 220, 1120; 1968) the second displayed equation should read:

$$K_\nu = (\nu/\nu_0)^3 f(\nu_0) = m^{-3} f(m\nu)$$

ERRATUM. In the News and Views note "Mechanism of Enzyme Action" (*Nature*, 221, 13; 1969) the first sentence should have read "The mechanism of enzyme action has been discussed at two large meetings held in Britain during the past month—a symposium at the Royal Society on December 5 and 6 and the annual meeting of the British Biophysical Society on December 18 and 19". It was not the British Biochemical Society as stated.

ERRATUM. In the article "Pulsar Amplitude Variations" by E. E. Salpeter (*Nature*, 221, 31; 1969) the first sentence of the third paragraph on page 32 should read: "As discussed before<sup>5</sup>, the ratio  $\Delta\nu_1/\tau_1^2$  can be increased by putting the scintillating medium closer to the source ( $z \ll Z$ )". The last sentence of the same paragraph should read: "For the same scale size  $a$  we have  $\sigma_a \propto \nu^{-1}$  and  $\theta_a \propto \nu^{-2}$ , so that the inequalities in equation (2) hold even more strongly at lower frequencies . . .". Equation (8) should read:

$$\tau_1 \sim 10^4 \text{ s} \left( \frac{100 \text{ km s}^{-1}}{Vr} \right) \left[ \Gamma 10^{(1-2\gamma)} z^{(0.5+\gamma)} \left( \frac{100 \text{ MHz}}{\nu} \right)^{(1+\gamma)} \right]^{-\frac{1}{1-\gamma}}$$

ERRATUM. The name of one of the authors of the communication "Ribosome Formation from Subunits: Dependence on Formylmethionyl-transfer RNA in Extracts from *E. coli*" (*Nature*, 220, 368; 1968) was incorrectly spelt. It should read Gudmundur Eggertsson.