

EDMOND HALLEY (1656-1742)

TO mark the tercentenary of the birth of Halley in 1656, the British Astronomical Association has published a "Memoir"*, prepared by Mr. C. A. Ronan, who is director of the Historical Section of the Association. The "Memoir" includes a reproduction of a portrait of Halley by Thomas Murray, in the possession of the Royal Society, a photograph of Halley's transit instrument, supplied by the Royal Greenwich Observatory, and a drawing of the 8-ft. mural quadrant made for Halley by George Graham. Dr. Angus Armitage, lecturer in the Department of the History and Philosophy of Science at University College, London, contributes an introductory paper on "Halley's Astronomical Heritage".

Dr. Armitage provides an outline of the position which astronomical knowledge and speculation had reached about the time when Halley was entering upon his labours. It is remarkable that, in spite of the fact that seventeenth-century Christendom was racked by strife and dissension, nevertheless western Europe then saw the rise of scientific societies "pledged to promote natural knowledge by concerted investigation and free discussion". Among the developments in astronomical thought, the most momentous for the future was the conception of the universe extending indefinitely in all directions, populated with suns and possibly planetary systems which were, perhaps, inhabited. In his later years Halley supported this view and opposed the view that, if the entire universe was so constituted, the whole surface of the celestial sphere would appear luminous. While Halley thus showed his interest in ultimate cosmological speculations, he was largely concerned with problems of practical and geometrical astronomy.

This subject is well developed by Dr. Armitage and provides an excellent introduction to the two succeeding chapters; in Dr. Armitage's own words:

* Memoirs of the British Astronomical Association. Vol. 37, No. 3: Edmond Halley, 1656-1742—Papers to Commemorate the Tercentenary of his Birth. Pp. 39+2 plates. (Houndsdown West, Mdx.: British Astronomical Association, 1956.) 5s.

"He (Halley) lived at a crucial and formative period in the growth of the science when energies that had been slowly building themselves up for centuries were almost simultaneously released, enhancing and intensifying one another's effects".

Mr. Ronan's first paper, "Edmond Halley—the Man and his Work", gives a short account of Halley's earlier years, and his versatility is shown from the fact that after leaving Oxford in 1676 he communicated a learned paper to the Royal Society when he was only twenty, in which he discussed the problem of finding the eccentricities and aphelia of the planets, finally abolishing the notion of a fixed centre about which uniform motion was supposed to take place. While much of this chapter is 'ancient history' to many, nevertheless there is a very great advantage in having it presented in such an interesting form. Perhaps more interesting still is the last chapter, "The Effect of Halley's Astronomical Work on Later Astronomy", which points out that many histories of astronomy are content to mention Halley's work on comets and his efforts which resulted in the publication of Newton's "Principia". Mr. Ronan directs attention to various other sides of Halley's work, such as the discovery that stars shift their position in space, a phenomenon later known as 'proper motion'; his pioneer work on geomagnetism and geophysics and also in meteorology; the stimulus that he gave by his early efforts to determine the solar parallax; his work in cataloguing southern stars, laying the foundations for his successors in this field; and his interest in novae and variable stars. As the author comments (p. 33): "If he himself had made no discoveries and had not persuaded Newton to pursue his work on universal gravitation, Halley would still be remembered for the effect he had on subsequent research. Adding then his own discoveries and his efforts on the 'Principia' we can see clearly that this great astronomer played a vital part in furthering astronomical science not only in his own day but also in the years that followed".

HYDROMEDUSAE OF THE SOUTHERN HEMISPHERE

IN a recently published report*, Dr. Kramp deals with the systematics and zoogeography of eighty-five species of Hydromedusae chiefly from the earlier voyages of the "Discovery" Investigations, and although the material is mainly from the Southern Ocean, it also includes medusae collected in the North and Central Atlantic and in the Indian Ocean. Let it be said immediately that this is the most important contribution that has ever appeared on the hydromedusan fauna of the southern hemisphere.

This report fills many gaps in our knowledge of the distribution of medusae, and suspicions (which have been growing for some time) are confirmed that many species, which were once thought to be restricted to

the North Atlantic, are now shown to have an extensive distribution. Many, with names made familiar to us through F. S. Russell's "Medusae of the British Isles", are now recorded from the South Atlantic and elsewhere. The great contribution which this report makes to the zoogeography of medusae can best be appreciated by consulting the sixteen excellent distribution maps.

Seven new species are described, one, *Russellia mirabilis*, being so remarkable as to require a new family, the Russellidae, to take it. It is suggested that the genus has affinities with the Calycopsidae and the Pandaeidae rather than with the Bougainvillidae to which it has a superficial resemblance.

Dr. Kramp has made the interesting discovery of stolons and stalked hydranths carrying medusa buds on the stomach of the medusa *Bougainvillia platy-*

* "Hydromedusae from the Discovery Collections". By P. L. Kramp. (Discovery Rep., Vol. 29.) Pp. 128+7 plates+19 text figs. (Cambridge: At the University Press, 1957.) 63s. net.