

"FLYING SAUCERS"

Flying Saucers

By Prof. Donald H. Menzel. Pp. xii+319. (London: Putnam and Co., Ltd., 1953.) 21s. net.

THERE is a deep-rooted human instinct to regard as supernatural anything the cause of which is not immediately obvious, especially phenomena in the heavens. In early days there were the gods, either manifesting their anger in the thunderbolt or warning humanity of impending tragedy by comets or other portents. As successive phenomena received natural explanations, the supernatural began to give place to the superscientific, and in place of gods we have visitors from other worlds. Prominent among these are the 'flying saucers'—space ships of a mysterious race called 'saucerians'.

The story of 'flying saucers' begins on June 24, 1947, when a business man on a private flight in Washington State saw "a chain of saucer-like things at least five miles long, swerving in and out of the high mountain peaks. They were flat like a piepan and so shiny they reflected the sun like a mirror. I never saw anything so fast". Publication of this story in the Press was quickly followed by other reports, and when the U.S. Air Force began an official investigation, the great American public soon joined in. Saucers were seen on every hand, by day and night, from the ground and the air, at all levels and even landing. Between 1947 and July 1952, no fewer than 1,157 'saucers' were recorded. It was high time that a level-headed scientist investigated, and Prof. D. H. Menzel, professor of astrophysics at Harvard, was well qualified for a one-man jury. His book, though not very systematic, is thorough, and he adjudicates on a large number of reports, in many cases after personal interview with the witness.

Many of the descriptions are so disguised by hasty examination, preconceptions, or subsequent exaggeration that it is hard to say what was actually seen; but on the whole, 'flying saucers' may be classified into three groups: real but natural phenomena, man-made objects, and hoaxes. The natural phenomena include a wide variety: stars and planets; will-o'-the-wisps; electrical phenomena such as auroræ, St. Elmo's fire and possibly the little-understood ball lightning; sun dogs, mock suns and mock moons and other phenomena due mainly to ice crystals; peculiar cloud formations; and 'Foo fighters' or small whirls of ice crystals formed by the wings of a plane—one pilot reported a fight with one! The author thinks that many saucers, especially those seen from moving cars and seeming to skim the earth's surface, are simply mirages of distant peaks, and he devotes a long appendix to the theory of mirages.

Among man-made 'flying saucers' there are almost certainly weather balloons, but also such things as searchlight rings on cloud, which of course move about with incredible speed when the beam shifts. Then there are the 'galloping ghosts' of radar, due simply to the mechanics of that form of super-vision.

Finally, hoaxes. In 1938 a radio adaptation of H. G. Wells's "War of the Worlds" was taken as truth by at least a million listeners, some of whom actually saw the battle or smelt the smoke. That matter was soon cleared up; but the "little men from Venus" who, as described by a lecturer at the University of Denver, actually came out of a saucer, are not quite dead yet.

Although there remain a few reports which cannot be fitted into any known category, the author is firmly of the opinion—with which most thinking people will agree—that whatever they were, they were not visitors from the stars, and he supports this with a brief survey of the conditions which render civilized life, on the planets at least, highly improbable. 'Flying saucers', under other names, have been always with us, as angels and heavenly hosts, which survived even to the 'angels of Mons', and later, when the possibility of directed flight first arose, as wonderful airships (that is, lenticular clouds). It is unlikely that readers of *Nature* have ever believed in flying saucers as interplanetary visitors; but they will find this book well worth study for its store of information about curious natural phenomena, as well as for its entertainment value.

C. E. P. BROOKS

"THE MERCK INDEX"

The Merck Index of Chemicals and Drugs

An Encyclopedia for the Chemist, Pharmacist, Physician and Allied Professions. Sixth edition. Pp. xiv+1167. (Rahway, N.J.: Merck and Company, Inc., 1952.) 7.50 dollars; thumb-indexed, 8 dollars.

THIS attractive compendium will be familiar to many chemists, pharmacists and medical men through its earlier editions. First published in 1889, it has undergone a series of metamorphoses and modernizations. The fifth edition was published in 1940. The present edition is already assured of a wide circulation, for nearly fifty thousand copies are said to have been ordered prior to publication. There are more than eight thousand descriptions of individual substances, more than two thousand structural formulæ, drawn to conform to the Ring Index, and about twenty thousand names of chemicals and drugs—these include many trade names with their equivalents. Although primarily intended as a work for rapid reference, browsing in the new "Merck Index" is a fascinating and stimulating exercise.

Appendixes occupy some hundred and forty pages and include a list of more than three hundred 'name' reactions with descriptions and references; a table of radioactive isotopes with their half-life periods, types of radiations and medical uses; and a list of dyes permitted in the United States for colouring foods, drugs and cosmetics.

The choice of compounds selected for inclusion in the "Index" seems somewhat arbitrary. There is a wide range of natural and synthetic drugs, and for these chemical descriptions are given, with literature references to their determinations of structure and methods of synthesis. Toxicities and medical and veterinary uses are briefly indicated. Many natural products having no established therapeutic applications are also included, together with a variety of purely synthetic products having no connexion with medical usage. These last probably represent a survival of the design of the first edition, which included in its title "a summary of whatever chemical products are to-day adjudged as being useful in either medicine or technology". Non-medicinal substances not of natural occurrence described in the "Index" include the monochloronaphthalenes, Cleve's acids, decalin and tetralin, and polycyclic