

guished, but even the newer terms such as phenetic and patristic were in need of clarification. Dr. Heywood and Dr. G. A. Harrison (Oxford) attempted a clarification of these points. Other contributors to a lively and wide-ranging discussion were Prof. D. H. Valentine (University of Durham), Prof. D. J. Carr (Queen's University of Belfast) and Dr. G. B. Corbet (British Museum (Natural History)). In conclusion Mr. R. Crawshaw-Williams

(Penrhyndeudraeth), the chairman of the session, emphasized the importance of determining the purpose for which a classification was being constructed and of avoiding the fallacy that any one classification was correct in all circumstances.

¹ Gregory, W. C., *Trans. Amer. Phil. Soc.*, Ser. 2, **31**, 448 (1941).

² Hill, L. R., Ihm, P., Schnell, P., and Silvestri, L. G. (in the press).

³ Silvestri, L. G., Hill, L. R., and Möller, F., *Convegno naz. biofis.*, **1** (1963).

OBITUARIES

Dr. A. B. Wood, O.B.E.

DR. ALEXANDER BEAUMONT WOOD died on July 19. He was born at Uppermill in the West Riding of Yorkshire on December 21, 1890. Educated at Huddersfield Technical College and the University of Manchester, he graduated with first-class honours in physics in 1912. He continued in the Department of Physics under Rutherford, gaining his M.Sc. by research in 1913 and seeing much of the pioneering work in atomic physics. In 1914 he was appointed Oliver Lodge Research Fellow in the University of Liverpool, and then lecturer in physics. In July 1915 he became, at Rutherford's suggestion, one of the first two research physicists to work on anti-submarine problems for the Admiralty Board of Invention and Research which was just being formed. The work was started in Rutherford's department and later established in a naval experimental station at Aberdour. There Wood initiated some of the earliest methods of comparing sound intensities and used them to explore sound fields produced by sources in the sea. He was mainly responsible for the design of the first directional hydrophone used extensively in the search for enemy submarines. In 1917 the laboratory was moved to Parkeston Quay. Here Wood used crystal rectifiers as a means of measuring microphonic current and used them to plot the directional properties of hydrophones and sound fields round moving ships. He also investigated pressure waves from underwater explosions. During this period the group of outstanding physicists working at Parkeston pioneered most of the principles which have since been used for underwater detection, location and destruction.

After the end of the War, Dr. Wood remained in Admiralty service. At a temporary experimental establishment at Shandon, Gareloch, he furthered the investigation of underwater sound-ranging and explosions. He developed the first cathode-ray oscillograph to give a single linear traverse and used it with a tourmaline pressure gauge to record pressure-time variations. He was awarded a D.Sc. degree at Manchester in 1919. When the Shandon Laboratory closed in 1921, Dr. Wood transferred to the new Admiralty Research Laboratory under construction at Teddington, next door to the National Physical Laboratory. While in charge of the Sound Division he made accurate measurements of the velocity of sound in sea water, developed the use of magnetostriction transducers, and, together with F. D. Smith and J. A. McGeachy, designed the echo depth recorder which is used very widely to-day. In 1936 he was transferred to H.M. Signal School, Portsmouth, where he dealt with radio-location problems. In 1937 he was appointed chief scientist at H.M. Mining School, where he was in charge of research on mining and countermeasures. He assisted in the first recovery of a German magnetic mine at Shoeburyness on November 23, 1939.

In 1943 he returned to Teddington as superintendent of the Admiralty Research Laboratory to look after groups dealing with underwater acoustics, infra-red detection, electromagnetics, underwater ballistics, and soon oceanography, in particular the detailed investigation of waves and swell.

In 1946 he became deputy director of research, Admiralty, and was concerned mainly with the administration of science, until he retired in 1950. He immediately returned to Teddington to carry out research, and at the time of his death his scientific interest was still largely in the propagation of sound in the sea, as it was when he started at Aberdour.

Dr. Wood had been a Fellow of the Physical Society since 1920, and a Founder Fellow of the Institute of Physics. He was awarded the Duddell Medal of the Physical Society in 1952 for his work on the design of scientific instruments, and the Acoustical Society of America gave him its Pioneers of Underwater Acoustics Award in 1961. In May this year he returned from a year's work in the United States, where he had many friends. He has a long list of scientific publications, and his *Text Book of Sound*, first published in 1930, was revised three times. He was made O.B.E. in 1940 for his service to the Navy.

He was a welcome visitor in all laboratories, always ready to advise and very ready to help when the work pleased him. From his fifty years' experience in science he could always suggest some way out of a difficulty. He will always be remembered for his great kindness.

G. E. R. DEACON

Mr. William F. Roeser

MR. WILLIAM F. ROESER, physicist at the U.S. National Bureau of Standards, died at his home in Chevy Chase, Maryland, on June 17, at the age of sixty-two.

Mr. Roeser was well known for his work in the accurate measurement of temperature and heat transfer by thermal radiation. His present position was as a consultant in the Building Research Division. In addition, he had been serving as an expert adviser in planning the forthcoming transfer of the National Bureau of Standards to Gaithersburg, Maryland. Recently he was cited by the Bureau for his exceptionally able contributions in this field, particularly in solving many of the problems of interference at the new site, such as vibration, radiation, and air pollution.

The Meritorious Service Award of Sigma Tau, the national honorary engineering fraternity, was given to Mr. Roeser in 1952 for his achievements in building technology. He also received citations from the Office of the Surgeon General of the U.S. Army, the Manhattan District, the Office of Scientific Research and Development, and the National Advisory Committee for Aeronautics (Subcommittee on Metals for Aircraft). In 1929 he was awarded the John A. Penton Prize by the American Foundrymen's Association for his paper entitled "Temperature Measurements of Molten Cast Iron".

Mr. Roeser had completed forty-three years of Federal service, all with the National Bureau of Standards. He began as a physicist, carrying out high-temperature research, and progressed to chief of the Mechanical Metallurgy Section and assistant chief of the Metallurgy Division. During the Second World War he contributed to important improvements in prosthetic devices by his research and development work; his investigations of