With these findings we can begin to construct a picture of the role of temperature regulation in the biology of large moths. Clearly the ability to reach elevated temperatures and to regulate within this range grants the animals a degree of freedom from environmental thermal conditions which approaches that of some small birds and mammals.

The ability to begin and cease activity abruptly (Fig. 1) results in economy of energy; this compensates in part for the small size and unfavourable radiating-surface volume ratio of the moth. Therefore, energy utilization in this moth may be as efficient as in those endothermic vertebrates known to undergo frequent torpor, such as humming-birds⁸. Recognition of the similarity in thermal biology of endothermic insects and small birds and mammals affords an opportunity for further investigation of energy conservation and the related problems of hypothermia and hibernation in exceedingly small warmblooded animals.

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- ¹ Sotavalta, O., Ann. Zool. Soc. 'Vanamo', 16, 8, 1 (1954).
- ² Dotterweich, H., Zool. Jahrb., Abt. allg. Zool. Physiol., 44, 399 (1928). Krogh, A., and Zeuthen, E., J. Exp. Biol., 18, 1 (1941). Dorsett, D. A., J. Exp. Biol., 39, 579 (1962).
- ³ Richards, O. W., The Social Insects, 20 (Harper and Brothers, New York, 1961).
- ⁴ Church, N. S., J. Exp. Biol., 37, 1, 186 (1960).
 ⁵ Pringle, J. W. S., Insect Flight, 50 (Camb. Univ. Press, 1957).
- ⁶ Cowles, R. B., and Bogert, C. M., Bull. Amer. Mus. Nat. Hist., 83, 5, 265 (1944).
- ⁷ Hardy, J. D., Physiol. Rev., 41, 3, 521 (1961).
- ⁸ Bartholomew, G. A., Howell, T. R., and Cade, T. J., The Condor, 59. 3, 145 (1957).

NEWS and VIEWS

The Royal Society: Vice-presidents

THE President of the Royal Society, Sir Howard Florey, has appointed the following vice-presidents for the year ending November 30, 1964: Lord Fleck, treasurer of the Royal Society, formerly chairman of Imperial Chemical Industries, Ltd.; Sir William Hodge, physical secretary of the Royal Society, master of Pembroke College and Lowndean professor of astronomy and geometry in the University of Cambridge; Prof. A. A. Miles, biological secretary of the Royal Society, director of the Lister Institute and professor of experimental pathology in the University of London; Sir Patrick Linstead, foreign secretary of the Royal Society, and Rector of the Imperial College of Science and Technology; Prof. W. T. J. Morgan, deputy director of the Lister Institute and professor of biochemistry in the University of London; Dr. H. W. Thompson, university reader in infra-red spectroscopy, Oxford.

The Wellcome Laboratories of Tropical Medicine:

Dr. O. D. Standen

DR. O. D. STANDEN has been appointed head of the Wellcome Laboratories of Tropical Medicine, the Wellcome Foundation, Ltd., in succession to Dr. L. G. Goodwin, who has left the Laboratories to become director of the Nuffield Institute of Comparative Medicine (Nature, 195, 946; 1962). Dr. Standen graduated at the University College of South Wales and Monmouthshire, Cardiff, specializing in parasitology. After serving in the Royal Naval Volunteer Reserve during the Second World War, he joined the Wellcome Laboratories of Tropical Medicine in 1946, becoming head of the Helminthology Department in 1948. His work on helminth infections, particularly on schistosomiasis, is widely known. In addition to his laboratory research, he has undertaken several field studies in Africa and Asia. His publications include numerous papers and reviews on experimental chemotherapy. He is a member of a World Health Organization Expert Advisory Panel on Parasitic Diseases, and was elected president of the British Society of Parasitology in 1962.

Director of Basic Research Laboratories of the British Coal Utilization Research Association:

Dr. L. C. F. Blackman

DR. L. C. F. BLACKMAN has been appointed to succeed Mr. R. L. Brown as director of Basic Research Laboratories of the British Coal Utilization Research Association. Dr. Blackman, who is thirty-three, is at present director of Chemical Research, British Railways; he will take up his new post in February 1964. Dr. Blackman graduated in chemistry at Queen Mary College, University of London, in 1952 and proceeded to take his Ph.D. degree under Prof. M. J. S. Dewar for research into synthetic promoters for the dropwise condensation of steam. In 1954 he joined the Admiralty Services Electronic Research Laboratory, Harlow, and was engaged on ferrite research. primarily with regard to microwave applications. During this period he was appointed to a Government senior research fellowship. In 1957 he joined the Department of Chemical Engineering, Imperial College of Science and Technology, London, as an Imperial Chemical Industries Fellow, later becoming lecturer in the chemical physics of Here he continued his interest in the solid-state solids. by working with Prof. A. R. Ubbelohde on various aspects of carbon and graphite. His main investigations were on pyrolytic graphite, both from the point of view of possible industrial application and as a convenient means of studying the anisotropic electronic properties of graphite intercalation compounds. He was awarded his D.I.C. for this work. When Dr. Blackman joined the British Railways Research Department in 1961, he was initially concerned with the reorganization of the then Chemical Services Division to include basic objective research. In 1963 he was appointed to his present post of director of chemical research.

Mr. R. L. Brown was appointed deputy director-general of the British Coal Utilization Research Association in 1962 (Nature, 195, 756; 1962).

1963 James Clayton Prize

THE James Clayton Prize of the Institution of Mechanical Engineers is to be divided equally between Mr. P. Jackson, director of research, Wm. Doxford and Sons. Ltd., of Sunderland, and Mr. F. B. Levetus. technical director, Keelavite Hydraulics, Ltd., of Coventry. The award to Mr. Jackson has been made for his work in the design and development of large marine Diesel engines and for the part which he has played in keeping British engines abreast of foreign equivalents. Mr. Levetus has been awarded the prize for his contribution to British development in oil hydraulic mechanisms applied to power transmissions and control systems through a wide range of industrial uses, including the field of automation and material handling, and for his work on international standards. The James Clayton award was founded in 1945 following the bequest by the late Mr. James Clayton, who was a member of the Institution for 43 years from 1901 to the time of his death in 1944. The prize (£1,700) is given annually to the member, or members, of the Institution who, in the opinion of the Council, have made