

papers by S. M. Shiino on Japanese copepod parasites of fish, and one on bopyrid parasites of Crustacea (3, Nos. 1 and 2. Otanimachi, Tsu, Mie Prefecture: Prefectural University of Mie). He has written very extensively in this journal and elsewhere on these two subjects and has added enormously to the Japanese fauna. T. Ito and T. Iwai have nine papers (with English résumés) on the 'Mizukawari' in eel-culture ponds. This is the study of the grazing effects of brackish-water rotifers, on the phyto- and zoo-plankton of the fish ponds, and the physical and chemical changes brought about during this season. There are also four papers by J. Horiguchi (with English résumés) on biochemical work on the shell-fish *Pteria (Pinctada) martensii* (Dunker) and *Hyriopsis schlegelii* (v. Martons). Other articles deal with algae; the fishing capacity of different nets for small trawlers operating on the Ise Bay grounds; studies on fish-meat jellies; and some ecological studies on fish.

Cryogenics

CRYOGENICS technology is no longer confined to the large-scale liquefaction of gases, nor is low-temperature research conducted solely in university laboratories. The increasing use since the Second World War of cryogenic propellants, of liquid hydrogen for deuterium separation or bubble chambers and of liquid helium for superconductive computer elements and other electronic devices, illustrates the recent intensified and varied application of cryogenic methods. A warm welcome will therefore be given to the new quarterly *Cryogenics*, since it is the first international journal to be devoted solely to all aspects of applied or basic low-temperature research, engineering and development (1, No. 1; September 1960. Pp. 64. London and New York: Heywood and Co., Ltd., 1960. Subscription rates: £5 per annum (4 issues); 15 dollars; 90 NF.). The three joint editors, Dr. K. Mendelssohn (Great Britain), Dr. R. B. Scott (United States) and Dr. L. Weil (France), are supported by eleven advisory editors, who are all well known for their high reputations as active low-temperature research workers. The contents of the first number of *Cryogenics* consist of a review article by Dr. N. Kurti on the subject of cooling by adiabatic demagnetization of nuclear spins; nine original contributions with abstracts in English, French, German and Russian; two letters to the editors and two book reviews; and a bibliography of cryogenic literature covering the period January–May 1960. A complete bibliography up to date of all papers on low-temperature research, which has been made available to the editors by Arthur D. Little, Inc., is to be published in a special supplementary issue of *Cryogenics*, and two review articles scheduled for future issues are, "New Methods of Producing Cold", by H. O. McMahon, and "Irradiation at Low Temperatures", by L. Weil.

Use of Natural Gas in Britain

MR. P. G. INNEL CLEMENT, public relations officer to the National Coal Board (West Midlands Division), has written directing attention in amplification of the facts given in the article entitled "A British Source of Natural Gas" in *Nature* of October 29, p. 373, to what is being done to tap the natural gas resources of British coal mines. The extraction of coal causes fractures in the seams and in the surrounding strata, through which the trapped firedamp escapes into the

workings. The traditional way of dealing with it has been to dilute it to safe proportions in the underground ventilating current, but in some coal seams the emission of methane is so high that there is difficulty in diluting it to safe proportions. Techniques for draining methane in such circumstances as these have been developed in the past ten years. A technique now in increasing use involves drilling holes of narrow diameter, often 100 yd. long, through the strata at an angle of about 55° from the horizontal as the coal working face advances. The holes are fitted with equipment for measuring the flow and pressure of the gas, and for taking samples. The gas is extracted by exhaust pumps, and piped to the surface or to some point underground where the ventilation is sufficient to disperse it safely. In an increasing number of collieries, methane drawn from the seams is being pumped to the surface and put to practical use. Gas obtained in this way is being used at the rate of 2,700 million cu. ft. a year, most of which is being piped to the works of Divisional Gas Boards. In the North Staffordshire area of the West Midlands Division, four collieries are contributing about 500 million cu. ft. a year to the national total, and in the past month a Shropshire colliery has started to supply methane to a gas works. The effects of methane drainage are twofold: it improves working conditions underground, particularly from the safety point of view; and on an increasing scale it is putting a natural product to a practical use.

Safety Propaganda in Industry

POSTERS are widely used in the interests of accident prevention but little reliable information exists as to their efficacy. A recent report from the Human Factors Section of the Operational Research Department, British Iron and Steel Federation, published in *Occupational Psychology* (34, No. 3; 1960), suggests that appropriately chosen posters may appreciably reduce certain kinds of industrial hazard. In an experiment with specially designed posters carried out in six steel works, Dr. S. Laner and Mr. R. G. Sell have been able to show that the percentage of operations conforming with safety requirements (hooking of chain slings on to crane hooks) averaged over a six-week period after display of the posters rose very appreciably, in some cases by more than 20 per cent. No comparable improvement was noted in a similar steel works in which no posters were displayed. Interestingly, the slingers often found it difficult to recall what the posters were and many doubted their efficacy. It is suggested that the effectiveness of the posters may have derived from their relevance to a specific working situation rather than to safety in general. This point should be borne in mind by all concerned with the design of safety propaganda.

Shortage of Graduate Biochemists

EVIDENCE of a shortage of trained graduate biochemists in the United Kingdom emerged during the recent Biochemical Society colloquium on "The Organization and Financing of Research in Biochemistry and Allied Sciences in Great Britain" (see *Nature*, 188, 194; 1960). With the object of defining more closely the extent and the nature of this shortage, the views of those who employ biochemists are being sought. Information should be sent to Dr. K. S. Dodgson, Department of Biochemistry, University College, Newport Road, Cardiff.