

In this way, four different investigations were carried out, namely, fatigue tests of butt welds in carbon-steel plates; comparisons of the strengths of welded and riveted joints in low-alloy steel plates; the effect of periods of rest upon fatigue strength of butt welds; and the influence of transverse fillet welds upon fatigue strength. Tests were made of specimens in the as-welded condition and of others with the reinforcement planed flush with the plate and of others again with it ground flush. In each category there were specimens which were stress-relieved by being heated to 1,200° F. for one hour and then cooled in the furnace while others were not stress-relieved.

Considering that the welds under test may be fairly regarded as having been made under as nearly as possible ideal conditions, the results indicate that when suitable allowance is made for variations in quality, the dependable strength of welded joints and plates weakened by transverse welds is still quite moderate. The details are too numerous to summarize, but as examples, some of the results at 2,000,000 cycles may be cited. Butt welds in  $\frac{3}{8}$ -in. carbon-steel plates in the as-welded condition gave 14,400, 22,500 and 36,900 lb. per sq. inch in the three classes of cycle. The corresponding figures for machined-off specimens of classes 2 and 3 were 28,400 and 43,700 and for ground-off specimens of class 2 were 26,300. Stress-relief did not appear to affect fatigue strength, and periods of rest showed no advantage. Carbon-steel plates with one transverse fillet weld gave an average of 18,900 and with two welds 13,100 lb. per sq. in. The character of the bead had some effect on the figures, but for a given base metal the variation did not exceed 5 per cent.

## FORTHCOMING EVENTS

Saturday, August 30

BRITISH INSTITUTION OF RADIO ENGINEERS (at the Federation of British Industries, 21 Tothill Street, London, S.W.1), at 3.15 p.m.—Mr. G. A. V. Sowter: "Applications of High Permeability Magnetic Alloys to Electronic Devices".

## APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

DISTRICT EDUCATION OFFICER (man or woman)—The County Education Officer, County Hall, Hertford (September 6).

PUBLIC ANALYST and an OFFICIAL AGRICULTURAL ANALYST—The Clerk of the Berkshire County Council, Shire Hall, Reading (September 9).

LIBRARIAN—The Principal and Clerk to the Governing Body, Wigan and District Mining and Technical College, Wigan (September 10).

CONSULTANT PSYCHIATRIST and an EDUCATIONAL PSYCHOLOGIST—The Director of Education, Education Office, Chapel Street, Salford 3 (September 13).

COLLEGE LIBRARIAN (woman)—The Secretary, Bedford College for Women, Regent's Park, London, N.W.1 (September 13).

POWER STATION SUPERINTENDENT—The Town Clerk, Town Hall, Halifax (September 15).

BOROUGH ELECTRICAL ENGINEER—The Town Clerk, Town Hall, Woolwich, London, S.E.18 (endorsed 'Appointment of Borough Electrical Engineer') (September 15).

LECTURER IN BOTANY, with subsidiary Zoology—The Principal, Technical College, Kingston-upon-Thames.

LECTURER IN ELECTRICAL ENGINEERING—The Principal and Organizer of Further Education in Rugby, College of Technology and Arts, Rugby.

POST-GRADUATE TEACHING SCHOLAR (Experimental Zoologist) IN THE DEPARTMENT OF ZOOLOGY—The Secretary, The University, Edmund Street, Birmingham 3.

## REPORTS AND OTHER PUBLICATIONS

(not included in the monthly Books Supplement)

### Great Britain and Ireland

Scottish Marine Biological Association. Annual Report, 1939-40. Pp. 32. Annual Report, 1940-41. Pp. 32. (Millport: The Marine Station.) [118]

Angueddfa Genedlaethol Cymru: National Museum of Wales. Tin Through the Ages: in Arts, Crafts and Industry; Handbook to a Temporary Exhibition, July-December 1941. By Dr. F. J. North. Pp. 38. (Cardiff: National Museum of Wales.) 3d. [118]

Ministry of Agriculture and Fisheries. "Growmore" Bulletin No. 3: Preserves from the Garden. By B. Alice Crang and Margery Mason. Revised edition. Pp. 28. (London: H.M. Stationery Office.) 4d. net. [118]

Experiment and Research Station, Nursery and Market Garden Industries' Development Society, Ltd. Twenty-sixth Annual Report, 1940. Pp. 72. (Cheshunt: Nursery and Market Garden Industries Development Society, Ltd.) [118]

Department of Scientific and Industrial Research. Index to the Literature of Food Investigation. Vol. 12, No. 2, September 1940. Compiled by Agnes Elisabeth Glennie, assisted by Gwen Davies and Catherine Alexander. Pp. iv+75-146. 4s. 6d. net. Vol. 12, No. 3, December 1940. Compiled by Agnes Elisabeth Glennie, assisted by Gwen Davies and Catherine Alexander. Pp. iv+147-226. 4s. 6d. net. (London: H.M. Stationery Office.) [128]

Canteen Catering. Prepared and issued by the Ministry of Food. Pp. 84. (London: Ministry of Food.) 6d. [148]

### Other Countries

Memoirs of the Geological Survey of India. Vol. 74, Part 1: The Cretaceous and Associated Rocks of Burma. By Dr. E. L. G. Clegg. Pp. iii+102+xx. (Calcutta: Geological Survey of India.) 2.4 rupees; 3s. 9d. [68]

U.S. Office of Education: Federal Security Agency. Vocational Division Bulletin No. 210 (Occupational Information and Guidance Series No. 4): Working Your Way through College and other Means of providing for College Expenses. By Walter J. Greenleaf. Pp. v+175. (Washington, D.C.: Government Printing Office.) 20 cents. [118]

Ministry of Agriculture: Central Agricultural Research Institute, Sofia, Bulgaria. Polyploidy and its Role in Evolution and Plant Breeding. By Dontcho Kostoff. Pp. 85. (Sofia: Central Agricultural Research Institute.) [128]

U.S. Office of Education: Federal Security Agency. Leaflet No. 60: Choose a Book about Things to be Conserved. Compiled by Helen K. Mackintosh and Effie G. Bathurst. Pp. 20. (Washington, D.C.: Government Printing Office.) 5 cents. [128]

Publications of the Dominion Astrophysical Observatory. Vol. 7, No. 12: The Determination of the Magnitude Difference between the Components of Spectroscopic Binaries. By R. M. Petrie. Pp. 205-238. Vol. 7, No. 13: The Spectrographic Orbit of H.D.207826 (Boss 5620). By Andrew McKellar and C. G. Patten. Pp. 239-244. Vol. 7, No. 14: The Spectrographic Orbits of H.D.207650. By R. M. Petrie. Pp. 245-250. (Victoria, B.C.: Dominion Astrophysical Observatory.) [138]

Imperial Council of Agricultural Research. Miscellaneous Bulletin No. 40: Grape-Growing in Baluchistan. By A. M. Mustafa and M. Asghar Ginal. Pp. 16+5 plates. (Delhi: Manager of Publications.) 1.2 rupees; 1s. 9d. [148]

### Catalogues, etc.

Rotenone Lotion B.D.H. Pp. 2. (London: The British Drug Houses, Ltd.)

The Wild-Barfield Heat-Treatment Journal. Vol. 4, No. 29. Pp. 47-54. (Watford: Wild-Barfield Electric Furnaces, Ltd.)

The Nivoc Supplement. No. 20, July. Pp. 16. (London and Birmingham: W. and J. George, Ltd.)

B.D.H. Standard Stains specially prepared for Microscopical Work, with some General Notes upon the Use of Stains. Pp. 40. (London: The British Drug Houses, Ltd.)

A Catalogue of Books, including works on Botany, Costume, English History and Literature, Medicine and Surgery, Natural History, Science, Shipbuilding and Naval Affairs, Wales, Addenda. (No. 590.) Pp. 60. (London: Bernard Quaritch, Ltd.)

Dunns Seed Wheats: a Guide to Autumn Cereals and Forage Crops. Pp. 12. (Salisbury: Dunns Farm Seeds, Ltd.)

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