# BOOK SECTION

## New Publications

First International Industrial Finishes Convention—Proceedings, Papers and Discussions, 1961, published by Scientific Surveys Ltd., London, £ 2 sh 2.

Corrosion of Construction Materials, by I. Ya. Klinov (Ed), translated from Russian, published by Consultants Bureau, New York 200 pages approx, £ 15.

Intercrystalline Corrosion and Corrosion of Metals under Stress, translated from Russian, published by Consultants Bureau, New York.

Technology of Electrodeposition, by A. T. Vagramyan and Z. A. Solov'eva, translated from Russian by A. Behr, published by Robert Draper Ltd., Teddington, Middx, England, 1962, 398 pages, 90 sh.

Calculations in Physical Chemistry, by B. W. V. Hawes and N. H. Davies, published by the English Universities Press Ltd., London, Chemical Science Texts, 1962. 203 pages, 21 sh.

Surface Phenomena in Metals and Alloys, by V. K. Semenchenko (edited by R. Kennedy), published by Pergamon Press, Oxford and New York, 1961, 466 pages, 105 sh.

Metallurgy in the Service of Man, by W. H. Dennis, published by MacDonald and Co., (Publishers) Ltd., London, 1961, 372 pages, 45sh.

Electrochemistry of Fused Salts, by IU. K. Delimarskii and B. F. Markov, published by Sigma Press, Washington D. C., 1961, 338 pages, $ 12.50.

Advances in Electrochemistry and Electrochemical Engineering, Vol. 1: Electrochemistry, by P. Delahay (Ed), published by Interscience Publishers, New York, 326 pages, $ 12.

Corrosion of Metals in Sea Water, by F. W. Fink, published by Office of Technical Services, Washington D.C., P.B. 171344, 1960, 59 pages, $ 1.75.

Cathodic and Anodic Protection, by R. Juchniewicz, published by Polish State Technical Publishers, Warsaw, 1960, 237 pages, £ 2 sh 3.

Physical Chemistry of Process Metallurgy, An International Symposium, AIME, by G.R. St. Pierre (Ed), published by Interscience Publishers, New York and London, 1961; Part I, 614 pages, £ 8 sh 9; Part II, 727 pages, £ 9 sh 8.

Extractive Metallurgy of Copper, Nickel and Cobalt, by P. Queneau (Ed), published by Interscience Publishers, New York and London, 1961, 647 pages, $ 18.

Metallurgy for Engineers, by E. C. Rollason, published by Edward Arnold, London, 1961, 3rd ed, 392, pages, £ 1.

Practical Physical Metallurgy, by R. Rawlings, published by Butterworths & Co. (Publishers) Ltd., London, 1961, 159 pages, £ 5.75.

## Publications Received

ISI Bulletin, Vol. 14, No. 1, 2, 1962, ISI, New Delhi.

Golden Jubilee Research Volume, 1909 – 1959, Indian Institute of Science, Bangalore, 1959, 410 pages.

The European Steel Market in 1960, United Nations, Geneva, 1961, 98 pages.

Australian Corrosion Engineering, Vol. 6, No. 1–3, 1962, North Sydney. N.S.W. Australia.

Australian Chemical Engineering, Vol. 3, No. 1–3, 1962, North Sydney, N. S. W., Australia.

Science and Appliance, Vol. 26, No. 1-3 1962, The Ohio State University Research Foundation, Columbus, Ohio, U.S.A.

CSIR News, Vol. 12, No. 3–8, 1962, New Delhi.

Electroplating and Metal Finishing, Vol. 15, No. 1–4, 1962, Robert Draper Ltd., Teddington, Middx, England.

Corrosion Technology, Vol. 9, No. 1–3, 1962, Leonard Hill, London.

Science and Engineering Vol. 14, No. 9–10, 1961, ISE, Calcutta.

Industrial Finishing, Vol. 14, No. 163–165, 1962, London.

R and D Digest, Vol. 2, No. 1, 1962, Scientific Information Bureau, Defence Science Laboratory, Delhi.

Metal Finishing Journal. Vol. 8, No. 85–87, 1962, Industrial Newspapers (Fuel & Metallurgical) Ltd., London.

Corrosion Prevention and Control, Vol. 9, No. 1–3, 1962, Scientific Surveys Ltd., London.

Insdoc List Current Scientific Literature, Vol. 9, No. 4–9, 1962, Insdoc, New Delhi.

Battelle Technical Review, Vol. 11, No. 1–3, 1962, Battelle Memorial Institute, Columbus, Ohio, U.S.A.

Metal Finishing Vol. 60, No. 1–3, 1962, Metals and Plastics Publications Inc., Westwood, N. J., U.S.A.

ZDA Abstracts, Vol. 19, No. 12, 1961; Vol. 20, No. 1, 1962, London.

Review of Metal Literature, Vol. 18, No. 12, 1961; Vol. 19, No. 1-3, 1962, American Society for Metals, Novelty, Ohio, U.S.A.

The Nickel Bulletin, Vol. 34, No. 10-12, 1961; Vol. 35, No. 1, 1962, The International Nickel Co. (Mond) Ltd., London, through Nickel Information Bureau Private Ltd., Bombay.

Titrimetric Analysis — An Introductory Course by N.B.B. Johnstone and T. C. Downie, published by University of London Press Ltd., London, 1961, 186 pages, 13 sh 6 d or Rs. 10-80; through Orient Longmans Ltd., Madras.

Twenty-Year Atmospheric Corrosion Investigation of Zinc-coated and Uncoated Wire and Wire Products, by F. M. Reinhart, ASTM Sp. Tech. Pub. No. 290, 1961, 141 pages $ 5.50

Chemical Age of India, Vol. 13, No. 1, 2, 1962, Technical Press Publications, Bombay.

Materials Protection, Vol. 1, No. 1, 2, 1962, NACE, Houston, U.S.A.

Florida Engineering News, Vol. 4, No. 1, 1962, Engineering and Industrial Experiment Station, Gainesville, Florida, U.S.A:

Finishing News, Vol, 1, No. 6, 1962, Scientific Surveys Ltd., London.

British Patents, Group 36, London.

Quarterly Bulletin of Steel Statistics for Europe, Vol. 12, No. 3, 1961, United Nations, Geneva, through UN Information Centre, New Delhi.

Inco-Mond Magazine, No. 19, 1962, The International Nickel Co. (Mond) Ltd., London, through Nickel Information Bureau Private Ltd., Bombay.

The Design of Chemical Plant in Wiggin High-Nickel Alloys, by J. L. Ryder, published by Henry Wiggin and Co., Birmingham, Publication No. 2172, 1961, 101 pages; through Nickel Information Bureau Private Ltd. Bombay.

Defence Science Journal, Vol. 12, No. 1, 1962, Defence Resarch and Development Organisation, New Delhi.

Crerar Metals Abstracts, Vol. 10, No. 3, 4, 1961. The John Crerar Library, Chicago.

Corrosion, Vol. 18, No. 1, 2, 1962, NACE, Houston, U.S.A.

International Atomic Energy Agency Bulletin, Vol. 4, No. 2, 1962, IAEA, Vienna; through UN Information Centre, New Delhi.

Journal of Indian Institute of Science, Vol. 44, No. 2, 1962, I.I.Sc., Bangalore.

Australian Journal of Applied Science, Vol. 13, No. 1, 1962, CSIRO, East Melbourne.

Metal Industry Handbook and Directory 1962, published by Iliffe Books Ltd., London, 560 pages, 21 sh.

Buletinul Institutului Politechnic Dui Iasi, Serie Noua, Tomul 7 (11), Fasc. 1-2, 1961.

Statistics of World Trade in Steel 1960, published by the Secretariat of the Economic Commission for Europe, United Nations, Geneva, 39 pages, 1962.

Cobalt, No. 14, 1962, Centre D'Information Du Cobalt, Brussels.

Wiggin Nickel Alloys, No. 64, Henry Wiggin and Co. Ltd., Birmingham.

## BOOK REVIEWS

**Twenty-Year Atmospheric Corrosion Investigation of Zinc-coated and Uncoated Wire and Wire Products**, by F. M. Reinhart, published by American Society for Testing Materials, ASTM Special Publication No. 290, 1961, 141 pages, $ 5.50.

This monograph presents in a nutshell the vast amount of data collected and evaluated, for a 20-year engineering research study made under the direction of ASTM Committee A-5 on Corrosion of Iron and Steel. Detailed information is provided under: materials, characteristics and exposure; inspection of wire and wire products; results; visual examinations; other products; tension tests. The experimental results have been presented in 28 tables, 6 lists and 50 figures. The important findings are: (1) life of a zinc-coated wire is proportional to the weight of the coating, (2) time rate of loss of zinc is linear, (3) corrosion rate of zinc coat-

ing is independent of the method of coating, and (4) strengths of copper and lead-coated wires are not significantly affected after 20 years.

The publication admirably fulfills the objectives of the ASTM, namely, '... promoting knowledge of the properties of materials and developing specifications and tests for materials.' The information contained in this report will no doubt be extremely useful to corrosion technologists, metallurgists, engineers and others dealing with wire or wire products in the atmosphere.

— T.L.R.

**Titrimetric Analysis: An Introductory Course,** by N.B.B. Johnstone and T.C. Downie, published by University of London Press, London, 1961. 186 pages, 13 sh. 6 d. or Rs. 10.80.

This is a very useful book specially for the beginners in analytical chemistry. It provides all the detailed instructions for experimental work at any laboratory bench. The value of these important and significant practical points is enhanced by the clear definitions associated with titrimetric analysis. Part I gives a collection of these together with explanatory examples.

There are nearly a dozen exercises in acidimetry and alkalimetry, sixteen in redox reactions using potassium permanganate, iodine, and ceric sulphate; five argentometric and five complexometric titrations are included in Part II under seven such headings. Several important and standard methods of estimation of reagents are described in Part III under 24 exercises. Techniques and miscellaneous information form Part IV of the book which provides helpful suggestions and directions with reference to the care and use of analytical balances, titrimetric glasswares, recording of results, preparation of indicator solutions, purified water, a list of standard substances, in addition to the dispensing of commercial and toxic solutions and first aid after accidents. It is needless to emphasize the importance of these items for any student of chemistry. It is refreshing to observe that some of the traditional but obsolete techniques, such as the use of external indicator in dichromate titrations and the use of standard soap solutions for the estimation of hardness of water have been omitted. Modern and versatile techniques such as complexometric titrations have been introduced. The book is free from both technical and printing flaws.

This helpful companion will be of immense service in the laboratory to both instructors and students engaged in practical chemistry. Both undergraduate and graduate aspirants can derive full benefit from this little book.

—A. R. V.

**The Design of Chemical Plant in Wiggin High - Nickel Alloys,** published by Henry Wiggin & Co. Ltd., Birmingham, 1961, 101 pages; through Nickel Information Bureau P. Ltd., Bombay.

This monograph presents detailed information on the design of chemical plant fabricated from high-nickel alloys. Nickel and its alloys are finding increasing use in the construction of chemical plant in recent years, and the publication is a welcome addition to the well known and useful literature issued by the publishers from time to time. The subject matter has been presented under: notes on materials, mechanical properties, derivation of design stresses, design calculations, typical design problems in detail, recommended design practice, fabrication, clad materials and lining of vessels. There are 4 appendices incorporating some calculations, and references at the end.

The design data have been well supplemented and illustrated in 23 tables and 63 figures. This volume contains very valuable information on the important aspects of high-nickel alloys in relation to chemical plant and equipment. It is strongly recommended to design engineers and metallurgists.

—T. L. R.

**Metal Industry Handbook and Directory 1962,** published by Illife Books Limited, London, 560 pages, 21 sh.

This is the 51st edition of the hand-book published annually by Illiffe Books Limited. The hand-book covers almost all the aspects of non-ferrous metals and contains information of use to the metallurgists and metallurgical and metal finishing trade. The Directory has been divided into four sections. In the first section, general properties of metals and alloys and compositions are dealt with, including standard specifications on the subject, like BSS, DTD, etc. These specification have been revised and brought up-to-date. In the second section, general data and tables on weights, conversion factors and other physical properties are included.

The third section dealing with electroplating processes, finishing processes like electro-deposition, phosphatising, colouring of metals etc., are described in detail and will be of great use to practical platers. The section on directory of

buyers and other allied information has been enlarged and brought up-to-date. As in the previous editions, the 1962 Directory contains a fund of technical information and will serve as a guide book for those in the field of metal-finishing.

— S. K.

**Interfacial Phenomena**, by J. T. Davies and E. K. Rideal, published by Academic Press, New York and London, 1961, 474 pages, $ 14.

Though research on liquid interfaces has been pursued for a long time, there had been no comprehensive and complete treatment of interfacial phenomena at liquid surfaces up to the present time. The present book fulfills this need and does it eminently so. It covers all aspects of liquid interfaces including electrical phenomena, embracing both the theoretical principles and their applications in a lucid and well blended style.

The authors start with an account of the physical properties of surfaces and interfaces such as, viscosity, surface tension, vapour pressure of surfaces and interfaces and their measurement. The next section consists of two chapters on electrical phenomena at interfaces. A careful and clear account of electrostatic and electrokinetic phenomena at interfaces and the influence of surface effects on these is given. Some sections appear to be very brief, especially the electrical double layer, and they could have been treated in greater detail.

Adsorption at liquid interfaces has been treated under three sections. The thermodynamics, kinetics and the adsorption isotherms are included in one chapter. The various feature of adsorbed layers, which enable one to follow the process of adsorption, are discussed in the chapter on properties of monolayers. This chapter also includes a few typical applications of adsorbed layers. The authors have pointed out the potentialities of the use of liquid interfaces in studying catalysis in the chapter on reactions on interfaces.

The evaporation of liquids and solution of gases and liquids in liquids have been discussed under deffusion through interfaces. The last chapter deals with the importance of interfaces in colloids and in problems connected with detergency and adhesion. The emphasis is more on the stability of disperse systems and physicochemical understanding of this. There are several small sections on friction, detergency, floatation of minerals, etc., which illustrate the role of adsorption in these practical problems. The same symbol with slight difference in type has been used to denote different quantities, and this makes the reading a bit difficult.

The book is written masterfully. Mathematical equations and derivations have only been used wherever necessary. The stress is more on physical interpretation of the phenomena. It is a valuable addition to the literature on liquid interfaces.

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