NEWS SECTION

SOCIETY REPORT

New Members

Associates: (1) D. K. Das, (2) R. K. Madiwale, (3) K. M. Srinivasan, (4) K. P. Radhakrishnan, (5) D. Rajagopalan.

Life Sustaining Member: The Travancore Electrochemical Industries Ltd., P. O. Chingavanam.

Personals

T. L. Rama Char has been elected as a Fellow of the Institution of Metallurgists, London.

GENERAL NOTES

Testing, Instruments and Controls

A new monthly technical journal with the above title is being published by the Non-Destructive Testing Association of Australia effective December 1964. It aims to aid industrial efficiency by publishing instruments, controls and testing techniques available for all phases of production, including laboratory operation.

The Fight against Corrosion

The November 1964 issue of Metal Finishing Journal has published six articles of interest under the above heading: (1) Protection by electroplating, (2) Developments in pretreatments, (3) Protecting by plastic coatings, (4) Protection by paint coatings, (5) Protection by sprayed metal coatings and (6) The future of pre-coated steel sheet: A research point of view.

Symposium on Nickel-Chromium Plating

The Nickel Information Bureau P. Ltd. organised a Symposium on Nickel-Chromium Plating at Bombay on December 14 and 15, 1964. The following papers were read and discussed: (1) Recent developments in nickel plating practice, (2) Nickel plating in cycle industry, (3) Nickel plating in Telecommunication industry, (4) Resistance of nickel-chromium deposits to atmospheric attack and (5) National standards on nickel-chromium electrodeposited coatings. The technical programme was supplemented with an interesting exhibition and a film entitled 'Design for Plating'.

Aluminium in Poland

Increasing use is now being made in Poland of aluminium. In railway transport aluminium alloys are being employed for refrigerator wagons; this reduces the weight of the wagon and the power required to move it. There is also a growing use for mixed steel and aluminium structures, *e.g.*, in the production of wagon wheels with light alloy discs and steel tyres. The automobile industry uses aluminium alloys for the main components of a majority of engines.

Although Poland does not possess high-grade ore deposits, the aluminium industry is well developed, being based principally on Hungarian bauxite. A recent development is the production of 99.99 per cent pure metal—highly resistant to corrosion and also characterized by high electrical conductivity and plasticity, and excellent light reflection.—Corrosion Prevention and Control, Vol. 11, No. 11, 22, 1964.

Corrosion Conference in Australia

The Sixth Annual Conference of the Australasian Corrosion Association will be held in Melbourne during November 1965. It will cover all aspects of corrosion and its prevention with special attention to the transport and general industry.

The British Corrosion Journal

One more addition to the list of U.K. periodicals on Corrosion is 'The British Corrosion Journal' whose first issue will appear in July 1965. This is sponsored by the British Joint Corrosion Group — Iron and Steel Institute, Society of Chemical Industry and Institute of Metals.

Course of Metal Physics

The third in the series of spring courses of the Institution of Metallurgists, London, will be

on 'Some Active Topics in Metal Physics' during April 1965 at the University of Keele, Staffordshire, U. K. The lectures will cover (1) Magnetic materials, (2) Superconductors, (3) Effects of defects on rates of structural change and (4) Recent developments in the study of surfaces.

Chemical Battery with Barium Anode

An electrochemical power source claiming a new high in energy density—up to 70 kwh per cu. ft., including fuel and oxidant, has been studied on a laboratory scale by Kellogg Co. in the U.S.A. Its fuel is very unusual: solid metallic barium, present as an anode. Oxidant can be either chlorine or air, supplied at a cathode of carbon or silver respectively. The system looks more suitable for military uses, where cost is secondary, than for commercial ones. It operates at ambient temperature and pressure. At a current density of 300 asf the operating voltage is 3.5 v with chlorine or 2.65 v with air. Current densities as high as 1000 asf are possible, the voltage being about 0.8 v.-Chem. Engg, Vol. 71, No. 24, 81, 1964.

Materials of Construction Report

The November 9, 1964 issue of Chemical Engineering has published the 21st Biennial Report on Materials of Construction in 3 sections; plastics for process equipment, directory of materials manufacturers, and available current literature on materials.

Aluminium and Corrosion

There are several papers on aluminium of special interest to corrosion scientists and technologists in the November 1964 issue of Materials Protection: (1) Cathodic protection of aluminium, (2) Effects of cathodic currents on aluminium alloy corrosion, (3) Corrosion fatigue of aluminium alloys, (4) Evaluation of anodic coatings by impedance measurements, (5) Corrosion resistance of aluminium and zinc alloys in aqueous solutions, (6) Using aluminium alloys in construction materials, (7) How effective are aluminium anodes in sea water? and (8) Refinery experience and testing of aluminium condenser tubes.

Reference Blocks for Comparing Surface Finishes

To provide engineers with a means of seeing, feeling and comparing various types of surface finish, use is being made in several countries of surface roughness reference blocks. In view of the economic and technical difficulties involved in the production of these blocks by conventional methods, the blocks have been electroformed in nickel in France, using a single permanent matrix as a master. Using modern nickel plating electrolytes such as sulphamates to give ductile, finer grained deposits, blocks are being electroformed with a very high degree of fidelity. For example, the depressions in a honed finish have a mean depth of only 0.06 micron and these are reproduced dimensionally by the nickel deposit. The use of nickel ensures that the blocks are resistant to corrosion and robust, with a surface hardness of about 50 Rockwell C. — Inco-Mond Nickel, No. 9, 9, 1964.

Electrochemistry Seminar at Karaikudi

The Fifth Seminar on Electrochemistry was held at Karaikudi during January 1965 by the CECRI. Technical sessions discussed 114 papers covering: aluminium; electrode kinetics, electrochemical equilibria and electroanalysis; corrosion; electro-organic and inorganic products; electrothermics and electrometallurgy; electrodeposition and metal finishing; batteries. Abstracts of the papers have been printed by the Institute as a booklet.

Dutch Finishing Exhibition and Conference

The Metal Finishing Conference and Exhibition sponsored by the Dutch Metal Finishing Society took place at Utrecht during October 1964. Representatives from Holland, Germany, Belgium, Sweden, Italy and U.K. participated. Thirteen technical papers on the following topics were discussed: industrial lacquers, nickel plating, electrophoretic paint application, plating plant, finishing of aluminium, polishing, pickling. A brief report is given in Industrial Finishing, December 1964.

Electrochemical Light Cell

An electrochemical light cell that operates off an a.c. source as low as 4 volts has been developed at Bell Telephone Laboratories. It emits a blue light peaking at 4350A for as long as five hours, with a starting power efficiency of 0.2 per cent. The cell uses 9, 10-diphenylanthracene, among other compounds, dissolved in an inert organic solvent containing a supporting electrolyte, tetra-alkylammonium perchlorate. Oxygen and water vapour are excluded, as an a.c. is sent through a pair of platinum, gold or carbon electrodes in the solution. Transfer of electrons between ions of opposite charge formed as the polarity of the electrodes alternates results in the emission of photons.—

Chem. and Engg. News, Vol. 42, No. 49, 37, 1964.

Integrated Fuel Cell

A fully integrated fuel cell that can generate up to 5 kw has been developed at Shell Research Ltd., Liverpool, England. Using methanol as fuel, the unit is completely self-contained and is small enough to fit on a three-quarter ton truck. Holding enough fuel to allow 12 hours continuous operation, the cell has powered an electric hammer for breaking concrete. It has an efficiency of 50 per cent, the over-all value being 25 per cent.—Chem. and Engg. News, Vol. 42, No. 50, 39, 1964.

Corrosion and Protection Association

The Corrosion and Protection Association has been formed in England to embrace all aspects of corrosion and protection science and practice. It will especially strive to bring the latest advances before practising engineers. The Association's official Journal is 'Corrosion Science' published by Pergamon Press.

Electric Furnace Conference

The Iron Steel Division, The Metallurgical Society of AIME sponsored the 22nd Annual Electric Furnace Conference in Buffalo, N. Y., U.S.A. Technical sessions covered: solidification and casting techniques, operating pit practice, melting ductile iron in the electric furnace, production of calcium carbide and phosphorus, high-productivity techniques in electric furnace steel-making, melting of high-quality steel, ferro-alloy production and new operating practices. A list of the titles of the papers presented can be found in Journal of Metals, December 1964.

Stainless Steel Corrosion

Abstracts of 11 papers relating to several aspects of the corrosion of stainless steels have been published in 'Review of Metal Literature', Dec. 1964. They are taken from the publication "Symposium on Stainless Steels", Czechoslovakia, 1963.

NACE Annual Conference

The twentyfirst conference of the National Association of Corrosion Engineers was held at St. Louis, Missouri, U.S.A. during March 1965. Technical sessions covered: chemical cleaning problems, plastics, general corrosion, pipe line corrosion, cooling water corrosion, elevated temperatures, protective coatings, chemical industries, corrosion principles, high purity water, oil and gas production, refining industries, aerospace metals, corrosion inhibitors, marine corrosion, utilities. The programme included educational lectures and a corrosion show.

At the Symposium on Corrosion Inhibitors, V.K.V. Unni and T.L. Rama Char (Bangalore) presented a paper on "Inhibition of the Corrosion of Aluminium in Hydrochloric Acid by n-, di-n and tri-n-Butylamines".

Symposium on Electroplating Industry

The Electrochemical Society of India is planning to arrange a Symposium on 'Development of Electroplating Industry in India' at Bangalore in June 1965. The papers will review the growth of this important industry, with special reference to equipment and chemicals. The main object of the Symposium is to provide a common forum for discussing the latest developments, and infuse quality-consciousness in the plating house suppliers.

New Coins in Australia

While switching-over to the decimal currency effective February 1966, the Royal Australian Mint, Canberra will replace the existing silver florin by coins made of cupro-nickel — 75 per cent copper and balance nickel. By the introduction of nickel into their coinage Australia will be joining an increasing number of countries who have realised the advantage to be gained from using this material either in pure form or as a nickel alloy. Cupro-nickel is now the most widely used coinage—alloy in the world. Countries now minting coins of silver or silver alloys turn to the use of other coinage metals because of the steady growth in the industrial applications of silver as well as the continuing upward pressure on the price.

Corrosion Course in Australia

A Graduate Diploma course in Corrosion Technology has been arranged by the School of Chemical Engineering, University of New South Wales effective 1964. It is designed to fill the needs of those professionals in industry who are placed with the problem of combating corrosion. The course will cover the principles as well as preventive methods.

Invisible Protection for Copper Surfaces

A new series of organic chemicals for the inhibition of staining and tarnishing of copper and its alloys is being marketed by the Geigy

(*Continued on Page* 51)

30. **Some developments in alloy gold plating—**

D. Williams (Metal Finishing J, **11**, 17, 1965). Introduction, description of processes, applications of deposits.

31. **A comparison of the fundamentals involved in polishing metals—**

J. P. Dewar (Metal Finishing J, **11**, 21, 1965). Introduction, mechanical polishing, chemical and electrolytic polishing, applications, deburring, cost of polishing, summary.

32. **Gold plating: which gold to use—**

W. T. Lee (Electroplating and Metal Finishing, **18**, 40 1965). Strongly alkaline, alkaline, neutral and acid gold baths, throwing power, properties of deposits. Three tables and 11 figures.

33. **Electrodeposition of ternary alloys—**

(Miss) M. Sarojamma and T. L. Rama Char (Electroplating and Metal Finishing. **18**, 51, 1965). The electrodeposition of ternary alloys has been reviewed with special reference to types of alloys, plating baths and applications; 78 references.

—T. L. R.

(*Continued from Page* 31)

Co. Ltd. under the trade name Trigard. Processes using these products are effective for the protection of copper and high copper alloy materials at all stages of their life cycle, throughout storage and in service, except in the presence of certain chemicals, like cyanide or ammonia. The method is applicable to copper or brass sheet or castings, domestic boilers and tubing, architectural copper alloys, electrical components, costume jewellery etc. — Industrial Finishing, Vol. 17, 28, 1965.

Nickel enters South Africa's Coinage

The first pure nickel coins minted by South Africa were issued into circulation from January 1965. The new series will replace all the existing silver coins. Nickel is being increasingly used for coinage in many countries in view of the attractive properties and the relative cheapness.— Corrosion Prevention and Control, Vol. 12, 14, 1965.

— T. L. R.