ABSTRACTS

(A) GENERAL:

1. **Solar batteries and agroeconomy of developing nations—**

S. Deb and M. K. Mukherjee (J. Sci. and Ind. Research, **28,** 81, 1969). Review with 2 tables and 23 references.

2. **Storage batteries in India—**

B. S. Kedare (Accumulator, **4,** No. 2, 3, 1969). Introduction, production, diversification, self-sufficiency, the future.

3. **The lead-acid accumulator—12 Servicing of the battery—Part 2—**

R. S. Mani (Accumulator, **4,** No. 2, 10, 1969). Brief Review.

4. **Charging systems for NiCd batteries—**

A. Z. David (IEEE Trans. Ind. Gen. Applic. IGA—**4,** 555, 1968). A discussion of the requirements and problems encountered in designing fast charging systems for nickel-cadmium cells: cell characteristics, charging current power supplies.

5. **Fuel Cells—**

G. J. Womack (Physics Bull., **20,** 271, 1969). Introduction, fuel cells in space flight, other low temperature cells, high temperature cells, applications; 2 figures.

6. **Standards and Corrosion—**

G. H. Edwards (Australasian Corrosion Engg., **13,** No. 3, 13, 1969). Introduction, attention to design, selection of materials, control of environment, preparation of surfaces, non-metallic-mastic and metallic protective coatings, cathodic and anodic protection, test methods; 95 references.

7. **Cathodic protection, corrosion and stray current corrosion of lead—**

J. A. von Fraunhofer and T. S. de Gromoboy (Anti-Corrosion Methods and Materials, **16,** No. 4, 16, 1969). Introduction, protection and over-protection, stray current corrosion; 2 tables, 2 figures and 22 references.

8. **Protection against marine corrosion—**

(Anti-Corrosion Methods and Materials, 16, No. 5, 12, 1969). Surface coating system for sheet steel piling, two-pack oil resisting coating, lead pigments in paints, protective paint coatings, anti-corrosion lining.

9. **Lead corrosion in sea-water—**

J. A. von Fraunhofer (Anti-Corrosion Methods and Materials, **16,** No. 5, 21, 1969). Introduction, corrosion behaviour of lead in sea water, anodic behaviour of lead in chloride solutions, lead alloys in chloride solutions, lead anodes in sea water; 6 tables, 3 figures and 39 references.

10. **Experience of acid-cleaning copper pipes in situ—**

A. C. Kennett (Australasian Corrosion Engg., **13,** No. 4, 5, 1969). Introduction, laboratory experiments, field trials, full scale citric acid cleaning, recommended cleaning procedure, Three tables, 4 figures and 3 references.

11. **The use of copper pipes for potable waters in New Zealand—**

I. K. Walker and G. G. Page (Australasian Corrosion Engg., **13,** No. 4, 13, 1969). Water supplies and reticulation systems, corrosion investigations, deleterious films in copper pipes, stray current electrolysis, importance of specification. Four tables, 6 figures and references.

12. **Mechanism of atmospheric corrosion of steel—a review—**

D. Dasgupta (Brit. Corrosion J., **4,** No. 3, 119, 1969). This review discusses critically the existing hypotheses regarding the mechanism and attempts to correlate the work of various investigators; 28 references.

13. **Designing for corrosion resistance—**

J. Landrum (Chem. Engg., **76,** No. 4, 118; No. 6, 172, 1969). Introduction, crevices; 8 figures and 3 references. Welding procedures, galvanic couples, heat treatments, environment, drainage, velocity, temperature; 14 figures and 4 references.

14. **The corrosion of copper and copper alloys—**

A. K. Moss (Australasian Corrosion Engg.,

13, No. 5, 5, 1969). De-alloying; stress-pitting-atmospheric-sea water—fresh water corrosion; 3 tables, 2 figures and 9 references.

15. **The behaviour of copper in supply waters**—

P. T. Gilbert (Australasian Corrosion Engg., 13, No. 5, 13, 1969). Introduction, normal behaviour of copper, cuprosolvency and green staining, impingement attack, pitting corrosion, factors associated with initiation of pits—water composition—metal, denzincification of brasses; 4 figures and 46 references.

16. **Metals to resist corrosion—the rarer metals**—

B. J. Sunter (Australasian Corrosion Engg., 13, No. 6, 5, 1969). Introduction; classification of rarer metals—light, refractory and noble; properties; 4 tables and 18 references.

17. **Aircraft painting**—

(Industrial Finishing, 21, No. 249, 33, 1969). Investigation into mechanising of adhesion and causes of paint system failures.

18. **Uber einige Fortschritte der Galvanotechnik. 2 Folge**—

H. Bennighoff (Galvanotechnik, 60, 166, 1969). Review on recent advances in metal finishing continued: the more common metals and their electrodeposition; 7 figures and 3 tables.

19. **Wege und Ziele der Prozess—Automatisierung im galvanischen Betrieb**—

H. W. Lieber (Galvanotechnik, 60, 180, 1969). Recent developments in the automation of electroplating processes are discussed; 20 figures and 1 table.

20. **Gold plating—yesterday and today**—

D. G. Foulke (Metal Finishing, 67, No. 4, 50, 1969). Introduction, solution chemistry, new developments; 16 references.

21. **Anodized coatings on aluminium and its alloys Part II—Process control**—

L. F. Spencer (Metal Finishing, 67, No. 4, 70; No. 5, 53, 1969). Introduction, preparatory treatments, anodizing equipment; 2 tables. Handling the parts, alloys and oxide coatings, colouring process, sealing. Seven figures, 8 tables and 8 references.

22. **High Speed chromium plating**—

D. S. Tandon and B. B. Basu (NML Tech. J., 11, No. 2, 21, 1969). Electroplating of chromium from solutions containing fluorides gave higher current efficiencies than the conventional sulphate solutions. Catalysts like calcium sulphate or carbonate and strontium sulphate give high efficiency. Nine tables and 6 references.

23. **A review of effluent treatment systems**—

W. Lowe (Metal Finishing J. 15, 103, 1969). Introduction, batch and continuous flow treatment, integrated treatment systems, ion exchange recirculation systems.

24. **Advances in coating materials and techniques**—

R. H. Chambers (Industrial Finishing, 21, No. 251, 27, 1969). Introduction, nylon properties, additives and mixtures, electrostatic spraying.

25. **Recent developments in platinum metal plating**—

F. H. Reid (Metal Finishing J., 15, 124, 1969). Plating of palladium, ruthenium, iridium and alloys. Two tables, 1 figure and 16 references.

26. **Measuring the surface aspects of anodized light alloy products—Part 1, 2**—

C. Drapier and P. Lelong (Metal Finishing J., 15 134, 168, 1969). General characteristics, description, properties and use of the reflector-diffusometer. Four tables, 11 figures and bibliography.

27. **Ion exchange for the metal products finisher—Part 1, 2, 3**—

R. Kunin (Products Finishing, 33, No. 7, 66; No. 8, 71; No. 9, 182, 1969). Ion exchange operation, equilibrium, kinetics and applications. Chemistry of an ion exchange resin, chromium wastes. Mixed wastes, noble metals, mechanics of ion exchange, trouble shooting.

28. **How to prepare metal surfaces for electropainting**—

K. I. Saad (Products Finishing, 33, No. 8, 46, 1969). Introduction, cleaning, conversion coatings—ferrous and non-ferrous metals, post-treatment of the conversion coating.

29. **Das verhalten des wasserstoffs beider galvanischen abscheidung von metallen**—

E. Raub (Galvanotechnik, 60, 348, 1969). Similar to the simultaneous deposition of 2 metals, the codeposition of hydrogen with metal results in the formation of solid solutions or hydrogen compounds. It is shown that for this alloy formation with hydrogen during electroplating the same rules apply as for the ordinary alloy deposition.

30. **Structural abnormalities of electrodeposited copper cadmium alloys**—

P. K. Krishnamurthy, P. G. Mukunda and S.C. Sircar (J. Sci. Engg. Research, 13, pt 1, 61, 1969). Lattice parameters of deposits obtained from fluoborate-tartrate bath were determined by X-ray powder technique. The solid solubility of cadmium in copper in these is very high compared to those thermally made. The lattice parameter varies linearly with cathode potential, and lattice distortion is present in all cases. Two tables, 3 figures and 4 references.

31. Some production plating problems and how they were solved. Part 21—

E. W. Hoover (Plating, 56, 61, 1969). Adhesion of bright nickel to copper, pitting and roughness in nickel plate, white spots in decorative chromium, dull zinc. **Part 22,**—I. Cross (*ibid.* 56, 293, 1969). Anodes—bipolar action, barrel plating, rusting of stainless steel, peeling on brass, plating on steel.

32. Analytical control in electroplating technology—

H. A. Heller (Plating, 56, 277, 1969). Introduction, plating bath composition—X-ray and optical emission spectroscopy, plating thickness—X-ray emission spectroscopy beta backscatter composition. Seven tables, 11 figures and 33 references.

33. Controlled electron beam co-deposition of copper-nickel films—

M. Oron and C. M. Adams (J. Materials Science, 4, 252, 1969). Controlled and, to some extent, reproducible codeposition of copper-nickel films using a 1.2 kw electron beam oscillated at frequencies higher than 100 cps between equal area sources, is practically confined by the following experimental limits: dwelling times ratio, $t_{Cu}/t_{Ni}=0.5—2.0$; rate of deposition $=10—15$ A/Sec; composition 5—40 per cent copper. Three figures and 11 references.

34. Disposal of cynaide waste water from electroplating plants by continuous electrolytic chlorination—

V. Ruml and M. Topinka (Vol. Hospod, Czechoslovakia, **18,** 205, 1968); Zinc Abstracts, **27,** 155, 1969. The procedure is based on chlorination by chlorine which is formed by the electrolytic decomposition of sodium chloride mixed with the water. The basic unit of the apparatus is reported to successfully treat 30 l/hr of water containing up to 1 g/l potassium cyanide.

35. Production experiences in electrodeposition of paint—

(Products Finishing, **33,** No. 9, 57, 1969). Detailed description of the electropainting system of the Federal Pacific Electric Co. in the U.S.A. The steps in the process, flowsheet and costs.

36. Electroplating for automotive applications—

S. E. Beacom (Products Finishing, 33, No. 9, 130, 1969). Question and answer interview report: quality and durability, evaluation of finishing techniques, microcracked chromium, bright copper and nickel, plated plastics, miscellaneous topics.

37. How electroplating is changing—

(Products Finishing, **33,** No. 9, 138-180, 1969). Products finishing staff report, presenting a summary of some of the developments that have been affecting the finishing industry in recent years, and predictions of trends for the future.

38. Now a non-cyanide cadmium—

(Products Finishing, **33,** No. 9, 194, 1969). Description of a new chloride-based solution which deposits cadmium suitable for decorative finishes and in engineering application, and has less tendency to produce hydrogen embrittlement.

39. Addition agent for platinum plating—

K. S. Indira, S. Sampath and K. S. G. Doss (Metal Finishing, **67,** No. 5, 44, 1969). Effect of cetyltrimethylammonium bromide in the alkaline platinate solution. Two tables, 13 figures and 4 references.

40. Research study of performance of various plated plastics—

W. P. Innes (Electroplating and Metal Finishing, **22,** No. 5, 29, 1969). Electroplated ABS and polypropylene are tested comparatively and with identifical plate composites, for adhesion, resistance to humidity, thermal cycle, outdoor exposure and CASS, results being discussed in terms of the functional behaviour of plated plastics. Four figures and 4 tables.

41. Diffusion coatings for the protection of iron and steel. Part 2. Chromium—

R. Drewett (Anti-Corrosion Methods and Materials, **16,** No. 6, 10, 1969). Application methods, composition and structure, corrosion and oxidation resistance; 4 tables, 12 figures and 86 references.

42. Purification of plating solutions—

D. G. Foulke (Metal Finishing, **67,** No. 6,

99, 1969). Introduction, cyanide and acid bath contamination; 3 tables and 4 references.

43. Einfluss von metallverunreinigungen bei glanznickel-niederschlagen—

G. Stahl and P. H. Wild (Galvanotechnik, **69,** 429, 1969). Tests have shown that even low-concentrations of zinc and copper have a detrimental effect upon the properties of bright nickel electrodeposits and their corrosion resistance. The magnetic properties in particular and strongly impaired by iron as a contamination; 12 figures and references.

44. Hot-dip galvanizing—plant and processes—

(Metal Finihsing Journal, **15,** 247, 1969). Introduction, cleaning, fluxing, galvanizing, bath composition and heating, sheet-wire-tube galvanizing, properties of the coating; 3 figures and reference.

45. Anodizing of zinc die castings—

(Zinc Alloy Die Casting News, No. 8, 9, 1969). A new four-colour family of anodized finishes for zinc provides an inexpensive, high-quality coating with excellent corrosion resistance. A brief description of the process and possible applications are discussed.

46. Structure and properties of electro-deposited tin-lead alloys—

W. Riedel (Metalloberflache, **23,** No. 2, 42, 1969). Deposits, of interest in printed circuitry, were obtained in the vicinity of the eutectic composition—62 per cent tin. Examination by X-ray diffraction, electron microscopy and other methods revealed no fundamental differences between electrodeposited alloys and those produced by thermal crystallization. One table, 4 figures and 3 illustrations.

47. Ultra violet curing of polyster finishes—

(Industrial Finishing, **21,** No. 253, 8, 1969). Description of the new technique demonstrated in England for applying base coats to wood substrates; introduction, high or low pressure pumps, application technique.

48. Tin in printed circuits—

(Industrial Finishing, **21,** No. 253, 31, 1969). Hot tinning and mass soldering techniques, abrasive contamination, choice of coating, solderability testing.

49. Preparation of a zinc-nickel alloy from a sulphate electrolyte in the presence fof complexon III—

St. Mermerski and A. Angelova (Himija i industrija, **40,** No. 6, 253, 1968); Abs. Bulgarian Sci. Literature, Chemistry, No. 2, 34, 1968. A zinc-nickel alloy containing up to 20 per cent nickel was obtained from a sulphate electrolyte in the presence of complexon III—sodium salt of EDTA. The nickel content in the layer increases with pH, temperature of the solution and current density, and decreases with increase in the zinc and nickel concentrations from 0.3-1 g. eq./litre. The utilization of the current increases with the pH, temperature and zinc concentration, and decreases with the increase of the nickel and additive concentration; it reaches a maximum in the current density range investigated. Seven figures and 17 references.

50. Investigation on the mechanism of electro-deposition of water-soluble resin—

Y. Nakamura, S. Ando and H. Nozaki (J. Electrochem. Soc., Japan, **37,** No. 1, 13, 1969). The phenomena on the deposition of potassium salt of poly-methacrylic acid-methylmetha-crylate were investigated from the viewpoint of the mechanism. The efficiency of the process was 75 per cent, and the potential-time curves at various pH values were studied at constant current deposition. Two tables, 5 figures and 10 references.

51. Production of carbon disulphides: a general review—

S. R. Reddy, A. K. Gayen and S. C. Naik (Chem. Age of India, **20,** 497, 1969). Review with 2 tables, 1 figure and 97 references.

52. 1968 Review of iron and steel production and technique in Japan—

T. Yamaoka (Trans. Iron and Steel Institute of Japan, **9,** 172, 1969). Introduction, production, technology, equipment, expectations for 1969; 8 tables.

53. Metallurgy and materials Science—

M. N. Dastur (Trans. Ind. Inst. Metals, **22,** No. 1, xiv ,1969). Metallurgists and new technology, new materials, steel industry, titanium, high purity materials, computer, emergence of materials science, integration between science and technology.

54. Preparation of cobalt-rare-earth alloys by electrolysis—

E. Morrice and coworkers (J. Metals, **21,** No. 1, 34, 1969). High purity alloys of cobalt and rare-earth metals were produced by electrodeposition of rare-earth metal from fluoride on a consumable cobalt cathode. Five tables, 2 figures and 8 references.

55. **Application of electrometallurgy in processing of minerals—**

J. B. Rosenbaum (J. Metals, **21,** No. 3, 18, 1969). Brief review with 2 tables on energy consumption and cost.

56. **Highlights in the history of manganese—**

M. Schofield (Metallurgia, **79,** 186, 1969). Mining start, separation, the metal in metallurgy, manganese steels, manganese metal.

57. **Economic aspects of recovery of minerals from effluents—**

W. Teworte (Chemistry and Industry, No. 18, 565, 1969). Introduction, by-product and material recovery characteristics of the chemical industry; 1 table, 8 figures and 30 references.

58. **Recent developments in hydrometallurgy—**

A. R. Burkin (Chem. and Process Engg., **50,** No. 2, 79, 1969). Introduction, pressure processes, Sherritt Gordon process, treatment of laterites, purification processes, sulphur from sulphides; 11 references.

59. **The ocean; world mineral storehouse—**

C. Hanson and S. L. N. Murthy (Chemistry and Industry, No. 21, 669, 1969). Introduction, economics of chemicals recovery, breakeven concentration, limitations; recovery processes—potassium, bromine, boron, lithium, iodine, miscellaneous; 5 tables and 117 references.

60. **Use of the bipolar powder electrode in the coupled electrochemical production of zinc and manganese dioxide—**

W. Tomassi and S. Duraj (Przemysl Chem., Polland, **47,** 692, 1968); Zinc Abstracts, **27,** 158, 1969. The coupled electrolysis of manganous sulphate and zinc sulphate solutions at 60°C. was shown to yield good quality metallic zinc and gamma-manganese dioxide in amounts of 1 and 1.15 kg respectively. The energy concumption was low, 2.62 kwh. A bipolar carbon powder electrode was used, which incorporated platinum and silver catalysts. Consamination of the electrolyte was very slight.

61. **Thermodynamic properties of molten aluminium-zinc solutions—**

G. I. Batalin and E. A. Beloborodova (Izv. Akad. Nauk S.S.S.R. Metal, No. 4, 194, 1968); Zinc Abstracts, **27,** 148, 1969). The EMF technique was used to calculate the entropy, enthalpy and other characteristics of the alloys. The solutions exhibited slight positive deviations from the law of ideal solutions. The heat of mixing determined by the above method was in agreement with that obtained calorimetrically.

62. **Coins and coining Part 2—**

D. R. Cooper (Copper, **3,** No. 3, 14, 1969). Modern mints, the manufacturing processes, modern die work, strip for blanks, future development; illustrations and table.

63. **Electrolytical extraction of zinc from its sulphuric acid solutions in the presence of surface-active additives at high current density—**

I. Encev and I. Pisnukov (Sbornik. naue. tr. NII cv. metallurgija, Plovdiv, **5,** 51, 1967-1968); Abs. Bulgarian Sci. Literature, Chemistry, No. 2, 30, 1968. During the electrolytic extraction of zinc at high current density, the organic additives uranine and bone-glue were most favourable. One figure, 2 tables and 2 graphs.

64. **Big changes coming in electrolysis—**

(Canadian Chem. Processing, **53,** No. 2, 29, 1969). Better electrolytic cells now are available for chloralkali and chlorate plants, and new types of cells are being developed to make hydrogen from steam and to upgrade heavy water. Here is a report from Canada, with illustrations.

65. **Techno-economic considerations of common electrochemical industries—**

K. Narayanan, PL. Annamalai and R. Srinivasan (Chem. Ageo of India, **20,** 600, 1969). Introduction, investment and turn-over, general considerations, capital, power, raw materials, labour, cost reduction; 3 tables and 11 references.

66. **Electron spin resonance—some recent applications—**

K. J. Standley (Physics Bulletin, **20,** 141, 1969). The basic ESR phenomena, applications; 5 figures and bibliography.

67. **Magnetic double-resonance techniques in chemistry—**

W. McFarlane (Chemistry and Industry, **5,** 142, 1969). Introduction, double resonance, experimental methods, heteronuclear decoupling, signs of coupling constants, coupling with low-abundance nuclei; 8 figures and 26 references.

68. **Nuclear magnetic resonance at high fields—**

J. K. Becconsall and M. C. McIvor (Chemistry and Industry, **5,** 147, 1969). Why a high field, the spectrometer, operation of the magnet

system, performance, applications, future prospects; 1 table, 8 figures and 9 references.

69. **Amalgam polarography**—

E. Hrabankova and J. Dolezal (Chem. Listy, Czechoslovakia, **62**, No. 10, 1164-1193, 1968); Zinc Abstracts **27**, 99, 1969). The theoretical and practical aspects of amalgam polarography are reviewed. Polarographic methods for the determination of zinc, cadmium, lead and other metals are considered, and data on the analytical procedures are tabulated. Seven figures, 3 tables and extensive bibliography.

70. **Non-destructive thickness measurement**—

(Industrial Finishing, **21**, No. 251, 22, 1969). Practical applications of magnetic, eddy current and beta-ray backscatter methods; 9 figures.

71. **Ions and ion pairs**—

M. Szware (Accounts of Chem. Res., **2**, 87, 1969). Introduction, role of solvent, structure of ion pairs, physical and chemical evidence for two types of ion pairs, solvation of ion pairs by external agents—isomeric ion pairs, propagation of anionic polymerization. One table, 11 figures and 34 references.

72. **The effect of adsorption on electrode processes**—

J. Kuta (Record Chem. Progress, **29**, 231, 1968). Discusses the influence of foreign electrochemically inactive substances on electrode processes occurring at the DME. One table, 6 figures and 34 references.

73. **Kinetics and mechanism of metal-ion complex formation in solution**—

A. McAuley and J. Hill (Quarterly Reviews, **23**, No. 1, 18-36, 1969). Review with 2 tables, 2 figures and 113 references.

74. **Progress in analytical chemistry of non-aqueous solutions**—

L. N. Bykova and coworkers (Russian Chem. Reviews, No. 4, 278-297, 1968). Review with 588 references.

75. **Water as a Semiconductor**—

V. N. Maslov and Yu. A. Zotov (Russian, Chem. Reviews, No. 4, 310, 1968). Analogy, between semiconductors and aqueous solutions of electrolytes, theory of protonic semiconductors, semiconductor devices based on water, prospects of further work: 6 figures and 30 references.

76. **The concept of electronegativity. Conclusions and prospects**—

S. S. Batsanov (Russian Chem. Reviews, No. 5, 332-351, 1968). Review: introduction, methods for the determination of electronegativity, scope of the application of the concept; 17 tables and 158 references.

77. **Application of electron spin resonance in chemical kinetics**—

Ya. S. Lebedev (Russian Chem. Reviews, No. 5, 402-420, 1968)l Review: introduction, analysis of ESR spectra, study of the kinetics and mechanism of chemical reactions by the ESR method: 16 figures and 115 references.

78. **Some electrochemical properties of mercury**—

E. F. Speranskaya and T. G. Pokhvalitova (Russian Chem. Reviews, No. 9, 710, 1968). Review: electrocapillary phenomena, equilibrium potentials, kinetics and mechanism of electrochemical oxidation, reducing properties; 2 figures and 65 references.

79. **Dipole moments and the structure of phi-complexes of metals**—

A. D. Garnovskii, O. S. Osipov and V. I. Minkin (Russian Chem. Reviews, No. 10, 763-779, 1968). Review with 3 tables and 298 references.

80. **Nuclear magnetic resonance in radicals and in radical reactions**—

A. L. Buchachenko and N. A. Sysoeva (Russian Chem. Reviews, No. 10, 798, 1968). Review with 8 tables and 61 references.

81. **Methods of thermoknetic analysis of chemical reactions**—

V. S. Livshits (Russian Chem. Reviews, No. 10, 812, 1968). Review with 2 tables and 50 references.

82. **Laser applications invade production field**—

J. L. A. Simpson (Science and Engineering, **22**, 104, 1969). Introduction, specifications and characteristics, application techniques, useful effects, operating elements; elements and practical application of the laser, with sketch.

83. **The science of tribology. Part I**—

J. P. Quayle (Copper, 3, No. 3, 10, 1969). Introduction with reference to copper alloys; low friction applications—compatibility, compressive strength, fatigue strength, temperature endurance, corrosion resistance, deformability, low shear strength, future development; 1 chart, 2 illustrations and references.

84. **Modern aspects of the researches on electrode processes in Japan**—

S. Toshima (J. Electrochem. Soc. Japan, 37, No. 1, 1, 1969). Review: introduction, electrochemical measurements, interfacial properties on electrode, gas electrode reaction, electrode process concerning corrosion and batteries, electrode process of organic substances. One table, 7 figures and 104 references.

—T.L.R.

(B) ELECTRO-ORGANIC CHEMISTRY

1. **A. C. Polarographic behaviour of a mixture of reducible organic species in aqueous and methanolic medium—**

S. K. Sharma and M. K. Chatterjee (Chem. Age of India, **20,** 516, 1969). Simultaneous estimations of organic reducible species are possible at neutral or alkaline pH values within specified concentration ranges; p-nitrophenol, m-nitroanaline, benzaldehyde. Nine figures and 5 references.

2. **Electrochemical synthesis of pyrazines—**

S. H. Wilen and A. W. Levine (Chemistry and Industry, No. 8, 237, 1969). Electrolysis of ketones in aqueous ammoniacal solutions of potassium iodide produces pyrazines in low yield; 6 references.

3. **Effects of electrical discharges on the chloromonosilanes—**

J. E. Drake and N. P. C. Westwood (Chemistry and Industry, No. 1, 24, 1969). Investigation of the effect on halogenated silanes and germanes of an ozoniser-type silent electric discharge and formation of disilane, tri- and mono-silane derivatives.

4. **Some aspects of electro-reduction of quaternary ammonium salts in liquid ammonia solutions—**

J. T. Wrobel and A. R. Krawczyk (Chemistry and Industry, No. 20, 656, 1969). Measurement of cathode potentials during electrolysis; 7 references.

5. **Literature of industrial electrochemistry of non-metals and electro-organic chemistry—**

J. B. Haglind (Adv. Chem. Ser., No. 78, 24, 1968). Compilation of selected bibliography.

6. **Redox potential of the pyritinol—5'-thiopyridoxine system—**

R. Naumann (Z. Naturforsch A, **23,** No. 12, 2112, 1968). Eo of the system was found to be 0.08 volt, and the reduced form was generated first by cathodic reduction of some of the other.

7. **Electrode reactions of organic compounds—**

R. A. Marcus (Discuss. Faraday Soc., No. 45, 7, 1968). The theoretical basis for the division of reactions into weak-overlap electron transfers and very strong-overlap electron, atom, and proton transfers is given; 13 references.

8. **Anodic oxidations of aromatic amines III. Substituted anilines in aqueous media—**

J. Bacon and R. N. Adams (J. Amer. Chem. Soc., **90,** 6596, 1968). The anodic oxidation of a series of para-substituted anilines in aqueous media revealed a common pattern of para-group elimination and head-to-tail coupling to give 4'—substituted 4 aminodiphenylamines.

9. **Electrochemical reduction of aromatic carbonyl compounds by means of the rotating ring-disk electrode II. Cathodic reduction of benzaldehyde over a wide pH range—**

L. N. Nekrasov and A. D. Korsun (Elektrokhimiya, **4,** 996, 1968); Chem. Abs., **70,** 8387, 1969. The reduction over the pH range 0-13.5 was investigated polarographically by using a rotating ring-disk electrode made of amalgamated gold. Polarization curves were analyzed in order to study the complex formed during the reduction.

10. **Mechanism of anodic cyanation—**

L. Eberson and S. Nilsson (Discuss. Faraday Soc., No. 45, 242, 1968). The mechanism of the anodic cyanation of aromatic compounds was investigated by determining isomer distribution. The reaction has the general characteristics of an homogeneous electrophilic substitution process, being highly selective with regard to attack at the ring positions in monosubstituted aromatic substrates.

11. **Organic synthesis by electrolysis II. Anodic methoxylation of isocyanide—**

T. Shono and Y. Matsumura (J. Amer. Chem. Soc., **90,** 5937, 1968). The anodic methoxylation of cyclohexyl isocyanide was studied.

12. **Kolbe electrode process at the platinum anode in aqueous butyrate solution—**

K. Chida and T. Sekine (Denki Kagaku, **36,** 442, 1968); Chem. Abs., **70,** 16501, 1969. The mechanism of the anodic reaction on platinum electrode in butyrate solution was investigated