

ABSTRACTS

DEPARTMENT OF GENERAL CHEMISTRY

1. ELECTRODEPOSITION OF LEAD FROM THE PYROPHOSPHATE BATH. J. Vaid and T. L. Rama Char, *J. Electrochem. Soc.*, 1957, **104**, 460.

The complex lead pyrophosphate bath has been found to be satisfactory for lead plating over a wide range of experimental conditions. Gelatin improves the quality of the deposits.

2. ELECTRODEPOSITION OF TIN ALLOYS FROM THE PYROPHOSPHATE BATH. J. Vaid and T. L. Rama Char, *J. Sci. Ind. Res.*, 1957, **16 A**, 324.

Results of detailed studies on the electrodeposition of alloys of tin with copper, zinc, nickel and lead from the pyrophosphate bath have been summarised. The plating characteristics under optimum conditions have been given for each alloy. Structure of the deposits and anode behaviour have been touched upon.

3. BRASS PLATING FROM THE PYROPHOSPHATE BATH. Miss Vasanta Sree and T. L. Rama Char, *J. Sci. Ind. Res.*, 1957, **16 A**, 325.

The pyrophosphate bath has been found to be suitable for brass plating. The effect of variation of *c.d.* and copper content of the electrolyte on alloy deposit composition and cathode potential has been shown in a table. The effect of the other variables has been summarised.

4. COPPER PLATING FROM THE PYROPHOSPHATE BATH—I. S. K. Panikkar, R. P. Singh and T. L. Rama Char, *Bull. India Section, Electrochem. Soc.*, 1957, **6**, 69.

The optimum conditions have been established for the electrodeposition of copper on steel from pyrophosphate solutions. The bath performance is satisfactory over a wide range of experimental conditions.

5. ELECTRODEPOSITION OF NICKEL ALLOYS FROM THE PYROPHOSPHATE BATH. S. K. Panikkar and T. L. Rama Char, *J. Electrochem. Soc. Japan*, 1957, **25**, E121.

Detailed studies have shown that nickel-copper alloys can be electrodeposited from the pyrophosphate bath over a wide range of plate composition. With increase in *c.d.* an inversion takes place at about 1 amp./dm.², nickel then becoming the nobler metal of the system. Preliminary work indicates that this bath is suitable for the plating of alloys of nickel with cobalt, manganese and tungsten.

6. ELECTROPLATING FROM THE PYROPHOSPHATE BATH—I. ELECTRODEPOSITION OF SINGLE METALS. T. L. Rama Char, *Electroplating and Metal Finishing*, 1957, **10**, 347.

Investigations have shown that tin, copper, zinc, nickel and lead can be satisfactorily plated from pyrophosphate solutions, and the optimum operating conditions have been established in each case. The performance of this complex salt plating bath compares favourably with that of conventional baths and there are certain advantages. Two tables and 29 references.

7. ELECTROPLATING FROM THE PYROPHOSPHATE BATH—II. ELECTRODEPOSITION OF ALLOYS. T. L. Rama Char, *Electroplating and Metal Finishing*, 1957, **10**, 391.

Laboratory scale experiments indicate that pyrophosphate solutions may be successful for the production plating of brass, alloys of tin with zinc, nickel, lead and copper, alloys of nickel with copper, zinc and cobalt, and possibly also for nickel-iron, zinc-iron, tin-cobalt and alloys including some of the less common metals such as manganese, tungsten and molybdenum. Two tables and 15 references.

8. PHYSICO-CHEMICAL STUDIES ON PYROPHOSPHATE COMPLEXES OF BIVALENT METALS. J. Vaid and T. L. Rama Char, *Bull. India Section, Electrochem. Soc.*, 1958, **7**, 5.

Complex formation between the pyrophosphate ion and copper, zinc, tin, lead, nickel and cobalt has been studied in aqueous solutions by potentiometric, conductometric and spectrophotometric methods. The ratio of pyrophosphate to metal, the metal ion concentration and the instability constant of the complexes have been determined. Two tables, 23 figures and 23 references.

PHARMACOLOGY LABORATORY

1. CHEMISTRY AND ANTIBACTERIAL ACTIVITY OF NUT GRASS (*Cyperus rotundus*, L.). S. Radomir, Sukh Dev and M. Sirsi, *Curr. Sci.*, 1956, **25**, 118.

The essential oil of *C. rotundus* and its various components obtained after fractional distillation were tested against several micro-organisms. It was found that cyperone I and II and Cyperol were active against *Staph. aureus*, but the ketonic fraction cyperone was not active.

2. EFFECT OF RAUWOLFIA ALKALOIDS ON SOME ENDOCRINE FUNCTIONS. M. Sirsi, R. Rama Rao and Miss M. Indira, *Curr. Sci.*, 1956, **25**, 15.

The effect of crude total alkaloids of *R. serpentina* and reserpine has shown that the alkaloids have no direct estrogenic action, but cause a prolongation of the di-estrous cycle in rats. The mechanism of action has been discussed.

3. THE AMINO ACID COMPOSITION OF THE CELLULAR PROTEIN OF *Myco. tuberculosis*. N. A. N. Rao and T. K. Wadhvani, *J. Bact.*, 1956, **72**, 12.

Studies on the quantitative amino acid composition of the cellular proteins of *M. tuberculosis* H₃₇R₆ has shown that the cellular proteins of this Mycobacteria shows variations in the amino acid composition with the age of the culture and the nature of the nitrogen source incorporated into the medium. The significance of these findings are discussed.

4. ON THE METHOD FOR THE ISOLATION OF THE PEPTIDE FROM THE CELL HOMOGENATE OF *M. tuberculosis* H₃₇R₆. N. A. N. Rao and T. K. Wadhvani, *Naturwissenschaften*, 1956, **5**, 106.

5. ESTROGENIC ACTIVITY, ANTIBACTERIAL ACTION AND SOME PHARMACODYNAMIC PROPERTIES OF *Cyperus rotundus*, L., Miss M. Indira, P. Suryanarayana Murthy and M. Sirsi, *Jour. Mys. Med. Assn.*, 1956, **21**, 51.

The estrogenic activity of the essential oil from *C. rotundus* shows that the activity is of a very low order. The other fractions of the essential oil had no demonstrable activity. The essential oil has slight spasmolytic activity as shown by the relaxation of the uterine musculature in isolated organ studies. The antibacterial activity has also been reported.

6. THE OCCURRENCE OF SOME ESTROGENIC SUBSTANCES IN PLANTS—I. *Cyperus rotundus*. Miss M. Indira, M. Sirsi, S. Radomir and Sukhdev, *J. Sci. Ind. Res.*, 1956, **15C**, 202.