REVIEWS

The Technique of Radio Design. By E. E. Zepler. (Chapman and Hall, London), 1943. Pp. xii + 311. 21*sh.* net.

Receiver design has now developed into a highly skilled art. Most of the circuits and their peculiarities are patented. In some cases, the design peculiarities are kept so secret that only an expert service engineer can get an idea of such peculiarities after carefully handling the receivers. Consequently, the literature on the subject is scanty and is made available only in the technical pamphlets issued by the manufacturers. The book under review is an attempt to give a very elementary introduction to the subject. It abounds in numerical examples, a feature that is most welcome in books on design.

The book is divided into fifteen chapters dealing with a.c. theory, the different stages of a modern receiver and such peculiarities as selectivity, noise, screening, hum, feed-back, distortion, parasitic resonances, and power supply. There is a chapter on routine measurements and one on fault-finding. The treatment in every chapter is very clear and lucid. The subject-matter of each chapter is most logically and systematically presented. The experience of the author as a research engineer has enabled him to mention a few interesting points in every chapter and this is perhaps the one reason for the reviewer to commend the book. The printing and get-up of the book are excellent.

None of the topics treated in the book comes up for an exhaustive or complete treatment. Many of the chapters are rather defective from the point of view of a design engineer. The materials in chapters on routine measurements and fault-finding will be considered out of date for a book written in 1943. The approach to the whole problem seems to be solely based on the author's experience. This method of handling the problem may be unacceptable. The reviewer may perhaps suggest two alternative methods more universally recognised: (*a*) designing from the point of view of catering to a price market and (*b*) designing from the point of view of high fidelity reception, good selectivity and sensitivity, and easy and systematic servicing. The author has made no attempt to establish distinct criteria for either point of view and follow them up.

S. V. CHANDRASHEKHAR AIYA.

Chromatographic Adsorption Analysis. By Harold H. Strain. (Interscience Publishers, Inc., New York, N.Y.), 1942. Pp. x + 227. 37 Illustrations. Price $3.75.

It was in 1906, that Tswett devised a simple and ingenious method of adsorption analysis which was destined to play an important role in the advancement of many and varied a branch of science. To quote the picturesque language of Tswett, "Like the light radiations in the spectrum, so is a mixture of pigments systematically separated on the calcium carbonate column into its constituents, which can then be qualitatively and quantitatively determined". The method has since been extended to mixtures of constituents which are colourless.

In cases where the orthodox methods of separation, isolation and purification have failed, chromatographic methods have proved successful. The ease, elegance and simplicity of the method and the inexpensiveness of the equipment for carrying cut the technique, are factors which have favoured its extensive employment in various branches of science.

The possibilities of the technique and its application have by no means been fully explored; its applications to industry are still in a stage of infancy. There are still a good number of potentially valuable adsorbents whose adsorbabilities and specificities have yet to be determined, while the fundamental aspects of the method need elucidation.

The volume under review is a valuable contribution to the subject, written by one who has added to the field by his own researches. In a series of nine chapters, the author has covered the entire field; the last chapter is devoted to a discussion of the industrial applications of the method so far known. Practical details of the technique, the choice of adsorbents, solvents and eluants, methods of locating colourless constituents in adsorbed columns, are all discussed in sufficient detail. The volume is a treatise which will not only introduce the investigator to this fruitful technique but also inspire him to achieve greater advances in the practice and application of this method of analysis.

The Indian Sugar Industry. 1942 Annual. Editor: M. P. Gandhi. (Gandhi & Co., Publishers, Fort, Bombay), 1943. Pp. lxvi + 133. Price 5-14-0.

The sugar industry in India is now firmly established as a major industry and is the second largest national industry—second only to the cotton textiles. The protection afforded has been fully utilised to expand it from a moderate size in 1932, when India was a sugar importing country depending upon Java and other places for its requirement of sugar to the extent of ten lakhs tons, to its present status when it can consider exports after meeting her internal demands. But no attempt was made to stabilise the industry and organise it on sound and scientific lines. By-product industries have not been developed. There has been a lack of foresight in not promoting the production of alcohol from molasses. War or peace, to India especially, power alcohol has great potentialities. She has yet to start her automobile industry and she could as well design and manufacture engines for burning alcohol. If the quantity of molasses is insufficient other sources of power alcohol can be developed. Plants for manufacturing rectified spirits and power alcohol need not be imported.

The entire plant can be fabricated in India. A few power alcohol plants have already been constructed in India and are expected to go into operation shortly.

The Indian sugar industry has sprung into prominence suddenly with the loss of the Far Eastern producing centres. India is now free to export sugar by sea. The outstanding feature of the year has been the assumption of control by the Government of the prices and distribution of the total sugar production in British India. The serious position created by the shortage of sulphur is bound to affect the quality of the sugar and consumers must be prepared to take in 'Brown sugar'. Mr. Gandhi has taken great pains in editing the present annual which is the VII volume. It gives a survey of the progress of the industry during the year. Various legislative enactments and Government communiques pertaining to the industry have been included besides numerous useful statistical tables. The present problems of the sugar industry and its future prospects have been discussed including the question of post-war reconstruction, 'the discussion of which seems to be a fashion of the day'. The suggestion to replace cane gur and sugar by the products obtained from the palmyra, thereby releasing a considerable area of good agricultural land for growing food crops, is very interesting. With a little care statements such as '... alcohol being a solvent would take the dust along with it, and it may cause starting trouble' (p. 98) could have been eliminated from the book. The Appendix 1, which is referred to in the Preface and Contents as giving a list of sugar factories in India, is missing. The *Annual* continues to be a most comprehensive and very useful reference book on various aspects of Indian sugar industry.

B. N. DAS.

SCIENCE NOTES AND NEWS

Post-War Reconstruction.—At a meeting of the Central Committee of the All-India Manufacturers' Organisation, Sir M. Visvesvaraya, the President, reviewed the progress of the organisation for the second quarter of the current year. Emphasising the importance of immediately taking up the task of proper post-war planning, he declared that no complete picture of the needs of the country could be presented until they knew in what shape or form and to what extent, political power was to be transferred to them after the war. "Unless full responsible Government is secured", Sir Visvesvaraya said, "there is no prospect of a satisfactory solution of all our major problems". After enumerating certain suggestions for immediate and post-war planning, such as a five-year plan, with a capital expenditure of at least Rs. 1,000 crores for the establishment of heavy and key industries, presided over by a Minister or Member of the Government, collection of proper production statistics, and compulsory mass education, Sir Visvesvaraya added that all his suggestions assumed that a National Government would soon be a *fait accompli*, and that the Reconstruction Committee or its Chairman had been made aware of the intentions of the Government in that respect to guide the Committee in shaping its plans.

With regard to post-war reconstruction, Sir Visvesvaraya said that no consistent policy or activity was noticeable in the attitude of the Government. A Consultative Committee of Economists was appointed in October 1941, along with four or five subsidiary Committees to deal with that question. Within the past few weeks, it was reported that a new Reconstruction Committee composed of members of the Viceroy's Executive Council, who would decide all questions of policy relating to reconstruction, had been set up. The earlier Consultative Committee of Economists seemed to have done no work, and Government had offered no explanation as to why the previous arrangement had broken down.

Concluding, he said, that there was talent in the country, which could be profitably utilised to shape reconstruction. There were more university graduates in India than in all the British Isles. In those circumstances, there could be no justification for not associating representative citizens both with the work of planning, and in the execution of reconstruction policies, so necessary to make them acceptable to the great bulk of the country's population.

Improvement of Livestock.—Addressing the staff of the Imperial Veterinary Research Institute of Izatnagar, H. E. the Viceroy emphasised the importance of Veterinary Research for livestock improvement. He said, "I think you all know how deep has been my concern for the advancement of research work in the veterinary field, ever since I first made an intensive study of India's needs, when I was Chairman of the Royal Commission on Agriculture. As Viceroy for seven and a half years, I have watched your progress with sympathy and interest, and I should like to assure you what very high importance I attach to the work which you are doing." Concluding he declared, "Sound livestock improvement must be based on three major sciences, animal genetics, animal nutrition and animal medicine, all of which are now provided for at Mukteswar and Izatnagar. If individual research workers play their part, there is every reason to anticipate in the not too distant future great advances of lasting importance, and I can think of nothing that is likely to be of greater benefit to the Indian cultivator and to India at large."

Penicillin in Canada.—Canada's Government has approved expenditure for the establishment of plants and equipment in Montreal and Taranto for the production of Penicillin, the new bacteria-killing drug.