BOOK REVIEWS

PHARMACOLOGY, by J. H. Gaddum. Fourth Edition. xviii + 562 (including Index). Oxford University Press, London. 1953. 35s.

The fourth edition of this textbook is very welcome, because the 5 years since the third edition was published have been full of new developments, and students now have to know about some drugs which even their teachers had not heard of in 1948. The additions are numerous and include cortisone and adrenocorticotrophic hormone, disulfiram, new agents for treating paralysis agitans, new anticholinesterases and antihistamines, methonium compounds, cobalamin, radiomimetic drugs, lucanthone, proguanil, aureomycin, chloramphenicol and oxytetracycline; and among remedies which had appeared in the third edition but have now received much fuller treatment are dimercaprol, penicillin and streptomycin. All these have fitted into the general layout previously adopted, so that many of the traditions which the first edition established have been maintained. Most of the older material has been revised where necessary and with advantage, though it seems to the reviewer that some students may find the changes in the section on digitalis do not make a difficult subject easier. The text is 10 per cent. longer than the previous edition, and this is about the rate at which the book has been growing since it first appeared. It is unlikely that the intellectual ability or capacity of the students for whom the book is mainly intended is increasing at the same rate, and it is difficult to see where this logarithmic expansion will lead. Concentration of the subject matter has been beautifully achieved here, and access to it is improved particularly by an increase in the size of the already efficient index; but this concentration means that much necessary information about many of the drugs mentioned has had to be left out. Until we invent new methods of storing and transmitting knowledge, this complaint about textbooks of pharmacology which have been brought up to date without becoming unwieldy will be unavoidable. In the meantime Professor Gaddum has done a great deal to provide both the general principles of pharmacology and a survey of the commoner drugs in a moderate compass.

MILES WEATHERALL.

CHEMICAL CONSTITUTION AND BIOLOGICAL ACTIVITY, by W. A. Sexton. Second Edition. Pp. xxiii + 411 and Index. E. and F. N. Spon, Ltd., London, 1953. 60s.

This edition follows the main plan of the first edition, and, although no new topics have been added, extensive revision of many chapters has been made. The principal changes are as follows. Substantial alterations have been made to the chapter on choline and its derivatives, and the account of *trans*methylation has been extended and brought up to date. Additions have been made to include the new information on the chemistry of antibiotics and the important new antimalarial drugs have been included. Because of recent developments in organo-phosphorus insecticides, the extension and revision of the chapter on insecticides and anthelmintics is to be commended. The chapters dealing respectively with chemical aspects of cancer and plant growth regulators have been rewritten to incorporate the theoretical and practical advances which have been made since the publication of the first edition. The misprints occurring in the first edition have been corrected, while the high standard of printing and binding has been maintained.

The plentiful supply of structural formulæ throughout the book is to be commended, but it is unfortunate that the conventional methods of writing aromatic structures using alternating single and double bonds has not been adopted consistently throughout the book, sometimes different methods of representing aromatic structures being used even on the same page.

The introduction and Part I of the book cover general topics, including structural biochemistry, mechanism of action of drugs, physico-chemical aspects and modification of drugs by living organisms. Part II is devoted to a wide range of brief surveys of specific topics. Despite the confinement of some of the topics to small compass, the clear and concise style of the presentation, and the plentiful supply of leading references, make the book a storehouse of information of value to chemists, biologists, pharmacologists and pharmacists, and to all those even remotely connected with the investigation of compounds with possible actions upon living tissue. A. H. BECKETT.

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fraction, prepared from immune blood, which confers significant protection for 5 weeks. Active immunisation in man has been shown to result in the appearance of circulating antibody at levels exceeding the minimum required for protection, but further work is required to determine whether active immunisation effectively protects against paralytic poliomyelitis, how long the protection and antibody persist and whether active immunisation can be accomplished without risk of harmful effects. G. F .S.

Pyridoxine Deficiency, Convulsions in Infants Due to. C. J. Molony and A. H. Parmelee. (*J. Amer. med. Ass.*, 1954, **154**, 405.) During 1952 and early 1953 reports were received from all parts of the United States of the occurrence of epileptiform convulsions in infants, unassociated with any other signs of illness or laboratory findings indicating an ætiological factor. The infants had progressed normally from birth until, at 8 to 16 weeks, the convulsions occurred, usually several times a day. All the infants had been fed on a particular proprietary food and in all cases the convulsions ceased when they were given another product in part or complete substitution. The trouble appears to have been associated with a change from coconut to palm oil as the source of fat in the food, and a change in the method of sterilisation to a procedure which may have destroyed pyridoxine. Pyridoxine deficiency in infants is characterised by apathy, failure to gain in weight, anæmia and convulsions and is believed to have been responsible for the illness reported. H. T. B.

Pyrogens, Testing for. A. Engelund and P. Terp. (*Arch. Pharm. Chemi.* 1954, **61**, 42.) Rabbits which are given a pyrogen injection every day acquire a certain degree of tolerance, so that their reaction becomes less. After a rest period of some weeks they again react normally. If, however, injections are given only on alternate days, then there is no decrease in the response. It is desirable that the temperature should be read every half hour, otherwise the maximum may be missed. Quantitatively, the best measure of the action is the difference between the maximum temperature reached and the basal temperature immediately before the injection. The temperature of the injection liquid need not be 37° C. if it is isotonic. Although there is a slight difference in the normal temperatures of free and constrained animals, this is so small (0·2° C.) that it is of no significance. G. M.

(ABSTRACTS *continued on p.* 432).

the design of the burner clamp and to the Directors of May and Baker, Ltd., for permission to publish this paper.

REFERENCE

1. Johnson and Ballard, *Quart. J. Pharm. Pharmacol.*, 1946, **19**, 373.

LETTER TO THE EDITOR

Interaction between Chloroform and Ion Exchange Resin to give Carbon Monoxide

SIR,—"De-Acidite FF" is described as a unifunctional highly basic anion exchange resin and is stated to be stable towards all organic solvents and at temperatures up to 60° C. both in aqueous and non-aqueous media[1]. According to Saunders[2] its functional group is quaternary ammonium and hence in its regenerated form the resin contains mobile hydroxyl ions[1].

In the course of experiments aimed at removing sulphonphthalein anions from chloroform solution by means of De-Acidite FF, the column having been first dehydrated with ethanol, the vigorous evolution of gas was observed; the gas was identified as carbon monoxide.

The hydrolysis of chloroform by aqueous sodium hydroxide to yield formate and the dehydration of formates by sulphuric acid to give carbon monoxide are well-known reactions; it is interesting to find both hydrolysis and dehydration occurring together in the presence of the ion exchange resin. This reaction is being studied in greater detail and possible analytical and preparative applications are being considered.

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C. W. BALLARD.
J. ISAACS.
P. G. W. SCOTT.

April 9, 1954.

REFERENCES

1. "Properties of, and Instructions for using Bead Resins, 6." The Permutit Company Limited, p. 4.
2. Saunders, *J. Pharm. Pharmacol.*, 1953, **5**, 569.

(ABSTRACTS *continued from p.* 429).

Racemorphan (Dromoran) Derivatives, Action and Addiction Liabilities of. H. Isbell and H. F. Fraser. (*J. Pharmacol.*, 1953, **107**, 524.) Racemorphan, *dl*-3-hydroxy-*n*-methylmorphinan, is an analgesic drug with an addiction liability equal to morphine. Levorphan (the *l*-isomer) has previously been found to be active and dextrorphan (the *d*-isomer) inactive as analgesic and respiratory depressant. This paper reports the actions of dextrorphan and levorphan, and the methyl derivatives (dextromethorphan levomethorphan and racemethorphan), in human addicts to morphine. 3 to 4 mg. of levorphan, 20 to 30 mg. of racemethorphan and 10 to 20 mg. of levomethorphan injected subcutaneously into former morphine addicts were roughtly equivalent to 30 mg. of morphine in causing euphoria. Effects on temperature, pulse rate and blood pressure were negligible, but respiration was significantly depressed. Levorphan and levomethorphan caused pupillary constriction, while codeine, dextrorphan and dextromethorphan did not. 40 to 60 mg. of racemethorphan orally relieved the withdrawal symptoms of morphine addicts. Levomethorphan was also effective, but dextrorphan and dextromethorphan were not. Both levorphan and levomethorphan had high addiction liabilities, while dextrorphan and dextromethorphan had not. The *l*-isomers therefore account for all the miotic, respiratory and addictive properties. G. F. S.