

The results in Fig. 1 show that the adrenergic blocking agents tested—phenoxybenzamine, phentolamine, pronethalol and propranolol—inhibit the hyperthermic effect induced by desipramine in fully reserpinised rats.

Other experiments we have made show that an infusion of noradrenaline induces a significant increase of body temperature in rats made hypothermic by reserpine.

Since the synthesis of noradrenaline is not impaired by reserpine (Hillarp & Malmors, 1964) our results are compatible with the hypothesis that desipramine increases body temperature in reserpinised animals by increasing the concentration of free noradrenaline at the receptor sites because of the inhibition of noradrenaline uptake.

This mechanism may be also relevant to the explanation of the clinical anti-depressant activity of imipramine-like drugs.

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Istituto di Ricerche Farmacologiche “Mario Negri”,
Via Eritrea, 62,
Milan, Italy.
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A. JORI
S. PAGLIALUNGA
S. GARATTINI

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Book Review

CHEMICAL ASPECTS OF THE AUTONOMIC NERVOUS SYSTEM. By D. J. Triggle. Pp. ix + 329 (including index). Academic Press, London and New York, 1965. 75s.

In Chapters I, II and III (51 pages in all) Dr. Triggle sets out what he considers chemists should know about the workings of the autonomic nervous system and the peripheral connections of striated muscle. In Chapter IV (23 pages) he discusses, in general terms, the interaction of drugs with receptors. The next part of the book (97 pages) is devoted to cholinergic synapses; Chapter V deals with compounds believed to have a presynaptic action at the neuromuscular junction, Chapter VI with compounds which are agonists at acetylcholine receptors, Chapter VII classifies antagonists of acetylcholine, which

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are then discussed in Chapter VIII ("muscarinic receptors"), Chapter IX (receptors in ganglia) and Chapter X (receptors at the neuromuscular junction). Chapter XI is a brief account of compounds which inhibit the synthesis of acetylcholine and in Chapter XII Dr. Triggles speculates about the structure of acetylcholine receptors.

The last section (144 pages) is concerned with adrenergic receptors; the possible cholinergic link in transmission (Chapter XIII), the activity of agonists (Chapter XIV), uptake, storage and release of transmitter (Chapter XV), compounds which affect these processes (Chapter XVI), reversible adrenergic blocking agents (Chapter XVII), irreversible blocking agents (Chapter XVIII), synthesis of catecholamines and inhibitors of synthesis (Chapter XIX), metabolism and inhibitors of metabolism (Chapter XX), speculations about the adrenergic receptor (Chapter XXI) and some general remarks (Chapter XXII).

The choice of material clearly reflects Dr. Triggles's own interests and what he has had to learn as a chemist working on biological problems. In the adrenergic section this makes for some very stimulating reading (especially Chapter XVIII) but in other sections it leads to a slightly unbalanced presentation. For example, considerable emphasis is placed on the presynaptic actions of compounds such as neostigmine (Chapter V) but no account is given of substrates and inhibitors of cholinesterases, although a picture of the active site of acetylcholinesterase appears in the section on the cholinergic receptor (Chapter XII). Again, the account of drug-receptor interaction in Chapter IV is presented almost exclusively from the viewpoint of Ariëns and van Rossum, with which Stephenson's ideas have been, quite incorrectly, equated.

The provision of an adequate biological background for chemists is always a problem with this kind of book. Dr. Triggles has given a full account and chemists who have done no biology may find this fairly heavy going (although pharmacists with some knowledge of physiology may find it useful). At the same time, although the biological processes are discussed in detail, no account is given of the types of experiments which actually lead to estimates of activity and no indication is given of the confidence which can be placed in such figures. The Tables often require more explanation than is given (e.g. Table X.3, is headed "neuromuscular blocking activity", but lists results on the frog rectus, frog heart and cat-blood-pressure and seems to imply that these all indicate neuromuscular blocking activity).

Many of the Figures, too, have been borrowed and retain mystifying letters not referred to in the legend: this appears to have led to the muddling of Fig. III. 1a with Fig. III. 1b. A lack of patience with tedious details is also apparent in the index (which is extremely sketchy) and in incorrect spelling. One of the most unfortunate mistakes is the spelling of A. J. Clark, who appears as "Clarke" in the preface and on pages 52 and 53, as "Clark" on page 59, and as both on page 64.

The aim of the book is to interest chemists in the ways in which drugs affect tissues and to indicate to biologists the types of chemical process which may be involved. Dr. Triggles is clearly qualified to tackle both these problems and both chemists and biologists should find the book stimulating.

R. B. BARLOW