

Edited for the British Pharmacological Society by

W. D. M. Paton (*Chairman*)

S. E. Smith (*Acting Secretary*)

P. A. Nasmyth (*Press Editor*)

Jennifer Maclagan (*Assistant Press Editor*)

N. Ambache

G. W. Ashcroft (co-opted)

R. B. Barlow

J. M. Barnes

J. W. Black

W. C. Bowman

P. B. Bradley

S. Brenner (co-opted)

A. W. Cuthbert

C. T. Dollery

W. S. Feldberg

D. F. Hawkins (co-opted)

F. Hobbiger

J. R. Hodges

Margarethe Holzbauer

D. B. Hope

H. W. Kosterlitz

G. P. Lewis

R. D. Lowe

J. Maddox

J. F. Mitchell

M. W. Parkes

Mary Pickford

H. P. Rang

H. O. Schild

D. F. Sharman

R. S. Stacey (co-opted)

Hannah Steinberg

F. M. Sullivan

J. R. Vane

Editorial assistance is provided by the staff of Nature

Papers will be considered for publication on all aspects of drug action, including chemotherapy.

Manuscripts (two copies) should be sent to Dr. S. E. Smith, St. Thomas's Hospital Medical School, London S.E.1. Authors should consult the suggestions inside the back cover.

Subscriptions. Three volumes of the journal are published annually, each volume containing four numbers. The annual subscription rate is £18.50 in the United Kingdom and Republic of Ireland; \$53.00 U.S.A. and \$57.50 Canada (by air freight; second class postage paid at New York, N.Y.); £16.65 all other overseas countries. Subscriptions should be sent to: Subscriptions Department, Macmillan Journals Ltd., Brunel Road, Basingstoke, Hampshire, England. Alternatively, the journal can be ordered through a subscription agent or bookseller.

Advertisements: Applications for advertising space and rates should be sent to: J. Ashley-Brown, Advertisement Manager, *British Journal of Pharmacology*, Macmillan Journals Ltd., 4 Little Essex Street, London, WC2R 3LF, England. Tel: 01-836 6633.

Copyright © 1971 by the *British Journal of Pharmacology*. All rights of reproduction are reserved in respect of all papers, articles, illustrations, etc., published in this journal in all countries of the world.

BRITISH JOURNAL OF PHARMACOLOGY

The following are some of the manuscripts which will be published in future issues:

ATKINSON, D. C. and HICKS, R.: Relationship between the anti-inflammatory and irritant properties of inflammatory exudate

BALDWIN, D. W. and LESSER, E.: Effect of eserine on the chick biventer cervicis preparation

BARBER, H. E. and BOURNE, G. R.: Distribution kinetics and intestinal absorption of practolol in the rat

CRUNKHORN, PEARL and WILLIS, A. L.: Interaction between prostaglandins E and F given intradermally in the rat

DAS, P. K. and PARRATT, J. R.: Myocardial and haemodynamic effects of phentolamine

FERRY, C. B. and NORRIS, BERYL: Actions of bretylium tosylate at the neuromuscular junction

GOODE, P. G.: An implanted reservoir of morphine solution for rapid induction of physical dependence in rats

LOH, L., SEED, R. F. and SYKES, M. K.: Cardiorespiratory effects of intravenous isoprenaline and salbutamol in dogs

POMEROY, A. R. and RAPER, C.: Pyrrolizidine alkaloids: actions on muscarinic receptors in the guinea-pig

TURNER, D. M.: Metabolism of small multiple doses of (^{14}C) nicotine in the cat

Mechanisms of Toxicity

**Edited by
W. N. Aldridge**

This record of the proceedings of the 1970 Drug Action symposium held in April under the chairmanship of Professor Ginsberg contains the latest results and reviews of this subject given by experts in this field, with contributions from all the major centres for toxicology research in Britain, the United States, Holland, Sweden, Germany, Israel, Canada and Italy.

£5.50 (110s)

Macmillan

PHARMACOLOGIST SENIOR AND JUNIORS

are required for Research and the Screening of Compounds of potential therapeutic importance and in the elucidation of their mode of action and their toxicity. Applicants for the Senior Post must have several years post-graduate experience. Publication of original work encouraged. Excellent opportunities for advancement in modern, well equipped laboratory. Pension and Assurance Scheme. Please apply in confidence to the Managing Director, Biorex Laboratories Ltd., Biorex House, Canonbury Villas, London N.1.

BRITISH JOURNAL OF PHARMACOLOGY

Short Communications

Papers for consideration should be marked "Short Communication", and be submitted in duplicate to the Secretary of the Editorial Board. They must be less than 1,200 words in length and may contain one figure or one table. To reduce publication delay to a minimum (about 6 weeks), correspondence between author and editor must be avoided. Manuscripts should therefore be prepared with great care and the customary form used in the Journal strictly observed (see instructions on the inside covers of a recent issue of the Journal). Short Communications will be accepted on the understanding that if authors' proofs are not returned before the Journal goes to press, the Communication will be published with the Press Editor's corrections only. Communications not accepted for publication will be returned in approximately 2 weeks.

BRITISH JOURNAL OF PHARMACOLOGY

THE INTERNATIONAL SYSTEM OF UNITS (SI)

The British Journal of Pharmacology uses the **symbols** recommended in the SI (Système Internationale) (see *Symbols, Signs and Abbreviations Recommended for British Scientific Publications* (1969) (London: The Royal Society: price 7s.)). It is the policy of the Editorial Board to adopt SI **units**, although the use of certain non-SI units will for the time being be permitted. Full details of the changes involved will be published in a forthcoming "Instructions to Authors". The following is a list (a) of some of the commoner units with their recommended symbols, (b) of some non-SI units which may still be used, and (c) of units which will no longer be acceptable.

(a) SI units with recommended symbols

Unit	Correct symbol
kilogramme	kg
second, millisecond	s ms
mole, millimole, micromole,	mol mmol μ mol
nanomole, picomole	nmol pmol
metre, centimetre, millimetre,	m cm mm
micrometre	μ m
Hertz	Hz

(b) Some permitted non-Si units

ångström	Å (= 10^{-10} m = 0.1 nm)
gramme	g
minute	min
hour	h
molarity (mol/litre)	M
calorie	cal (4.184 J) (Conversion factor to be given as a footnote at first citation or in Methods)
millimetre of mercury	mmHg (1.333 mbar) (Conversion factor to be given as a footnote at first citation or in Methods)
millibar	mbar
poise	P
curie	Ci
litre	l. (where there is danger of confusion between the numeral '1' and the letter 'l', 'litre' should be written in full, and always at the end of a sentence)
millilitre, microlitre	ml μ l
degree Celsius	°C

(c) Units no longer acceptable

inch, foot, pound, pound per square inch, °F.

Expressions such as cycles per second (c/s) will no longer be accepted. Frequencies should be expressed in the appropriate approved symbols: thus a stimulation frequency should be given in Hz (irregular or occasional events should be given per unit time, e.g. s⁻¹, h⁻¹). When there is more than one solidus in an expression, parentheses should be used to eliminate ambiguity, e.g. (mg/kg)/day.

Instructions to Authors

1. **Manuscripts** (2 copies) should be typed in double spacing on one side of paper not larger than foolscap (33×20.5 cm). There should be a separate title page giving the names and addresses of the authors in alphabetical order. A short title containing not more than 40 letters should also be suggested.

2. A **short summary of results and conclusions** (arranged in numbered paragraphs), **tables and legends to figures** should be typed on separate sheets of paper.

3. **References** should be collected at the end of the paper. They should include the authors' names, year of publication, title of article, title of publication (abbreviated in accordance with the fourth edition of the *World List of Scientific Periodicals*), volume number and first and last page numbers. References to books should, in addition, include the names of editors, the edition number, where appropriate, and the town of origin and name of publisher.

4. **Figures** should NOT BE LARGER THAN FOOLSCAP (33×20.5 cm) and may be in the form of original drawings, recorded tracings or high quality photographic prints made from them. Negative prints of kymograph tracings (black on white) should be provided and both ordinates and abscissae should be calibrated.

5. **Lettering** on figures should be inserted in PENCIL. Symbols which are to appear in figures or legends should be chosen from the following:

× + ● ■ ○ □ △ ▲ ▽ ▼ ○ ● ◇

6. **Photographs and photomicrographs** should be printed on glossy paper and should be larger than the size required for reproduction.

7. **Tables** ideally should not have more than 84 characters to a line (counting spaces between columns as 4 characters) and certainly not more than 130 characters to a line, unless absolutely unavoidable.

8. An **abstract** of about 100 words suitable for inclusion in *International Abstracts of Biological Sciences* should be typed on a separate sheet.

General remarks. A recent issue of the journal is a good guide to style. Papers are accepted only if accompanied by a statement that they have not and will not be published in whole or in part in any other Journal.

Two page proofs will be supplied, one of which may be retained by the authors. The other should be corrected immediately and returned to the Press Editor. Corrections should be kept to a minimum.

Fifty reprints will be supplied to the authors free of charge. Additional reprints can be purchased. A reprint order form, which should be returned promptly, will be sent out with the proofs.

page

Systematic Pharmacology

- 171 DEBRECZENI, L. and FENYVESI, T. Effect of β -adrenoceptor blocking compounds (propranolol, practolol and LB 46) on isoprenaline induced changes in regional blood flow in the rat. (SP1)
 177 HAYDEN, J. and TARGETT, MARGARET A. Central components of the renin-angiotensin system. (SP1, AP3)
 187 FOZARD, J. R. Effects of progesterone on cardiovascular responses to amines and to sympathetic stimulation in the pithed rat. (SP1, AP3, DM2)
 198 LEONARD, B. E. and SHALLICE, SUSAN A. Some neurochemical effects of amphetamine, methylamphetamine and *p*-bromomethylamphetamine in the rat. (SP2, PK3, PP1)
 213 FURNESS, J. B. Secondary excitation of intestinal smooth muscle. (SP3, AP1)

Autopharmacology

- 227 BAILEY, DIANA M. Inhibitory and excitatory effects of sympathomimetic amines on muscle strips from the stomach of the guinea-pig. (AP1)
 239 HUGHES, J. and ROTH, R. H. Evidence that angiotensin enhances transmitter release during sympathetic nerve stimulation. (AP1, PK3, SP1)
 256 HELLMANN, G., HERTTING, G. and PESKAR, B. Uptake kinetics and metabolism of 7-³H-dopamine in the isolated perfused rat heart. (AP1, PK3, PK2)
 270 HELLMANN, G., HERTTING, G. and PESKAR, B. Effect of pretreatment with 6-hydroxydopamine on the uptake and metabolism of catecholamines by the isolated perfused rat heart. (AP1, PK3, PK2)
 278 GRAHAM, J. D. P., IVENS, CAROLINE, LEVER, J. D., MCQUISTON, R. and SPRIGGS, T. L. B. In pursuit of the α -adrenoceptor: a fine-structural and electron autoradiographical study using ³H-phenoxybenzamine and smooth muscle from the cat and guinea-pig. (AP1, DM1, DM2)
 285 INOKI, R., KOJIMA, S., TAMARI, Y. and YAMAMOTO, I. Effects of nicotine on salivary amylase secretion from rabbit parotid gland. (AP1, DM2, SP3)
 294 DZODZOE, YAO C. G. and ROSENGREN, ELSA. Decarboxylases of histidine and ornithine in chick embryo. (AP2)
 302 HETTIARATCHI, E. S. G. and PICKFORD, MARY. Effect of catecholamines and angiotensin on extracellular water and cation movements and the effect of α and β -adrenoceptor blockade. (AP3, DM1)
 317 NORTON, P. R. E. Some endocrinological aspects of barbiturate dependence. (AP3, PP)

Drug Mechanisms

- 331 CHRIST, D. D. and NISHI, S. Effects of adrenaline on nerve terminals in the superior cervical ganglion of the rabbit. (DM1, AP1)
 339 BROOKES, N. and MACKAY, D. Rate of onset and offset of neuromuscular block in the isolated rat diaphragm. (DM2)
 344 CRANSTON, W. I., LUFF, R. H., RAWLINS, M. D. and WRIGHT, V. ANN. Influence of the duration of experimental fever on salicylate antipyresis in the rabbit. (DM2, SP2, SP3)
 352 MALIK, K. U. Effect of (\pm) dihydroxy ephedrine and (\pm) dihydroxy pseudoephedrine on adrenergic transmission in mesenteric arteries. (DM2, AP1)
 361 BELISLE, S. and GAGNON, D. J. Stimulating action of catecholamines on isolated preparations of the rat colon and human and rabbit taenia coli. (DM2, AP1, SP3)

Pharmacokinetics

- 367 BROOKES, N. and MACKAY, D. Diffusion of labelled substances through isolated rat diaphragm. (PK3, PK1, DM2)
 379P PROCEEDINGS OF THE BRITISH PHARMACOLOGICAL SOCIETY, LONDON, 7-8 January, 1971. (See pp. iii and v for contents)

Systematic Pharmacology

Cardiovascular system SP1
 Central nervous system SP2
 Other physiological systems SP3

Pharmacokinetics

Storage, distribution, fate PK1
 Synthesis, metabolism PK2
 Uptake, release PK3

Clinical Pharmacology, Experimental Therapy CP

Chemotherapy CT
 Miscellaneous M

Autopharmacology

Adrenergic, cholinergic transmission AP1
 Histamine, kinins, prostaglandins, etc. AP2
 Hormones AP3

Drug Mechanisms

Molecular, cellular, biochemical, biophysical DM1
 Receptors, antagonism, potentiation, tolerance DM2

Pharmacometrics PM
 Psychopharmacology PP
 Toxicology TX