

Edited for the British Pharmacological Society by

W. D. M. Paton (*Chairman*) H. M. Adam (*Secretary*)
P. A. Nasmyth (*Press Editor*)
Jennifer MacLagan (*Assistant Press Editor*)

G. W. Ashcroft (co-opted)	D. B. Hope
R. B. Barlow	H. W. Kosterlitz
J. M. Barnes	G. P. Lewis
J. W. Black	R. D. Lowe
W. C. Bowman	J. Maddox
P. B. Bradley	J. F. Mitchell
A. W. Cuthbert	M. W. Parkes
C. T. Dollery	Mary Pickford
W. S. Feldberg	H. P. Rang
D. F. Hawkins	H. O. Schild
F. Hobbiger	D. F. Sharman
J. R. Hodges	Hannah Steinberg
Margarethe Holzbauer	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. H. M. Adam, Department of Pharmacology, University of Edinburgh Medical School, 1 George Square, Edinburgh EH8 9JZ. 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; \$55.50 U.S.A. and Canada (by air freight; second class postage paid at New York, N.Y.); £18.50 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. Direct line: 01-405 3013.

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

EDITED FOR
THE BRITISH PHARMACOLOGICAL SOCIETY
BY

W. D. M. Paton (*Chairman*) H. M. Adam (*Secretary*)
P. A. Nasmyth (*Press Editor*)
Jennifer MacLagan (*Assistant Press Editor*)

G. W. Ashcroft (co-opted)	D. B. Hope
R. B. Barlow	H. W. Kosterlitz
J. M. Barnes	G. P. Lewis
J. W. Black	R. D. Lowe
W. C. Bowman	J. Maddox
P. B. Bradley	J. F. Mitchell
A. W. Cuthbert	M. W. Parkes
C. T. Dollery	Mary Pickford
W. S. Feldberg	H. P. Rang
D. F. Hawkins	H. O. Schild
F. Hobbiger	D. F. Sharman
J. R. Hodges	Hannah Steinberg
Margarethe Holzbauer	F. M. Sullivan
J. R. Vane	

Editorial assistance is provided by the staff of Nature

VOLUME 43, 1971

LONDON
MACMILLAN JOURNALS LIMITED
4 LITTLE ESSEX STREET, WC2R 3LF

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 author's 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 35p.)). 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, nanomole, picomole	mol mmol μ mol nmol pmol
metre, centimetre, millimetre, micrometre	m cm mm 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)
millimetres 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:
 \times $+$ \bullet \blacksquare \circ \square \triangle \blacktriangle ∇ \blacktriangledown \odot \ominus \diamond
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, giving the author's name and address and the title of the paper.

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.

Twenty-five 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

- 1 BRUINVELS, J. and KEMPER, G. C. M. Role of noradrenaline and 5-hydroxytryptamine in tetrahydroanaphthylamine-induced temperature changes in the rat. (SP1, AP1)
- 10 SINGH, B. N. and VAUGHAN WILLIAMS, E. M. Effects on cardiac muscle of the β -adrenoceptor blocking drugs INPEA and LB46 in relation to their local anaesthetic action on nerve. (SP1, AP1, DM2)
- 23 KOFI EKUE, J. M., SHANKS, R. G. and ZAIDI, S. A. Comparison of the effects of isoprenaline, orciprenaline, salbutamol and isoetharine on the cardiovascular system of anaesthetized dogs. (SP1, DM2)
- 32 CONSTANTINIDIS, J., GAILLARD, J. M., GEISSBUHLER, F. and TISSOT, R. Passage into the rat brain of dopa and dopamine injected into the lateral ventricle. (SP2)
- 39 CURZON, G. and GREEN, A. R. Regional and subcellular changes in the concentration of 5-hydroxytryptamine and 5-hydroxyindoleacetic acid in the rat brain caused by hydrocortisone, DL- α -methyltryptophan l-kynurenine and immobilization. (SP2, DM1)
- 53 JHAMANDAS, K., PHILLIS, J. W. and PINSKY, C. Effects of narcotic analgesics and antagonists on the *in vivo* release of acetylcholine from the cerebral cortex of the cat. (SP2, DM2, AP1)
- 67 BLUM, K., GELLER, I. and WALLACE, J. E. Interaction effects of ethanol and pyrazole in laboratory rodents. (SP2, PP, DM2)
- 74 KOSTERLITZ, H. W. and LYDON, R. J. Impulse transmission in the myenteric plexus-longitudinal muscle preparation of the guinea-pig ileum. (SP3, AP)

Autopharmacology

- 86 KIRPEKAR, S. M. and YAMAMOTO, H. Release of noradrenaline and dopamine by nerve stimulation in the cat spleen perfused with ^3H -dopamine. (AP1, PK3)
- 97 FARNEBO, L.-O. and HAMBERGER, B. Drug-induced changes in the release of [^3H]-noradrenaline from field stimulated rat iris. (AP1, DM2)
- 107 GINSBURG, SARA, KITZ, R. J. and SAVARESE, J. J. Neuromuscular blocking activity of a new series of quaternary N-substituted choline esters. (AP1, DM2)
- 127 LEWIS, G. P. and WAWRETSCHKE, W. A. Effect of thermal injury on the kinin system in rabbit hind limb lymph. (AP2, SP1)

Pharmacokinetics

- 140 CONKLIN, J. D. and WAGNER, D. L. Excretion of nitrofurantoin in dog hepatic bile. (PK1)
- 151 GÜTTLER, F. and TYBRING, L. Interaction of albumin and fusidic acid. (PK1)
- 161 KLAASSEN, C. D. Biliary excretion of barbiturates. (PK1)
- 167 O'REILLY, W. J., PITT, PATRICIA A. and RYAN, A. J. Pharmacokinetic model for the successive demethylation and biliary secretion of methyl orange in the rat. (PK1, PK2)
- 180 BURNSTOCK, G., MCLEAN, J. R. and WRIGHT, MARY. Noradrenaline uptake by non-innervated smooth muscle. (PK3, AP1)

Drug Mechanisms

- 190 D'ARCY HART, P. and PAYNE, SHEILA N. Effects of non-ionic surfactants that modify experimental tuberculosis on lipase activity of macrophages. (DM1, CT)
- 197 COOK, D. A. Blockade by phenoxybenzamine of the contractor response produced by agonists in the isolated ileum of the guinea-pig. (DM2)
- 210 KURAHASHI, K. and SHIBATA, S. Bretylium potentiation of the contractor responses of isolated rabbit aortic strips to potassium and tyramine. (DM2)
- 222 FITZGERALD, J. D. and O'DONNELL, STELLA R. Pharmacology of 4-hydroxypropranolol, a metabolite of propranolol. (DM2, AP1, SP1)
- 236 LEVY, B. and LINDNER, H. R. Selective blockade of the vasodepressor response to prostaglandin $\text{F}_{2\alpha}$ in the anaesthetized rabbit. (DM2, AP2)

Clinical Pharmacology, Experimental Therapy

- 242 SPEIRS, C. F., STENHOUSE, D., STEPHEN, K. W. and WALLACE, EDITH T. Comparison of human serum, parotid and mixed saliva levels of phenoxymethylpenicillin, ampicillin, cloxacillin and cephalixin. (CP, CT, SP3)

SHORT COMMUNICATIONS

- 248 BADOLA, R. P., BHARGAVA, K. P., DIXIT, K. S. and RATRA, C. K. Role of the chemoreceptor trigger zone in cyclopropane induced emesis in dogs. (SP2, DM2, TX)
- 250 BHAGAT, B. and RANA, M. W. Effect of chronic administration of nicotine on the concentrations of adrenal enzymes involved in the synthesis and metabolism of adrenaline. (AP1)
- 252 BAKHLE, Y. S. Inhibition of angiotensin I converting enzyme by venom peptides. (PK2, AP2)
- 255 BREESE, G. R., HOWARD, J. L. and LEAHY, J. P. Effect of 6-hydroxydopamine on electrical self stimulation of the brain. (PP, SP2, AP1)