

Edited for the British Pharmacological Society by

J.F. Mitchell (Chairman)

G.M. Lees (Secretary)

Margaret Day (Press Editor)

EDITORIAL BOARD

N.J.M. Birdsall
London
A.T. Birmingham
Nottingham
A.G.H. Blakeley
Leicester
N.G. Bowery
Harlow
C.M. Bradshaw
Manchester
J.B. Caldwell
London
B.A. Callingham
Cambridge
J.A.J.H. Critchley
Edinburgh
Maureen M. Dale
London
J.C. Foreman
London
M.C. Harris
Birmingham
G. Henderson
Cambridge
C.R. Hiley
Cambridge
R.G. Hill
Cambridge
J.R.S. Hoult
London
P.P.A. Humphrey
Ware
L. Iversen
Harlow
D.H. Jenkinson
London
P.G. Jenner
London
W.E. Lindup
Liverpool
R. McBurney
Newcastle
J.C. McGrath
Glasgow

D.S. McQueen
Edinburgh
C.A. Marsden
Nottingham
R.J. Marshall
Newhouse
D.A.A. Owen
Welwyn Garden City
M.E. Parsons
Welwyn Garden City
Priscilla J. Piper
London
N.L. Poyer
Edinburgh
T.W. Robbins
Cambridge
G.C.K. Roberts
London
T.L.B. Spriggs
Cardiff
T.W. Stone
London
E. Szabadi
Manchester
D.A. Terrar
Oxford
D.R. Tomlinson
Nottingham
E.M. Vaughan Williams
Oxford
R.M. Wadsworth
Glasgow
D.I. Wallis
Cardiff
D.F. Weetman
Sunderland
T.J. Williams
Harrow
G.N. Woodruff
Harlow
J.M. Young
Cambridge

C.V. Wedmore (Assistant Press Editor)

CORRESPONDING EDITORS

P.R. Adams
Galveston, U.S.A.
J. Axelrod
Bethesda, U.S.A.
C. Bell
Melbourne, Australia
F.E. Bloom
La Jolla, U.S.A.
A.L.A. Boura
Clayton, Australia
P.B. Dews
Boston, U.S.A.
T. Godfraind
Brussels, Belgium
L.I. Goldberg
Chicago, U.S.A.
S.Z. Langer
Paris, France
R.A. Lewis
Harvard, U.S.A.
E. Muscholl
Mainz, Germany
M. Otsuka
Tokyo, Japan
R.H. Roth
New Haven, U.S.A.
M. Schachter
Alberta, Canada
S.H. Snyder
Baltimore, U.S.A.
L. Szekeres
Szeged, Hungary
B. Uvnas
Stockholm, Sweden
P.A. Van Zwieten
Amsterdam, Netherlands
G. Velo
Verona, Italy
M.B.H. Youdim
Haifa, Israel

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

The British Journal of Pharmacology is published monthly by the Scientific & Medical Division, The Macmillan Press Ltd, Hounds Mills, Basingstoke, Hampshire RG21 2XS. Telephone: Basingstoke 29242. ISSN 0007 - 1188.

Registered Office: 4 Little Essex Street, London WC2R 3LF.

Manuscripts (two copies) should be sent to Dr G. M. Lees, Editorial Office, University of Aberdeen, Marischal College, Aberdeen AB9 1AS. Authors should consult the instructions inside the back cover.

The journal is covered by *Current Contents* and *Excerpta Medica*.

Annual subscription UK £155.00; USA & Canada, US \$390, Airmail US \$460; Rest of world, £175, Airmail £225 (or equivalent in any other currency). (Orders must be accompanied by remittance. Prices correct at time of publication.)

Cheques should be made payable to Macmillan Journals Limited. All circulation, subscription or general enquiries should be sent to: The Macmillan Press Ltd, Farndon Road, Market Harborough, Leicestershire, LE16 9NR, UK.

Overseas subscribers may make payments into UK Post Office Giro Account No. 519 2455. Full details must accompany the payment.

Second Class postage paid at New York, NY. US Mailing Agent: Expeditors of the Printed Word Ltd, 515 Madison Avenue, New York, NY 10022.

Enquiries concerning advertising space and rates should be addressed to: David R. Guthrie, Advertising Dept., The Macmillan Press Ltd, Brunel Road, Hounds Mills, Basingstoke, Hampshire, England RG21 2XS. Telephone: 0256 29242.

Publisher: Harry Holt.

Production & Editorial Services: Isobel Munday.
Advertising & Promotion Services: David R. Guthrie.

Circulation Services: A.L. Clark.

© Copyright: Scientific & Medical Division, The Macmillan Press Ltd, 1984. All rights of reproduction are reserved in respect of all papers, articles, illustrations, etc., published in this journal in all countries of the world.

Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by The Macmillan Press Ltd for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the base fee of £1.00 per copy, plus £0.10 per page is paid directly to CCC, 21 Congress St., Salem, MA 01970, USA.

0007 - 1188/84 \$1.00 + \$0.10

MEETINGS CALENDAR

12 December 1985

Society for Drug Research Meeting on Senile Dementia of Alzheimer's Disease, London, UK. (Mrs B. Cavilla, Institute of Biology, 20 Queensberry Place, London SW7 2DZ, UK.)

16–17 December 1985

Towards the Classification of 'hormone' Receptors, London, UK. (Mrs Hilary Williams, Analytical Pharmacology, Kings College School of Medicine and Dentistry, 123 Coldharbour Lane, London SE5 9NU.)

18–20 December 1985

British Pharmacological Society, London, UK. (Dr G.N. Woodruff, Neuroscience Research Centre, Merck Sharp & Dohme Research Labs, Terlings Park, Eastwick Road, Harlow, Essex, UK.)

20 December 1985

International Telesymposium on Pharmacological Control of Hyperlipidaemia, Barcelona, Spain. (Prous Science, Aparto de Correos 540, 08080 Barcelona, Spain.)

9–11 April 1986

British Pharmacological Society, Bath, UK. (Dr A.R. Green, MRC Clinical Pharmacology Unit, Radcliffe Infirmary, Oxford, OX2 6HE.)

17 April 1986

Society for Drug Research Meeting on Chemistry and Pharmacology of Dopamine Receptor Agents and Antagonists, London, UK. (Mrs B. Cavilla, Institute of Biology, 20 Queensberry Place, London SW7 2DZ, UK.)

25 April 1986

Meeting on Novel Sites of Action for Psychotropic Drugs, London, UK. (Mrs P.J. Rowden, Dept of Clinical Pharmacology, Wellcome Research Laboratories, Langley Court, Beckenham, Kent, UK.)

26–30 May 1986

International Meeting on Diuretics, Naples, Italy. (Antonio Del Canton M.D., Dept of Nephrology, Second Faculty of Medicine, Via S. Pansini, 80131 Naples, Italy.)

3–6 June 1986

VI International Conference on Prostaglandins and Related Compounds, Florence, Italy. (Secretary, Fondazione Giovanni Lorenzini, Via Monte Napoleone 23, 20121 Milan, Italy.)

8–13 June 1986

3rd Congress of the International Society for Biomedical

Research on Alcoholism, Helsinki, Finland. (Ms Sari Salo, 3rd ISBRA Congress, Alko Ltd, POB 350, SF-00101, Helsinki, Finland.)

1–4 July 1986

International Symposium in honour of Luigi Sabbatani on Calcium Ion: Membrane Transport and Cellular Regulation, Padova-Venezia, Italy. (Dr S. Luciani, Dept of Pharmacology, University of Padova, Largo E. Meneghetti, 2, 35131 Padova, Italy.)

2–4 July 1986

British Pharmacological Society, Amsterdam, Netherlands. (Dr A.R. Green, MRC Clinical Pharmacology Unit, Radcliffe Infirmary, Oxford, OX2 6HE.)

27 July–1 August 1986

III World Convention on Clinical Pharmacology and Therapeutics. (Secretariat, CPT-86, c/o Stockholm Convention Bureau, Box 1617, S-111 86 Stockholm, Sweden.)

1–2 August 1986

3rd Annual Scientific Meeting of the Skin Pharmacology Society, Stockholm, Sweden. (Dr O. Hagermark, Dept of Dermatology, Karolinska sjukhuset, S-104 01 Stockholm 60, Sweden.)

1–5 September 1986

British Association for the Advancement of Science, Bristol, UK. (Contact to be announced.)

10–12 September 1986

British Pharmacological Society, Hatfield, UK. (Dr A.R. Green, MRC Clinical Pharmacology Unit, Radcliffe Infirmary, Oxford OX2 6HE.)

22–26 September 1986

6th European Symposium on Quantitative Structure–Activity Relationships, Porturose, Yugoslavia. (Prof. D. Hadži, Boris Kidrič Institute of Chemistry, POB 30, 61115 Lubljana, Yugoslavia.)

16–17 October 1986

Meeting on the Psychopharmacology of Dependence, London, UK. (Mrs P.J. Rowden, Dept of Clinical Pharmacology, Wellcome Research Laboratory, Langley Court, Beckenham, Kent, UK.)

16 December 1986

Society for Drug Research Meeting on Nucleoside Chemistry and Biology, London, UK. (Mrs B. Cavilla, Institute of Biology, 20 Queensberry Place, London.)

INSTRUCTIONS TO AUTHORS

Whilst every effort is made by the publishers and editorial committee to see that no inaccurate or misleading data, opinion or statement appears in this Journal, they wish to make it clear that the data and opinions appearing in the articles and advertisements herein are the responsibility of the contributor or advertiser concerned. Accordingly the publishers and the editorial committee and their respective employees, officers and agents accept no liability whatsoever for the consequences of any such inaccurate or misleading data, opinion or statement.

Papers will be considered for publication in all fields of pharmacology.

Before submitting a manuscript, authors must note the following points since failure to comply with instructions will lead to either delay or rejection of the manuscript. Overseas authors may find it helpful to seek advice from a Corresponding Editor in their country before submitting a manuscript for consideration.

1. **Manuscripts** (2 copies) should be sent to Dr G.M. Lees, Editorial Office, University of Aberdeen, Marischal College, Aberdeen AB9 1AS. The manuscript must be typed in double spacing on one side of paper, not larger than A4 (210 x 297 mm). There should be a separate title page with the names of authors (in alphabetical order) and their appropriate addresses. One first name of each author may be included.

2. **Style** Papers must be submitted in the style of the journal (see any recent issue of the journal) and in accordance with the Instructions to Authors published in *Br. J. Pharmac.* (1984), 81, 3-10. (Copies of these instructions may be obtained from Dr Lees.)

3. **Statement** The manuscript must be accompanied by the following statement: 'This manuscript has not been nor will be published in whole or in part by any other journal.' The statement may be included as part of the accompanying letter which must be signed by all authors. No paper will be accepted without this statement and the signature of each author.

4. **Summary** (2 copies) This should be a short summary of results and conclusions arranged in numbered paragraphs.

5. **Short title** A short (running) title of not more than 50 letters and spaces should be submitted. This may be typed on the title page.

6. **Figures** These should not be larger than A4 (210 x 297 mm) 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. Lettering on figures should be inserted in pencil. Symbols which are to appear in figures or legends should be chosen from the following:

○ ● □ ■ △ ▲ ▽ ▾ ◊ ◆ + ×

Photographs and photomicrographs should be printed on glossy paper and should be larger than the size required for reproduction. Each figure legend should be typed on a separate sheet of paper.

7. **Tables** These should generally have not more than 85 characters to a line (counting spaces between columns as 4 characters) and never more than 110 characters to a line. Each table should be typed on a separate sheet of paper.

8. **References** These must be collected in alphabetical order at the end of the paper. They should include the authors' names, year of publication (in brackets), title of article, title of publication (abbreviated in accordance with the most recent 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), the town of origin then the name of publisher. Where citation is made to a paper 'in press' the paper should if possible, accompany the manuscript, as an aid to the editor and referee.

9. **Short Communications** These will be accepted if they merit priority publication and do not require revision. They may contain up to 1,200 words of text including references and only one figure or table. The summary should be a single paragraph. A statement must be included.

10. **Key Words** Up to ten key words or phrases of two to three words should be displayed on the title page.

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. If reprints will not be available from the author, a note to this effect may be added at the end of the text.

British Journal of Pharmacology

VOLUME 86 NUMBER 3 NOVEMBER 1985

527 Frank R. Winton: Obituary

SHORT COMMUNICATION

529 MELAMED, E. & YOUDIM, M.B.H. Prevention of dopaminergic toxicity of MPTP in mice by phenylethylamine, a specific substrate of type B monoamine oxidase

PAPERS

533 HOULT, J.R.S. & NOURSHARGH, S. Phorbol myristate acetate enhances human polymorphonuclear neutrophil release of granular enzymes but inhibits chemokinesis

539 FUKKUDA, H., HOSOKI, E., ISHIDA, Y. & MORITOKI, H. Opioid receptor types on adrenergic nerve terminals of rabbit ear artery

547 DIEZ, J., TAMARGO, J. & VALENZUELA, C. Negative inotropic effect of somatostatin in guinea-pig atrial fibres

557 EMMS, H. & LEWIS, G.P. Sex and hormonal influences on platelet sensitivity and coagulation in the rat

565 CHAPAL, J., LOUBATIÈRES-MARIANI, M.M., PETIT, P. & ROYE, M. Evidence for an A_2 -subtype adenosine receptor on pancreatic glucagon secreting cells

571 BLACK, J.W. & SHANKLEY, N.P. The isolated stomach preparation of the mouse: a physiological unit for pharmacological analysis

581 BLACK, J.W., LEFF, P. & SHANKLEY, N.P. Further analysis of anomalous pK_B values for histamine H_2 -receptor antagonists on the mouse isolated stomach assay

589 BLACK, J.W., LEFF, P. & SHANKLEY, N.P. Pharmacological analysis of the pentagastrin-tiotidine interaction in the mouse isolated stomach

601 BLACK, J.W. & SHANKLEY, N.P. Pharmacological analysis of muscarinic receptors coupled to oxyntic cell secretion in the mouse stomach

609 BLACK, J.W. & SHANKLEY, N.P. Pharmacological analysis of the muscarinic receptors involved when McN-A 343 stimulates acid secretion in the mouse isolated stomach

619 FUJINUMA, S., KAMIKAWA, Y. & SHIMO, Y. Pharmacological characterization of the histamine receptor in the isolated muscularis mucosae of the guinea-pig oesophagus

627 OTTENHOF, M., UFKES, J.G.R. & VAN ROOIJ, H.H. The effect of prednisolone and ketotifen on the antigen-induced bronchoconstriction and mediator release in rat isolated lungs

637 SKOLNICK, P., WEISSMAN, B.A. & YOUDIM, M.B.H. Monoaminergic involvement in the pharmacological actions of buspirone

645 NAKAJIMA, T., NOMOTO, K., OHFUNE, Y., SHIRATORI, Y., TAKEMOTO, T., TAKEUCHI, H. & WATANABE, K. Effects of glutamic acid analogues on identifiable giant neurones, sensitive to β -hydroxy-L-glutamic acid, of an African giant snail (*Achatina fulica* Féussac)

655 MILLER, R.C. & STOCLET, J.-C. Modulation by endothelium contractile responses in rat aorta in absence and presence of flunarizine

663 CURTIS, M.J., MACLEOD, B.A. & WALKER, M.J.A. The effects of ablations in the central nervous system on arrhythmias induced by coronary occlusion in the rat

671 LEE, C.-M. Potentiation by cholinoreceptor agonists of contractions to field stimulation of rat vas deferens

677 REEVES, J.J. & STABLES, R. Effects of indomethacin, piroxicam and selected prostanooids on gastric acid secretion by the rat isolated gastric mucosa

685 BARNES, P.J., CUSS, F.M. & PALMER, J.B. The effect of airway epithelium on smooth muscle contractility in bovine trachea

693 BENNETT, A., MELHUISH, P.B. & STAMFORD, I.F. Carbenoxolone and deglycyrrhized liquorice have little or not effect on prostanooid synthesis by rat gastric mucosa *ex vivo*

697 FENIUK, W., HUMPHREY, P.P.A., PERREN, M.J. & WATTS, A.D. A comparison of 5-hydroxytryptamine receptors mediating contraction in rabbit aorta and dog saphenous vein: evidence for different receptor types obtained by use of selective agonists and antagonists

705 BROUGHTON PIPKIN, F. & CHINNERY, E. The effect of a calcium antagonist, nitrrendipine, on the responses of isolated strips of human, chorionic plate artery to prostaglandins E_2 and E_1

711 BYRNE, N.G. & LARGE, W.A. Evidence for two mechanisms of depolarization associated with α_1 -adrenoreceptor activation in the rat anococcygeus muscle

723 BLABER, L.C., FRYER, A.D. & MACLAGAN, J. Neuronal muscarinic receptors attenuate vagally-induced contraction of feline bronchial smooth muscle

729 FILE, S.E. & PELLOW, S. The effects of triazolobenzodiazepines in two animal tests of anxiety and in the holeboard

737 BENTLEY, G.A. & COPELAND, I.W. The effect of chronic haloperidol treatment on some cardiovascular parameters in cats

743 FAGG, G.E. & LANTHORN, T.H. Cl^-/Ca^{2+} -dependent L-glutamate binding sites do not correspond to 2-amino-4-phosphonobutanoate-sensitive excitatory amino acid receptors

753 HINDLEY, S.W., HOBBS, A., PATERSON, I.A. & ROBERTS, M.H.T. The effects of methyl β -carboline-3-carboxylate on social interaction and locomotor activity when microinjected into the nucleus raphé dorsalis of the rat

MEETINGS CALENDAR