## Edited for the British Pharmacological Society by

A.W. Cuthbert (Chairman)

Margaret Day (Press Editor)

J.D. Stephenson (Assistant Press Editor)

W.G Bisset B.J. Large T.B. Bolton G.M. Lees D.A. Brown G.P. Lewis B.A. Callingham I.H.M. Main K. Martin T.J. Crow F. de Matteis D.F.J. Mason V. Eisen E.K. Matthews E.W. Gill P.A. Nasmyth A.F. Green J.R. Parratt A.R. Green C.D. Richards Margarethe Holzbauer M. Sandler J. Hughes A.P. Silverman R. Jones M.A. Simmonds J.S. Kelly R.A. Webster

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

Manuscripts (two copies) should be sent to Dr A. Ungar, Department of Pharmacology, University of Edinburgh Medical School, 1 George Square, Edinburgh EH8 9JZ. Authors should consult the instructions inside the back cover.

The British Journal of Pharmacology is published monthly by Macmillan Journals Ltd, 4 Little Essex Street, London WC2R 3LF. Telephone: 01-836 6633. ISSN 0007-1188.

Annual subscription UK £45.00; USA & Canada, US \$99; Rest of world, US \$92 (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: Subscription Department, Brunel Road, Basingstoke, Hampshire RG21 2XS, England.

Enquiries concerning advertising space and rates should be addressed to: Advertisement Department, Macmillan Journals Limited, 4 Little Essex Street, London WC2R 3LF. Telephone: 01-836 6633.

Copyright e 1977 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.

Second class postage paid at New York, N.Y.
US Mailing Agent, Expeditors of the Printed Word, Ltd,
527 Madison Avenue, New York, NY 10022.

## European Society for Neurochemistry

Second meeting in Göttingen, 28 August-1 September 1978

The organising committee invites neurochemists to participate in the above meeting.

It is planned to hold the following scientific sessions:

Symposia: Myelin and myelin disorders

Factors influencing neuronal development

Neurochemistry of hypoxia Neurochemistry of addictive drugs

Round tables:

The value of nerve cell cultures for neurochemical research Techniques for the assay of amines and their metabolism

The role of peptides in brain function

Dendritic, axonal and transneuronal transport

Posters: Preferably related to the subjects of the sessions

Organising committee: H.S. Bachelard (UK), D. Biesold (GDR), V. Neuhoff (FRG), G.

Porcellati (Italy), L. Svennerholm (Sweden), T.V. Waehneldt (FRG)

V.P. Whittaker (FRG), H. Winkler (Austria)

Further details can be obtained from:

Prof. Dr. Volker Neuhoff, Max-Planck-Institut für experimentelle Medizin,
Hermann-Rein-Str. 3, D 3400 Göttingen, W-Germany

## **British Journal of Pharmacology**

British Journal of Pharmacology provides up-to-date research on all aspects of drug action essential to those involved in pharmacology. Ensure you receive this information each month by taking a subscription.

Subscription Dept, Macmillan Journals Ltd, Brunel Road, Basingstoke, Hants RG212XS, England.

I enclose payment of £45; USA & Canada, US \$99; Rest of world, US \$92 (or equivalent in any other currency).

Prices correct at time of publication. Payment may be made in any currency at the current exchange rates. Orders can only be processed if accompanied by the correct remittance. Cheques should be made payable to Macmillan Journals Ltd.

Name	٠	•	٠	٠	•	•	•	•	•	•	•	٠	•	•	٠	•	٠	٠	•	•	٠	•	٠	٠	•	٠	٠	•	٠
Address						•		•	•	•																		•	
		•	•	•	•	•	•	•	٠	٠	٠	•	•		•	•	•	•	•	•		•	•	•		•	•	•	•
		•			•			•	•	•		•				•				•									

Registered No: 785998 England Registered Office: 4 Little Essex St., London WC2R 3LF

#### **BRITISH MEDICAL BULLETIN**

Each Issue a Symposium on an Important Aspect of Contemporary Medical Research VOL. 33, No. 3 SEPTEMBER 1977

## **HAEMOSTASIS**

Scientific Editor: Duncan Thomas

Introduction R G Macfarlane Normal and abnormal haemostasis JF Mustard & M A Packham Fluid-mechanical and biochemical interactions in haemostasis G V R Born Biochemical aspects of platelet behaviour associated with surface membrane reactivity N Crawford & D G Taylor Disorders of platelet function R M Hardistv M P Esnouf Biochemistry of blood coagulation Factor VIII and its inherited disorders A L Bloom & I R Peake

Clinical management of haemophilia C R Rizza Physiological mechanisms in coagulation Milica Brozović

and fibrinolysis

Normal and abnormal fibrinolysis

P B A Kernoff & G P McNicol

Structure of fibrinogen and degradation products of fibrinogen

and fibrin Patrick J Gaffney Disorders of plasma fibrinogen

synthesis

Investigation of a long-standing bleeding tendency

G I C Ingram Diagnosis and management of disseminated A A Sharp

intravascular coagulation Blood replacement therapy

S J Urbaniak & J D Cash

P T Flute

Population-based distributions of T W Meade & W R S North haemostatic variables

Price: UK, £4.50; Other countries, £5.00; USA and Canada, \$12.50

Order from your local bookseller, or direct from

**BRITISH MEDICAL BULLETIN** 65 DAVIES STREET, LONDON, W1Y 2AA

# **British** ournal of **iármacolo**

## INDFX

(1966 - 1973)

The cumulative eight year index (1966-1973) to the British Journal of Pharmacology is now available.

Price £10.45 (including postage)

Available from:

**DEPARTMENT AS11.** 

MACMILLAN JOURNALS LTD.,

BRUNEL ROAD.

BASINGSTOKE, RG21 2XS.

HAMPSHIRE, ENGLAND.

Orders must be accompanied by remittance. Cheques should be made payable to Macmillan Journals Ltd. Payment may be made in any currency at the current exchange rate.

## **Drug Interactions** Edited by D.G. Grahame-Smith

This is an updated account of the latest Biological Council Symposium on drug action. Its orientation is away from basic pharmacology towards the more clinical aspects of the subject. The book thus provides a focus for current research activity.

£15.00. Order from your local bookseller, or in case of difficulty, send £15.00, and 50p for carriage, to Kimpton's Medical Bookshop, 205 Great Portland St., London W1. England.



### **INDEX TO VOLUME 60**

### **AUTHOR INDEX**

#### Α

- ABDUL-CADER, Z., CHARNOCK, J., FIELD, JOANNA, L., PARRY, J. & NOWELL, P.T. Inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by quaternary ammonium compounds and stimulation of acetylcholine release, 316P
- ADOLPHS, M.J.P., PARNHAM, M.J., VINCENT, J.E. & ZIJLSTRA, F.J. Detection of small amounts of prostaglandin-like material and rabbit aorta contracting substance released into blood of rat, 317P
- AGARWAL, R.A., LAPIERRE, Y.D., RASTOGI, R.B. & SINGHAL, R.L. Alterations in brain 5-hydroxy-tryptamine metabolism during the 'withdrawal' phase after chronic treatment with diazepam and bromazepam, 3
- AL-KAISI, NAHLA, PARRATT, J.R., SIDDIQUI, H.H. & ZEITLIN, I.J. Feline endotoxin shock: effects of methylprednisolone on kininogen depletion, on pulmonary circulation and on survival, 471
- ALABASTER, C.T., BLACKBURN, K.J., JOICE, J.R., MASSINGHAM, R. & SCHOLFIELD, P.C. UK-14,272, a novel orally-active cardiac stimulant, 284P
- ALEXANDER, F. Effect of diuretics on faecal excretion of water and electrolytes in horses, 589

#### В

- BACK, D.J., BRECKENRIDGE, A.M., GAY, FRANCESCA E., ORME, M.L'E., ROWE, P.H. & SMITH, EILEEN. The pharmacokinetics of norethisterone in the rabbit and rat after systemic and oral administration: effect of phenobarbitone, 279P
- BACQ, Z.M., BLAKELEY, A.G.H. & SUMMERS, R.J. The effects of L9394 on adrenergic transmission in the cat spleen, 286P
- BAILLIE, T.A., BOOBIS, A.R., DAVIES, D.S., JONES, D.H., MURRAY, S. & REID, J.L. Studies on the metabolic fate of 3-methoxy-4-hydroxyphenylethylene glycol (MHPG) in man, 280P
- BAKHLE, Y.S. Some characteristics of metabolism of  $\beta$ phenylethylamine in rat isolated lung, 294P
- BARASI, S. & ROBERTS, M.H.T. Responses of motoneurones to electrophoretically applied dopamine, 29
- BENEDICT, C.R., FILLENZ, MARIANNE, STANFORD, CLARE & VALERO, INMACULATA. Plasma nor-adrenaline levels as a measure of noradrenaline release, 287P
- BENNETT, A. & CURWAIN, B.P. Effects of aspirin-like drugs on canine gastric mucosal flow blood and acid secretion, 499
- BERDEAUX, A., BOISSIER, J.R. & GIUDICELLI, J.F. Effects of atenolol on regional myocardial blood flow and ST segment elevation in canine myocardium, 433
- BHARGAVA, K.P., KULSHRESTHA, V.K. & SRIVASTAVA, Y.P. Central mechanism of vasopressin-induced changes in antidiuretic hormone release, 77

- BIANCHETTI, G., BONACCORSI, AURORA, CHIODAROLI, A., FRANCO, R., GARATTINI, S., GOMENI, R. & MORSELLI, P.L. Plasma concentrations and cardiotoxic effects of desipramine and protriptyline in the rat, 11
- BLACKBURN, K.J. see ALABASTER, C.T., 284P
- BLAKELEY, A.G.H. see BACQ, Z.M., 286P
- BLOXAM, D.L., CURZON, G., KANTAMANENI, B.D. & TRICKLEBANK, M.D. Effects of tryptophan and portocaval anastomosis on activity and brain tryptophan metabolism, 277P
- BLOXHAM, P.A. & PUGH, D.M. Tamoxifen inhibition of an *in vitro* oestradiol-induced surface coat change on mouse blastocysts, 517
- BLUMGART, L.H., HARPER, A.M., LEIBERMAN, D.P. & MATHIE, R.T. (introduced by POWIS, G.) Liver blood flow measurement with <sup>85</sup>krypton clearance by portal venous and hepatic arterial routes of injection, 278P
- BOISSIER, J.R. see BERDEAUX, A., 433
- BONACCORSI, AURORA, FRANCO, R., GARATTINI, S., MORSELLI, P.L. & PITA, E. Plasma nortriptyline and cardiac responses in young and old rats, 21
- BONACCORSI, AURORA, see BIANCHETTI, G., 11
- BONTA, I.L., BULT, H. & PARNHAM, M.J. The presence of prostaglandin-like material in carrageenin-induced rat hind paw inflammation, 290P
- BOOBIS, A.R., see BAILLIE, T.A., 280P
- BOONYAVIROJ, PUNYA, FEUERSTEIN, GIORA & GUTMAN, YEHUDA. Reversal of prostaglandin E<sub>2</sub> effect on adrenal catecholamine release after hypophysectomy, 477
- BOWERY, N.G., COLLINS, J.F., HILL, R.G. & PEARSON, S. t-Butyl bicyclo phosphate: a convulsant and GABA antagonist more potent that bicuculline, 275P
- BRAVO, MARIA E., MONCKEBBERG, F., & URBINA, J. The effect of sulphamethoxypyridazine on liver and plasma levels of vitamin A in rats, 181
- BRECKENRIDGE, A.M. see BACK, D.J., 279P
- BROWN, F.F. & GOODFORD, P.J. Interaction of some bisarylhydroxysulphonic acids with a site of known structure in human haemoglobin, 337
- BROWN, R.A., SOLCA, ANNE M. & WILSON, J. Effects of uptake blockade on cardiac responses of anaesthetized dogs to isoprenaline, noradrenaline, and sympathetic nerve stimulation, 287P
- BROWNLEE, G. see BURGESS, E.J., 301P
- BUCKINGHAM, JULIA C. & HODGES, J.R. Hypothalamic polypeptides and analogues of corticotrophin production by rat adenohypophysial tissue *in vitro*, 298P
- BUCKINGHAM, R.E., HAMILTON, T.C. & ROBSON, D. Studies on the cardiovascular effects of pindolol in DOCA/saline hypertensive rats, 461
- BULT, H. see BONTA, I.L., 290P
- BURGESS, E.J. & PRINCE, A.K. (introduced by BROWNLEF, G.) Effect of reserpine on choline acetyltransferase and high affinity choline uptake in rat brain, 301P

INDEX

C

- CALDWELL, J., CROFT, JANE E., SMITH, R.L. & SNEDDEN, S.W. Metabolic fate of [14C]-phenobarbitone in rat and effect of chronic administration and dose size, 295P
- CALLINGHAM, B.A. & FOWLER, C.J. Monoamine oxidation in tissues of developing chick, 306P
- CANNON, P.J. see KEENAN, A.K., 282P
- CARTER, C.J. & PYCOCK, C.J. Possible importance of 5hydroxytryptamine in neuroleptic induced catalepsy in rats, 267P
- CAVERO, I., FENARD, S., FINCH, L., LEFEVRE, F. & ROACH, A. Studies on the rebound hypertension after clonidine withdrawal in conscious hypertensive cats, rats, and dogs, 288P
- CHAMBERS, D.M. & JEFFERSON, G.C. Some observations on the mechanism of benzodiazepine-barbiturate interactions in mouse, 393
- CHARNOCK, J. see ABDUL-CADER, Z., 316P
- CHIODAROLI, see BIANCHETTI, F., 11
- CHO, C.H., DAI, S. & OGLE, C.W. Effect of zinc on anaphylaxis in vivo in guinea-pig, 607
- CLAASSEN, V., DAVIES, J.E., HERRTING, G. & PLACHETA, P. Fluvoxamine, a specific 5-hydroxy-tryptamine uptake inhibitor, 505
- CLOW, A., ELLIOTT, P.N.C., JENNER, P., MARSDEN, C.D. & PYCOCK, C.J. Interactions of substituted benzamide drugs with cerebral dopamine pathways, 268P
- COLLINS, J.F. see BOWERY, N.G., 275P
- CONDORELLI, M., RASETTI, G., RENGO, F., RICCIARDELLI, B., SACCA, L., TRIMARCOX, B., & VOLPE, M. Effects of guanethidine on histamine release during reflex vasodilatation in dog, 379
- CONWAY, F.J. & HATTON, R. The effects of  $\beta$ -adrenoceptor blockade on the development of deoxycorticosterone acetate (DOCA) hypertension in the dog, 289P
- COOLING, M.J. & SIM, M.F. An investigation of sex difference in diuretic response to ethacrynic acid in mice, 569
- COSTALL, B., FORTUNE, D.H. & NAYLOR, R.J. 5-HT antagonists inhibit neuroleptic and morphine antagonism of the hyperactivity induced by DA from the nucleus accumbens, 266P
- COWAN, A., DOXEY, J.C. & HARRY, E.J.R. Animal pharmacology of buprenorphine, an oripavine analgesic agent, 547
- COWAN, A., LEWIS, J.W. & MACFARLANE, I.R. Agonist and antagonist properties of buprenophine, a new antinociceptive agent, 537
- CROFT, JANE E. see CALDWELL, J., 295P
- CROW, T.J. & DEAKIN, J.F.W. Do 5-HT neurones support self-stimulation, 320P
- CROW, T.J. & WADDINGTON, J.L. Rotational responses to the putative serotonin agonist 5MeODMT following unilateral 5,6-DHT lesions of the median forebrain bundle: a possible role for 5-HT in the control of rotational behaviour, 265P
- CROW, T.J. see WADDINGTON, J.L., 263P
- CURWAIN, B.P. see BENNETT, A., 499
- CURZON, G. & FERNANDO, J.C.R. Drugs altering insulin secretion: effects on plasma and brain concentrations of aromatic amino acids and on brain 5-hydroxytryptamine turnover, 401

- CURZON, G. & MARSDEN, C.A. Role of tryptamine in behavioural changes caused by a monoamine oxidase inhibitor and L-tryptophan, 307P
- CURZON, G. see BLOXAM, D.L., 277P

D

DAI, S. see CHO, C.H., 607

DALE, M. MAUREEN. Effects of metiamide on cell-mediated immune reactions in guinea-pig, 441

DAVIES, D.S. see BAILLIE, T.A., 280P

DAVIES, J.E. see CLASSEN, V., 505

DEAKIN, J.F.W. see CROW, T.J., 320P

- DEPORTER, D.A. Cyclic adenosine 3',5'-monophosphate and leucocyte chemotaxis *in vivo*, 205
- DOGGETT, N.S. & JAWAHARLAL, K. Anorectic activity of prostaglandin precursors, 409
- DOGGETT, N.S. & JAWAHARLAL, K. Some observations on the anorectic activity of prostaglandin  $F_{2a}$ , 409
- DOWD, H., KEH, G.S. & RAPER, C. Catechol-substituted phenoxypropanolamines: adrenoceptor activity in the anaesthetized cat, 197
- DOXEY, J.C., SMITH, C.F.C. & WALKER, JULIE, M. Selectivity of blocking agents for pre- and postsynaptic  $\alpha$ -adrenoceptors, 91
- DOXEY, J.C. see COWAN, A., 547

Ε

- EAKINS, K.E. & KULKARNI, P.S. Selective inhibitory actions of sodium p-benzyl-4-[1-oxo-2-(4-chlorobenzyl)-3-phenylpropyl] phenyl phosphonate (N-0164) and indomethacin on the biosynthesis of prostaglandins and thromboxanes from arachidonic acid, 135
- ELLIOTT, P.N.C. see CLOW, A., 268P
- EMSON, P.C. & KOOB, G. (introduced by IVERSEN, L.L.)
  Origin of dopaminergic afferents to the rat frontal cortex,
  270P
- EVANS, R.H. Effects of central depressant drugs on the isolated hemisected spinal cord of the immature rat, 273P

F

- FAMAEY, J.P., FONTAINE, J. & REUSE, J. The effects of non-steroidal anti-inflammatory drugs on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- FELDBERG, W. & SMYTH, D.G. C-fragment of lipotropin: an endogenous potent analgesic peptide, 445
- FENARD, S. see CAVERO, I., 288P
- FENNESSY, M.R. & TAYLOR, D.A. The effect of Δ9tetrahydrocannabinol on body temperature and brain amine concentrations in the rat at different ambient temperatures, 65
- FERNANDO, J.C.R. see CURZON, G., 401
- FERRY, C.B. & GEH, SOO LIN. An electrophysiological study of the action of crude *Enhydrina schistosa* venom, 233
- FEUERSTEIN, GLORIA see BOONYAVIROJ, PUNYA, 477 FIELD, JOANNA L. see ABDUL-CADER, Z., 316P FILLENZ, MARIANNE see BENEDICT, C.R., 287P

FINCH, L. see CAVERO, I., 288P

FLUDDER, JOAN M. & TONGE, SALLY R. (introduced by LEONARD B.E.) Modification by ethinyloestradiol and progesterone of effects of imipramine on 5-HT metabolism in discrete areas of rat brain, 309P

FONTAINE, J. see FAMAEY, J.P., 165

FORTUNE, D.H. see COSTALL, B., 266P

FOSTER, A.C. & ROBERTS, P.J. Glutamic acid: High-affinity binding to cerebellar membranes, 273P

FOWLER, C.J. see CALLINGHAM, B.A., 306P

FRANCIS, D., GREAVES, M.W. & YAMAMOTO, S. Enzymatic histamine degradation by human skin, 583

FRANCIS, G.R. & WHITING, R.L. On-line computation of peripheral resistance and stroke volume in conscious cat obtained using a chronically implanted electromagnetic flow transducer, 312P

FRANCO, R. see BIANCHETTI, G., 11 FRANCO, R. see BONACCORSI, AURORA, 21

G

GARATTINI, S. see BIANCHETTI, G., 11

GARATTINI, S. see BONACCORSI, AURORA, 21

GARDINER, J.E. & GWEE, M.C.E. Effect of two hemicholiniums on disposition and distribution of endogenous free choline in anaesthetized rabbits, 351

GAY, FRANCESCA E. see BACK, D.J., 279P

GEH, SOO LIN see FERRY, C.B., 233

GENT, J.P., SMYTH, D.G., SNELL, C.R. & WOLSTENCROFT, J.H. Effects of C-fragment on brain stem neurones in the cat, 272P

GEORGE, A.J. Monoamine oxidase activity at different levels of rat spinal cord, 308P

GIBSON, A. & JAMES, T.A. The nature of potassium chloride-induced relaxations of the rat anococcygeus muscle, 141

GILBERT, J.C. & WYLLIE, M.G. Studies of actions of drugs affecting the CNS and of relationship between nerve terminal ATPase activities and neurotransmitter release, 312P

GILBERT, J.C. & WYLLIE, M.G. Synaptosome transmitter release and ATPase activity, 300P

GIUDICELLI, J.F. see BERDEAUX, A., 433

GOMENI, R. see BIANCHETTI, G., 11

GOODFORD, P.J. see BROWN, F.F., 3337

GOTTFRIED, S., PARKE, D.V., SACRA, P.J. & THORNTON, P.C. Studies of the interaction of carbenoxolone sodium and warfarin sodium in vivo, 280P

GREAVES, M.W. see FRANCIS, D., 583

GREEN, A.R., MITCHELL, B.D., TORDOFF, ANN F.C. & YOUDIM, M.B.H. Evidence for dopamine deamination by both type A and type B monoamine oxidase in rat brain in vivo and for the degree of inhibition necessary of enzyme for increased functional activity of dopamine and 5-hydroxytryptamine, 343

GRENNAN, D.M., MITCHELL, W., MILLER, W. & ZEITLIN, I.J. The effects of prostaglandin  $E_1$ , bradykinin and histamine on canine synovial vascular permeability, 251

GUTMAN, YEHUDA see BOONYAVIROJ, PUNYA, 477

GWEE, M.C.E. see GARDINER, J.E., 351

н

HAAS, H.L. & RYALL, R.W. An excitatory action of iontophoretically administered lithium on mammalian central neurones, 185

HAMILTON, T.C. see BUCKINGHAM, R.E., 461

HARPER, A.M. see BLUMGART, L.H., 278P

HARRY, E.J.R. see COWAN, A., 547

HATTON, R. see CONWAY, F.J., 289P

HAYASHI, S. & TODA, N. Inhibition by Cd2+, verapamil and papaverine of Ca2+-induced contractions in isolated cerebral and peripheral arteries of the dog, 35

HERTTING, G. see CLASSEN, V., 505

HILL, R.G., MITCHELL, J.F. & ROBERTS, FIONA The effect of 40 mM potassium and electrical stimulation on the efflux of [3H]-GABA from rat dorsal medulla in vivo and in vitro, 274P

HILL, R.G. see BOWERY, N.G., 275P

HILL, R.G. see PEARSON, S., 318P

HODGES, J.R. see BUCKINGHAM, JULIA C., 298P

HONDA, F., KATSUKI, S., MIYAHARA, J.T. & SHIBATA, S. Effect of isoprenaline and phenylephrine on cyclic AMP content and mechanical activity of cold-stored and fresh taenia caecum from guinea-pig, 529

HUANG, JEN-TZAW & WAJDA, ISABEL J. Effects of morphine on accumulation of homovanillic and 5hydroxyindole acetic acids in choroid plexus of rats, 363

HUOT, SYLVIE, LIPPERT, B., PALFREYMAN, M.G. & SCHECHTER, P.J. Inhibition of dopaminergic activity in the extrapyramidal and limbic systems by y-acetylenic **GABA, 264P** 

HUSAIN, A. & JONES, C.W. (introduced by TOMLINSON, D.R.) Rat brain iso-renin, 281P

IMBS, J.L., MIESCH, F., SCHWARTZ, J., VELLY, J., LECLERC, G., MANN, A. & WERMUTH, C.G. A potent new  $\beta_2$ -adrenoceptor blocking agent, 357

IMMS, F.J., NEAME, R.L.B. & POWIS, D.A. Responses of the cardiovascular system of the rat to  $\alpha$ - and  $\beta$ adrenoceptor agonists, 107

ISMAHAN, G., PARVEZ, H., PARVEZ, S. & YOUDIM, M.B.H. Comparative effects of hypophysectomy and adrenalectomy on plasma and adrenal monoamines in pregnant and non-pregnant rats, 385

IVERSEN, L.L. see EMSON, P.C., 270P

IWATSUKI, N., KATO, K. & NISHIYAMA, A. The effects of gastrin and gastrin analogues on pancreatic acinar cell membrane potential and resistance, 147

JAMES, T.A. see GIBSON, A., 141 JAWAHARLAL, K. see DOGGETT, N.S., 409 JEFFERSON, G.C. see CHAMBERS, D.M., 393 JENNER, P. see CLOW, A., 268P

JOHNS, E.J., MURDOCK, R. & SINGER, BERTHA Effect of angiotensin I converting enzyme inhibitor (SQ 20881) on release of prostaglandins by rabbit kidney in vivo, 573

JOHNSTON, BARBARA M. & OWEN, D.A.A. Tissue blood flow and distribution of cardiac output in cats: changes caused by intravenous infusions of histamine and histamine receptor agonists, 173

JOICE, J.R. see ALABASTER, C.T., 284P

JONDORF, W.R. & MOSS, M.S. On the detectability of anabolic steroids in horse urine, 297P

JONES, C.W. see HUSAIN, A., 281P

JONES, D.H. see BAILLIE, T.A., 280P

JONES, R.L. & WILSON, N.H. Prostaglandin D and F with highly selective agonist actions, 315P

KANTAMANENI, B.D. see BLOXAM, D.L., 277P

KASU, T. & KOKETSU, K. Effects of dibutyryl cyclic adenosine 3',5'-monophosphate and theophylline on the bullfrog sympathetic ganglion cells, 331

KATO, K see IWATSUKI, N., 147

KATSUKI, S. see HONDA, F., 529

KEENAN, A.K. (introduced by CANNON, P.J.). The role of transmembrane calcium flux in the adrenergic response of the isolated frog heart, 282P

KEH, G.S see DOWN, H., 197

KEMP, J.A., WALKER, R.J. & WOODRUFF, G.N. The actions of cholinomimetics and catecholamines on rat substantia nigra neurones, 271P

KENDALL, D.A. & TONGE, SALLY R. (introduced by LEONARD, B.E.). Effects of testosterone and ethinyloestradiol on synthesis and uptake of NA and 5-HT in rat hindbrain: evidence for presynaptic regulation of monoamine synthesis, 310P

KIRSTEN, E.B. & LUSTIG, KAREN C. Prenylamine-induced contracture of frog skeletal muscle, 97

KOC, BARBARA A. & MARLEY, E. Antipodal central effects of dopamine and apomorphine, 269P

KOKETSU, K. see KASU, T., 331

KOOB, G. see EMSON, P.C., 270P

KULKARNI, P.S. see EAKINS, K.E., 135

KULSHRESTHA, V.K. see BHARGAVA, K.P., 77

KUMAR, R., MUMFORD, L. & TEIXEIRA, A.R. Influencing morphine self-administration in dependent rats, 276P

#### L

LAMBERT, M.B.T., MOLLOY, T. & WILSON, C.W.M. Effect of aspirin on protein binding of ascorbic acid, 300P

LANGER, S.Z. Presynaptic receptors and their role in regulation of transmitter release. Sixth Gaddum Memorial Lecture, National Institute for Medical Research, January 1977, 481

LAPIERRE, Y.D. see AGARWAL, R.A., 3

LECLERC, G. see IMBS, J.L., 357

LEFEVRE, F. see CAVERO, I., 288P

LEFORT, J. & VARGAFTIG, B.B. Salicylic acid prevents inhibition by aspirin of arachidonic acid-induced hypotension, bronchoconstriction and thrombocytopenia, 282P

LEIBERMAN, D.P. see BLUMGART, L.H., 278P

LEONARD, B.E. see FLUDDER, JOAN M., 309P

LEONARD, B.E. see KENDALL, D.A., 310P

LEWIS, D.M., PARDOE, MARGARET J. & WEBB, SANDRA N. Effect of adrenaline on intracellularly recorded action potentials of mammalian skeletal muscle, 299P

LEWIS, G.P. see WILLIAMS, T.J., 291P

LEWIS, J.W. see COWAN, A., 537

LEWIS, M.J. Uptake and overflow of radiolabelled  $\beta$ -adrenoceptors blocking agents by isolated vas deferens of rat, 595

LINDUP, W.E. see ORTON, T.C., 319P

LIPPERT, B. see HUOT, SYLVIE, 264P

LIVINGSTON, A. & WATERMAN, A.E. Self-induction of metabolism by ketamine in rat, 295P

LOWERY, C. see ORTON, T.C., 319P

LUSTIG, KAREN C. see KIRSTEN, E.B., 97

#### M

McDOUGALL, A.N., WALKER, FELICITY M. MAULE & WATSON, J. Effect of cloprostenol on human luteal steroid and prostaglandin secretion in vitro, 425

MACFARLANE, I.R. see COWAN, A., 537

McGRATH, J.C. & OLVERMAN, H.J. Release of [3H]noradrenaline by field stimulation and by drugs from the anococcygeus muscle, 305P

MacINTYRE, D.E. Selective inhibition of platelet responses to bisenoic prostaglandins, 293P

MACKENZIE, J.E. & PARRATT, J.R. Comparative effects of glyceryl trinitrate on venous and arterial smooth muscle *in vitro*; relevance to antianginal activity, 155

McLEAN, A.J. Anaphylactic reactions to endotoxin in guinea-pig tissues: relationship to endotoxin toxicity, 369

McLEAN, W.G. & SJÖSTRAND, J. Effects of chloroquine and other retino toxic drugs on axonal transport of proteins in rabbit vagus nerve, 302P

MANN, A. see IMBS, J.L., 357

MARLEY, E. see KOC, BARBARA A., 269P

MARSDEN, C.A. see CURZON, G.L., 307P

MARSDEN, C.D. see CLOW, A., 268P

MARSHALL, I., NASMYTH, P.A. & SHEPPERSON, N.B. Influence of presynaptic  $\alpha$ -adrenoceptors on overflow of noradrenaline in stimulated mouse vas deferens, 304P

MASSINGHAM, R. see ALABASTER, C.T., 284P

MATHIE, R.T. see BLUMGART, L.H., 278P

MESSIHA, F.S. Possible mechanism of adverse reaction following levodopa plus benserazide treatment, 55

MIESCH, F. see IMBS, J.L., 357

MILLER, R.D. & RODERICK, LAURA Ligated renal pedicles and duration of action of neostigmine and pyridostigmine, 555

MILLER, W. see GRENNAN, D.M., 251

MITCHELL, B.D. see GREEN, A.R., 343

MITCHELL, J.F. see HILL, R.G., 274P

MITCHELL, W. see GRENNAN, D.M., 251 MIYAHARA, J.T. see HONDA, F., 529

MOLLOY, T. see LAMBERT, M.B.T., 300P

MONCKEBBERG, F. see BRAVO, MARIA E., 181

MORRISON, J.D. The generation of nerve and muscle repetitive activity in the rat phrenic nerve-diaphragm preparation following inhibition of cholinesterase by ecothiopate, 45

MORSELLI, P.L. see BIANCHETTI, G., 11

MORSELLI, P.L. see BONACCORSI, AURORA, 21

MOSS, M.S. see JONDORF, W.R., 297P

MUIR, C.K. & SCOTT, N.C. Comparison of effects of caffeine and a 2-alkyl-1,2,3-benzotriazinium iodide on frog rectus abdominis, 375

MUMFORD, L. see KUMAR, R., 276P

MURDOCK, R. see JOHNS, E.J., 573

MURRAY, S. see BAILLIE, T.A., 280P

N

NASMYTH, P.A. see MARSHALL, I., 304P NAYLOR, R.J. see COSTALL, B., 266P NEAME, R.L.B. see IMMS, F.J., 107 NISHIYAMA, A. see IWATSUKI, N., 147 NOWELL, P.T. see ABDUL-CADER, A., 361P

O

O'DONNELL, STELLA R. & WANSTALL, JANET C. The use of functional antagonism to determine whether  $\beta$ -adrenoceptor agonists must have a lower efficacy than isoprenaline to be trachea-atria selective *in vitro* in guinea-pigs, 255

OGLE, C.W. see CHO, C.H., 607

OHGA, A. & TANEIKE, T. Dissimilarity between the responses to adenosine triphosphate or its related compounds and non-adrenergic inhibitory nerve stimulation in the longitudinal smooth muscle of pig stomach, 221

OKA, T. Role of 5-hydroxytryptamine in morphine-, pethidine-, and methadone-induced hypothermia in rats at low ambient and room temperature, 323

OLVERMAN, H.J. see McGRATH, J.C., 305P

ORME, M.L'E. see BACK, D.J., 279P

ORTON, T.C. & LOWERY, C. (introduced by LINDUP, W.E.) Irreversible protein binding of [14C]-practolol metabolites to hamster liver microsomes, 319P

OWEN, D.A.A. Histamine-induced changes in heart rate in anaesthetized cats, 285P

OWEN, D.A.A. see JOHNSTON, BARBARA M., 173

P

PALFREYMAN, M.G. see HUOT, SYLVIE, 264P PARDOE, MARGARET J. see LEWIS, D.M., 299P PARKE, D.V. see GOTTFRIED, S., 280P PARNHAM, M.J. see ADOLPHS, M.J.P., 317P PARNHAM, M.J. see BONTA, I.L., 290P

PARRATT, J.R. & STURGESS, R.M. The possible roles of histamine, 5-hydroxytryptamine and prostaglandin  $F_{2a}$  as mediators of the acute pulmonary effects of endotoxin, 209

PARRATT, J.R. see AL-KAISI, NAHLA, 471 PARRATT, J.R. see MACKENZIE, J.E., 155 PARRY, J. see ABDUL-CADER, Z., 316P

PARVEZ, H. see ISMAHAN, G., 385 PARVEZ, S. see ISMAHAN, G., 385

PAUL, C.J. & WHITEHOUSE, L.W. Metabolic basis for the supra-additive effect of the ethanol-diazepam combination in mice. 83

PEARSON, S. (introduced by HILL, R.G.) A versatile device which resets drifting baselines, 318P

PEARSON, S. see BOWERY, N.G., 275P

PERTWEE, R.G. & TAVENDALE, R. Effects of Δ9tetrahydrocannabinol on rates of oxygen consumption of mice, 559

PITA, E. see BONACCORSI, AURORA, 21 PLACHETA, P. see CLASSEN, V., 505 POWIS, D.A. see IMMS, F.J., 107 POWIS, G. see BLUMGART, L.H., 278P PRINCE A.K. see BURGESS, E.J., 301P PUGH, D.M. see BLOXHAM, P.A., 517 PYCOCK, C.J. see CARTER, C.J., 267P PYCOCK, C.J. see CLOW, A., 268P

R

RAPER, C. see DOWD, H., 197
RASETTI, G. see CONDORELLI, M., 379
RASTOGI, R.B. see AGARWAL, R.A., 3
REID, J.L. see BAILLIE, T.A., 280P
RENGO, F. see CONDORELLI, M., 379
REUSE, J. see FAMAEY, J.P., 165
RICCIARDELLI, B. see CONDORELLI, M., 379

RICHARDSON, P.D.I. & WITHRINGTON, P.G. A comparison of the effects of bradykinin, 5-hydroxytryptamine and histamine in the hepatic arterial and portal venous vascular beds of the dog: histamine H<sub>1</sub> and H<sub>2</sub>-receptor populations, 123

RICHARDSON, P.D.I. & WITHRINGTON, P.G. The role of  $\beta$ -adrenoceptors in the responses of the hepatic arterial vascular bed of the dog to phenylephrine, isoprenaline, noradrenaline and adrenaline, 239

RICHARDSON, P.D.I. & WITHRINGTON, P.G. Responses of the sympathetically-innervated hepatic arterial vascular bed of the dog to intra-arterial injections of dopamine, 283P

ROACH, A. see CAVERO, I., 288P
ROBERTS, FIONA see HILL, R.G., 274P
ROBERTS, M.H.T. see BARASI, S., 29
ROBERTS, P.J. see FOSTER, A.C., 273P
ROBSON, D. see BUCKINGHAM, R.E., 461
RODERICK, LAURA see MILLER, R.D., 555
ROSENTHAL, R.N. & SLOTKIN, T.A. Development of nicotinic responses in the rat adrenal medulla and long-

term effects of neonatal nicotine administration, 59 ROWE, P.H. see BACK, D.J., 279P RYALL, R.W. see HAAS, H.L., 185

S

SACCA, L. see CONDORELLI, M., 379 SACRA, P.J. see GOTTFRIED, S., 280P SCHECHTER, P.J. see HUOT, SYLVIE, 264P SCHNIEDEN, H. see VAN RIEZEN, H., 521 SCHOLFIELD, P.C. see ALABASTER, C.T., 284P SCHWARTZ, J. see IMBS, J.L., 357 SCOTT, N.C. see MUIR, C.K., 375 SHEPPERSON, N.B. see MARSHALL, I., 304P SHIBATA, S. see HONDA, F., 529 SIDDIQUI, H.H. see AL-KAISI, NAHLA, 471 SIM, M.F. see COOLING, M.J., 569 SINGER, BERTHA see JOHNS, E.J., 573 SINGHAL, R.L. see AGARWAL, R.A., 3 SJÖSTRAND, J. see McLEAN, W.G., 302P SLOTKIN, T.A. see ROSENTHAL, R.N., 59 SMITH, C.F.C. see DOXEY, J.C., 91 SMITH, EILEEN see BACK, D.J., 279P SMITH, R.L. see CALDWELL, J., 295P SMYTH, D.G. see FELDBERG, W., 445 SMYTH, D.G. see GENT, J.P., 272P SNEDDEN, S.W. see CALDWELL, J., 295P SNELL, C.R. see GENT, J.P., 272P SOLCA, ANNE M. see BROWN, R.A., 287P

SRIVASTAVA, P. see BHARGAVA, K.P., 77 STANFORD, CLARE see BENEDICT, C.R., 287P STURGESS, R.M. see PARRATT, J.R., 209 SUMMERS, R.J. see BACQ, Z.M., 286P

#### Т

TANEIKE, T. see OHGA, A., 221
TAVENDALE, R. see PERTWEE, R.G., 559
TAYLOR, D.A. see FENNESSY, M.R., 65
TEIXEIRA, A.R. see KUMAR, R., 276P
THORNTON, P.C. see GOTTFRIED, S., 280P
TODA, N. see HAYASHI, S., 35

TOMLINSON, D.R. An examination of the action of tetrabenazine on peripheral noradrenergic neurones, 303P

TOMLINSON, D.R. see HUSAIN, A., 281P TONGE, SALLY R. see FLUDDER, JOAN M., 309P TONGE, SALLY R. see KENDALL, D.A., 310P TORDOFF, ANN F.C. see GREEN, A.R., 343 TRICKLEBANK, M.D. see BLOXAM, D.L., 277P TRIMARCO, B. see CONDORELLI, M., 379

#### u

URBINA, J. see BRAVO, MARIA E., 181

#### V

VALERO, INMACULATA see BENEDICT, C.R., 287P
VAN RIEZEN, H., SCHNIEDEN, H. & WREN, ALLISON F.
Olfactory bulb ablation in rat: behavioural changes and
their reversal by antidepressant drugs, 521
VARGAFTIG, B.B. see LEFORT, J., 282P

VELLUCCI, SANDRA V. Effects of ether stress and betamethasone treatment on concentrations of noradrenaline and dopamine in various regions of rat brain. 601

VELLY, J. see IMBS, J.L., 357
VINCENT, J.E. see ADOLPHS, M.J.P., 317P
VOLPE, M. see CONDORELLI, M., 379
VONDONGEN, R. Intrarenal stimulation of renin secretion
by frusemide in the isolated kidney of the rat, 73

#### w

WADDINGTON, J.L. (introduced by CROW, T.J.) GABAlike properties of flurazepam and baclofen suggested by rotational behaviour following unilateral intranigral injection: a comparison with the GABA agonist muscimol, 263P WADDINGTON, J.L. see CROW, T.J., 265P WAJDA, ISABEL J. see HUANG, JEN-TZAW, 363 WALKER, FELICITY M. MAULE see McDOUGALL, A.N., WALKER, JULIE, M. see DOXEY, J.C., 91 WALKER, R.J. see KEMP, J.A., 271P WANSTALL, JANET C. see O'DONNELL, STELLA R., 255 WATERMAN, A.E. see LIVINGSTON, A.E., 295P WATSON, J. see McDOUGALL, 425 WEBB, SANDRA N. see LEWIS, D.M., 299P WERMUTH, C.G. see IMBS, J.L., 357 WHITEHOUSE, L.W. see PAUL, C.J., 83 WHITING, R.L. see FRANCIS, G.R., 312P WHITTLE, B.J.R. Mechanisms underlying gastric mucosal damage induced by indomethacin and bile salts, and the actions of prostaglandins, 455 WILLIAMS, T.J. (introduced by LEWIS, G.P.) Potentiation of bradykinin-induced exudation following intradermal injection of particulate or colloidal materials in the rabbit: evidence for prostaglandin release and action in inflammation, 291P WILSON, C.W.M. see LAMBERT, M.B.T., 300P WILSON, H. & YATES, M.S. Effects of  $\alpha$ -adrenoceptor antagonist phentolamine on responses of nasal vasculature and nictitating membrane of cat to cervical sympathetic stimulation, 314P WILSON, J. see BROWN, R.A., 287P WILSON, N.H. see JONES, R.L., 315P WITHRINGTON, P.G. see RICHARDSON, P.D.I., 123 WITHRINGTON, P.G. see RICHARDSON, P.D.I., 239 WITHRINGTON, P.G. see RICHARDSON, P.D.I., 283P WOLSTENCROFT, J.H. see GENT, J.P., 272P WOODRUFF, G.N. see KEMP, J.A., 271P WREN, ALLISON F. see VAN RIEZEN, H., 521

Υ

YAMAMOTO, S. see FRANCIS, D., 583 YATES, M.S. see WILSON, H., 314P YOUDIM, M.B.H. see GREEN, A.R., 343 YOUDIM, M.B.H. see ISMAHAN, G., 385

WYLLIE, M.G. see GILBERT, J.C., 300P

WYLLIE, M.G. see GILBERT, J.C., 312P

z

ZEITLIN, I.J. see AL-KAISI, NAHLA, 471 ZEITLIN, I.J. see GRENNAN, D.M., 251 ZIJLSTRA, F.J. see ADOLPHS, M.J.P., 317P

### SUBJECT INDEX

Α

- Ablation, olfactory bulb, in rat, behavioural changes and their reversal by antidepressant drugs, 521
- Acetazolamide, diuretic response to, in mice, sex difference in, 569
- Acetylcholine, release of, stimulation of, inhibition of Na+-K+-ATPase by quaternary ammonium compounds and, 316P
- --, release of, from synaptosomes, and ATPase activity, 300P
- --, correlation between effects of Li<sup>+</sup> and, on mammalian central neurones, 185
- --- , crude Enhydrina schistosa venom blocks postjunctional receptors, 233
- -, effect of different concentrations of, on nerve and muscle repetitive activity, 45
- -, effects of, on rat substantia nigra neurones, 271P
- --, inhibitory effects of various non-steroidal, antiinflammatory drugs on contractions of guinea-pig isolated ileum induced by, 165
- prolonged action of, on cholinoceptive sites causes nerve and muscle repetitive activity after inhibition of cholinesterase by ecothiopate, 45
- Acid secretion, in canine gastric mucosa, effects of aspirinlike drugs on, 499
- Acinar cells, effects of gastrin and its analogues on membrane potential and resistance of pancreatic, 147
- Action potentials, intracellularly recorded, in mammalian skeletal muscle, effect of adrenaline, 299P
- Adenohypophysial tissue, effect of hypothalamic polypeptides on corticotrophin production by rat, in vitro, 298P
- Adenosine, effect of atropine and guanethidine on response of pig longitudinal smooth muscle to, 221
- Adenosine diphosphate, effect of atropine and guanethidine on response of pig longitudinal smooth muscle to, 221
- Adenosine monophosphate, effect of atropine and guanethidine on response of pig longitudinal smooth muscle to, 221
- Adenosine 3', 5'-monophosphate, content, effect of isoprenaline and phenylephrine on, of cold-stored and fresh taenia caecum from guinea-pig, 529
- Adenosine triphosphate, dissimilarity between, and nonadrenergic inhibitory nerve stimulation of pig longitudinal smooth muscle, 221
- ATPase, activity of, and synaptosome transmitter release, 300P
- , nerve terminal, relationship between, and neuro-transmitter release, 312P
   , Na+-K+, inhibition of, by quaternary ammonium
- compounds and stimulation of ACh release, 316P Adenylate cyclase, activity of, in taenia caecum from
- guinea-pig, effect of cold storage on, 529
   , levels of dopamine-sensitive, following treatment with various substituted benzamides, 268P
- Adrenal medulla, development of nicotinic responses in rat, 59

- Adrenalectomy, effect of, on adrenal monoamines in pregnant and non-pregnant rats, 385
- Adrenaline, effect of hypophysectomy and adrenalectomy on, in pregnant and non-pregnant rats, 385
- --, effect of, on intracellularly recorded action potentials of mammalian skeletal muscle, 299P
- --, effect of, on cyclic AMP content and mechanical activity of cold-stored and fresh taenia caecum from guinea-pig, 529
- --, depolarizes sympathetic ganglia hyperpolarized by, in bullfrog in the absence of theophylline, 331
- --, effect of, on D600-induced changes in output by isolated frog heart at different temperatures, 282P
- --, effect of, on hepatic arterial vascular resistance in the dog, 239
- -, effects of, on rat substantia nigra neurones, 271P
- -- , pharmacological actions of racemic, compared with its oxymethylene derivative, 197
- ---, responses of sympathetically-innervated hepatic arterial vascular bed of dog to intra-arterial injections of, 283P
- Adrenoceptor blockers, have no effect on relaxation of pig longitudinal smooth muscle caused by transmural electrical stimulation, 221
- -, responses of rat cardiovascular system to infusions of noradrenaline and modification of responses by, 115
- α-Adrenoceptor agonists, responses of the rat cardiovascular system to, 107
- α-Adrenoceptor antagonist, phentolamine, effect of, on responses of nasal vasculature and nictitating membrane of cat to cervical sympathetic stimulation, 314P
- α-Adrenoceptor blockade, reduces pressor response to noradrenaline infusions in rat cardiovascular system, 115
- β-Adrenoceptor agonists, responses of the rat cardiovascular system to, 107
- ---, catechol-substituted phenoxypropanolamines are potent as, 197
- relative efficacies of three trachea-atria selective, compared with isoprenaline in the guinea-pig, 255
- β-Adrenoceptor antagonist, effect of pretreatment with, on vasopressin-induced ADH release in dogs, 77
- β-Adrenoceptor blockade, does not prevent development of DOCA/saline hypertension in dogs, 289P
- --- , enhances pressor response to noradrenaline infusions in rat cardiovascular system, 115
- , effects of, on development of DOCA hypertension in the dog, 289P
- $\beta$ -Adrenoceptor blocking agents, radiolabelled, uptake and overflow of, by isolated vas deferens of rat, 595
- $\beta_2$ -Adrenoceptor blocking agent, a potent new, 357
- $\beta$ -Adrenoceptor stimulation, effects of pindolol mediated by, 461
- Adrenoceptors, presynaptic, and their role in the regulation of transmitter release, 481
- -, activity of, in anaesthetized cat, 197
- α-Adrenoceptors, dopamine causes hepatic arterial vasoconstriction by stimulating, 283P

- presynaptic, influence of, on overflow or noradrenaline in stimulated mouse vas deferens, 304P
- --- , mainly responsible in mediating the effects of phenylephrine, 107
- --- , selectivity of blocking agents for pre- and postsynaptic,
   91
- $\beta$ -Adrenoceptors, mainly responsible in mediating the effects of isoprenaline, 107
- relaxation and cyclic AMP accumulation in guinea-pig taenia caecum, mediated by, 529
- role of, in response of hepatic arterial vascular bed of dog to phenylephrine, isoprenaline, noradrenaline and adrenaline, 239
- Adrenocorticotrophic hormone, effect of, on plasma and adrenal monoamines in pregnant and non-pregnant rats, 385
- -, release of, role of noradrenaline in, 601
- production of, by adenohypophysis, effect of hypothalamic polypeptides and analogues on, in vitro, 298P
- see corticotrophin, 298P
- Age, effect of, on cardiotoxicity of nortriptyline in rats, 21 Agonist actions, prostaglandins D and F with highly selective, 315P
- Alclofenac, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- Alcohol dehydrogenase, liver activity of, unaffected by treatment with levodopa alone or in combination with benserazide, 55
- Aldehyde dehydrogenase, effect of treatment with levodopa alone or in combination with benserazide on liver, 55
- **2-Alkyl-1,2,3-benzotriazinium iodide,** effect of, on frog rectus abdominis, 375
- Ambenonium, has similar effect to ecothiopate on generation of nerve and muscle repetitive activity in rat phrenic nerve-diaphragm preparation, 45
- Amidopyrine, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- Amino acids, aromatic, effects of drugs altering insulin secretion on, 401
- γ-Aminobutyric acid, -like properties of flurazepam and baclofen following unilateral intranigral injection, 263P
- --, comparative potencies of *t*-butyl bicyclo phosphate and bicuculline as antagonists of, 275P
- --, effect of potassium and electrical stimulation on efflux of radiolabelled, from rat dorsal medulla in vivo and in vitro, 274P
- --, effect of various central depressant drugs on response of isolated hemisected spinal cord of immature rat to, 273P
- --, inhibition of dopaminergic activity in extrapyramidal and limbic systems by α-acetylenic, 264P
- 2-(2-Aminoethyl)pyridine, effects of, a selective H<sub>1</sub>-receptor agonist, on tissue blood flow and cardiac output in the cat, 173
- Aminophylline, diuretic response to, in mice, sex difference in, 569
- Amiodarone, similar in haemodynamic effects and splenic adrenergic transmission to L9394, 286P
- Amitriptyline, effect of, on behavioural changes induced by olfactory bulb ablation in rat, 521
- Ammonium compounds, quaternary, inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACh release, 316P
- Amphetamine, in combination with various neuroleptics enhances cataleptic response in rats, 267P

- (+)-Amphetamine, effect of, on behavioural changes induced by olfactory bulb ablation in rat, 521
- Anabolic steroids, on the detectability of, in horse urine, 297P
- Analgesia, produced by C-fragment of lipotropin, 445
- Analgesic agent, buprenorphine, animal pharmacology of,
- Analgesic peptide, an endogenous potent, C-fragment of lipoprotein, 445
- Anaphylactic reactions, to endotoxin in guinea-pig tissues, 369
- Anaphylaxis, effect of zinc on, in vivo in guinea-pig, 607
- Angina, relevance of in vitro studies of effects of glyceryl trinitrate on venous and arterial smooth muscles to activity against, 155
- Angiotensin, production of, as measure of activity of rat brain iso-renin, 281P
- Angiotensin I converting enzyme inhibitor, effect of, on release of prostaglandins by rabbit kidney in vivo, 573
- Anococcygeus muscle, release of NA from, by field stimulation and by drugs, 305P
- --, nature of the potassium chloride-induced relaxations of rat, 141
- Anorectic activity, of prostaglandin  $F_{2a}$ , some observations on, 409
- - , of prostaglandin precursors, 409
- Anosmia, peripheral, inducement of, effects of, on locomotor activity, passive avoidance and irritability, 521
- Anticoagulants, interaction between carbenoxolone sodium and warfarin sodium, 280P
- Antidepressant drug, fluvoxamine, a specific 5-HT uptake inhibitor, 505
- reversal of behavioural changes induced by olfactory bulb ablation in rat, 521
- Antidiuretic hormone, a central inhibitory feedback mechanism for, exists with normal circulating ADH levels, 77
- --, central mechanism of vasopressin-induced changes in release of, 77
- Anti-inflammatory drugs, non-steroidal, effects of several, on cholinergic and histamine-induced contractions of guineapig isolated ileum, 165
- Antinociceptive agent, a new, buprenorphine, agonist and antagonist properties of, 537
- Apomorphine, antipodal central effects of, 269P
- --, comparison of rotational responses to, compared with those produced by 5MeODMT. 265P
- --, effect of, on cataleptic response to various neuroleptics in rats, 267P
- Arachidonic acid, effect of, on food intake in rats, 409
- Arginine, effect of, on accumulation of homovanillic acid and 5-HIAA in rat choroid plexus, 363
- bis-Arylhydroxysulphonic acids, interaction of some, with a site of known structure in human haemoglobin, 337
- Ascorbic acid, effect of aspirin on protein binding of, 300P Aspirin, salicylic acid prevents inhibition by, of arachidonic acid-induced hypotension, bronchoconstriction and thrombocytopenia, 292P
- --, effect of, on protein binding of ascorbic acid, 300P
- Aspirin-like drugs, effects of, on canine gastric mucosal blood flow and acid secretion, 499

  Aspartic acid, effect of, on accumulation of homovanillic
- acid and 5-HIAA in rat choroid plexus, 363

  Atenolol, effects of, on regional myocardial blood flow an
- Atenolol, effects of, on regional myocardial blood flow and ST segment elevation in canine myocardium, 433
- —, effect of, on β-adrenoceptors in dog hepatic arterial vascular system, 239

- -- , effect of, on development of DOCA hypertension in the dog, 289P
- Atrium, relative efficacy of isoprenaline and three  $\beta$ adrenoceptor agonists selective for, in the guinea-pig,
  255
- Atropine, abolishes excitatory component of nerve response to transmural electrical stimulation in pig longitudinal smooth muscle, 221
- --, blocks acetylcholine and nicotine excitations of rat substantia nigra neurones, 217P
- --, effect of, on excitation of cortical and thalamic neurones in rats and cats, 185
- --, inhibits carbachol response of rat substantia nigra neurones, 271P
- Axonal transport, of proteins in rabbit vagus nerve, effect of chloroquine and other retinotoxic drugs on, 302P

#### В

Baclofen, may have some GABA agonist properties, 263P Barbiturates, interaction with benzodiazepine, some observations on mechanism of, in mouse, 393

Barium chloride, effect of, on release of NA from anococcygeus muscle, 305P

Baselines, drifting, a versatile device which resets, 318P

Behavioural changes, caused by a monoamine oxidase inhibitor and L-tryptophan, role of tryptamine in, 307P

-, and their reversal by antidepressant drugs, after olfactory bulb ablation in rat, 521

Bendrofluazide, diuretic response to, in mice, sex difference in 569

Benorylate, effect of, on canine gastric mucosal blood flow and acid secretion, 499

Benserazide, possible mechanism of adverse reaction following treatment with levodopa plus, 55

Benzodiazepine, interaction with barbiturates, some observations on mechanism of, in mouse, 393

 --, altered brain 5-HT metabolism following chronic treatment with, 3

Betamethasone, effect of, on concentrations of noradrenaline and dopamine in various regions of rat brain, 601

**Bicuculline,** less potent as a convulsant and GABA antagonist than *t*-butyl bicyclo phosphate, 275P

Bile salts, gastric mucosal damage induced by, mechanisms underlying, 455

Blastocysts, mouse, surface coat change on, tamoxifen inhibition of oestradiol-induced, 517

Blood, of rat, detection of small amounts of prostaglandinlike material and rabbit aorta contracting substance released into, 317P

Blood flow, changes in tissue, in the cat caused by intravenous infusions of histamine and histamine receptor agonists, 173

- --, regional myocardial, effect of atenolol on, in canine myocardium, 433
- --, in a canine gastric mucosa, effects of aspirin-like drugs on, 499

Blood platelets, effect of fluvoxamine on 5-HT uptake by, 505

**Blood pressure**, effect of noradrenaline on mean arterial, in rat and effect of adrenoceptor blockers, 115

 mean arterial, increased by phenylephrine and decreased by isoprenaline both dose-dependently in the rat, 107

- --, effect of pindolol on, in DOCA/saline hypertensive rats, 461
- Body temperature, effect of Δ°-THC on, and brain amines in rat at different ambient temperatures, 65

**Bradycardia,** development of at high plasma concentrations of desipramine and protriptyline in the rat, 11

**Bradykinin**, comparison of effects of, 5-HT and histamine on the hepatic arterial and portal venous vascular beds of the dog, 123

--, effects of, on canine synovial vascular permeability, 251

 --, potentiation of exudation induced by, following intradermal injection of particulate or colloidal materials in the rabbit, 291P

Brain, rat, discrete areas of, modification by ethinyloestradiol and progesterone of effects of imipramine on 5-HT metabolism in, 309P

 rat, various regions of, effects of ether stress and betamethasone treatment on concentrations of noradrenaline and dopamine in, 601

Brain stem, effects of C-fragment on, neurones in the cat, 272P

Bretylium, inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACh release, 316P

British Pharmacological Society, Proceedings of, Liverpool, 30-31 March, 19u7, 263-320P

Bromazepam, altered brain 5-HT metabolism during withdrawal phase after chronic treatment with, 3

Bronchoconstriction, salicylic acid prevents inhibition by aspirin of arachidonic acid-induced, 292P

--, effect of zinc on, in vivo in guinea-pig, 607

Bubrenorphine, agonist and antagonist properties of, a new antinociceptive agent, 537

--, animal pharmacology of, an oripavine analogesic agent, 547

Bufexamac, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165

**Burimamide**, in combination with mepyramine, has no effect on acute pulmonary effects of endotoxin, 209

t-Butyl-amino-3-ol-2-propyl oximino-9 fluorine, a potent new  $\beta_2$ -adrenoceptor blocking agent, 357

t-Butyl bicyclo phosphate, a convulsant and GABA antagonist more potent than bicuculline, 275P

1-Butyl-3-[1-(6,7-dimethoxyquinazolin-4-yl)piperidin-4-yl] urea, see UK-14, 275, 284P

N-t-butylnoradrenaline, pharmacological actions of racemic, compared with its oxymethylene derivative, 197

#### С

C-fragment, of lipotropin, analgesic effect of, 445

- --, comparison of potency of, with morphine and metenkephalin in cat brain stem, 272P
- ---, effects of, on brain stem neurones in the cat, 272P

Cd<sup>2+</sup>, inhibition by, of calcium-induced contractions in isolated cerebral and peripheral arteries of the dog, 35

Caerulein, effects of, on pancreatic acinar cell membrane potential and resistance, 147

Caffeine, effect of, on frog rectus abdominis, 375

Calcium, induces contractions in isolated cerebral and peripheral arteries of the dog, 35

- mobility of, altered in frog skeletal muscle by prenylamine, 97
- -- , role of transmembrane flux of, in adrenergic response of isolated frog heart, 282P

- Carbachol, effect of, on release of NA from anococcygeus muscle, 305P
- --, crude sea snake venom inhibits muscle depolarization caused by, 233
- --, effects of, on rat substantia nigra neurones, 271P
- Carbenoxolone sodium, interaction of, and warfarin sodium in vivo, 280P
- Cardiac output, changes in distribution of, in the cat caused by intravenous infusions of histamine and histamine receptor agonists, 173
- --, effect of adrenoceptor blockade during noradrenaline infusions on, in rat, 115
- --, increased by both isoprenaline and phenylephrine but by different mechanisms, 107
- Cardiovascular effects, of pindolol in DOCA/saline hypertensive rats, 461
- Cardiovascular system, responses of the rat, to noradrenaline infusions and their modification by adrenoceptor blockers, 115
- --, responses of the rat, to  $\alpha$  and  $\beta$ -adrenoceptor agonists, 107
- Carrageenin, presence of prostaglandin-like material in rat hind paw inflammation induced by, 290P
- Catecholamine, adrenal, release of, after hypophysectomy, reversal of effect of PGE, on, 477
- ---, depletion of adrenal, by neonatal rats following neonatal administration of nicotine, 59
- Central nervous system, excitatory action of iontophoretically administered lithium on neurones of mammalian, 185
- --, drugs affecting, studies of actions of, 312P
- Cerebellum, high-affinity binding of glutamic acid to membranes of, 273P
- Cerebral arteries, more sensitive than peripheral arteries to interference with the trans-membrane flux of Ca<sup>2+</sup> in the dog. 35
- Cervical sympathetic stimulation, effects of phentolamine on responses of cat nictitating membrane and nasal vasculature to, 314P
- Chlordiazepoxide, interaction of, with pentobarbitone in mouse, 393
- --, effect of, on behavioural changes induced by olfactory bulb ablation in rat, 521
- Chloride, effect of diuretics on content of, in faeces of horses, 589
- p-Chlorophenylalanine, pretreatment with, prevents narcotic-induced hypothermia in rats at room and low ambient temperatures, 323
- Chloroquine, effects of, on axonal transport of proteins in rabbit vagus nerve, 302P
- Chlorpromazine, effects of, on isolated hemisected spinal cord of immature rat, 273P
- ---, effect of, on behavioural changes induced by olfactory bulb ablation in rat, 521
- -- , effect of, on axonal transport of proteins in rabbit vagus nerve, 302P
- Cholecystokinin-pancreozymin, effects of, on pancreatic acinar cell membrane potential and resistance, 147
- Choline, endogenous free, effect of two hemicholiniums on disposition and distribution of, in anaesthetized rabbits, 351
- Choline acetyltransferase, effect of reserpine on, and high affinity choline uptake in rat brain, 301P
- Cholinesterase, nerve and muscle repetitive activity in rat phrenic nerve-diaphragm preparation following inhibition of, by ecothiopate, 45

- Choroid plexus, rat, accumulation of homovanillic and 5-hydroxyindole acetic acids in, effect of morphine on, 363
- Clebopride, effects of, on cerebral dopamine pathways, 268P
- Clioquinol, effect of, on axonal transport of proteins in rabbit vagus nerve, 302P
- Clonidine, inhibition of vas deferens produced by, involves presynaptic α-adrenoceptors, 91
- rebound hypertension after withdrawal from, in conscious hypertensive cats, rats and dogs, 288P
- Clopirac, inhibitory effect of, on cholinergic and histamineinduced contractions of guinea-pig isolated ileum, 165
- Cloprostenol, effect of, on human luteal streoid and prostaglandin secretion in vitro, 425
- Clorgyline, effect of, on monoamine oxidase, 343
- Cocaine, effect of, on nerve responses of pig longitudinal smooth muscle, 221
- Cocaine hydrochloride, effect of, on cardiac responses of anaesthetized dogs to isoprenaline, noradrenaline and sympathetic nerve stimulation, 287P
- Cold storage, effect of, on effect of isoprenaline and phenylephrine on cyclic AMP and mechanical activity of taenia caecum from guinea-pig, 529
- Compound 48/80, effect of pretreatment with, on pulmonary response to endotoxin, 209
- Computation, on-line, of peripheral resistance and stroke volume in conscious cat obtained using a chronically-implanted electromagnetic flow transducer, 312P
- Cortex, origin of dopaminergic afferents to rat frontal, 270P Corticotrophin, production of, by rat adenohypophysial tissue, effect of hypothalamic polypeptides on, *in vitro*, 798P
- - . see adrenocorticotrophic hormone, 298P
- Corticotrophin releasing hormone, effect of, on corticotrophin production in rat adenohypophysial tissue in vitro, 298P
- Cyclic adenosine 3',5'-monophosphate, and leucocyte chemotaxis *in vivo*, 205
- --, effects of dibutyryl, and theophylline on bullfrog sympathetic ganglion cells, 331
- Cyproheptadine, effect of, on morphine and fluphenazine antagonism of dopamine-induced hyperactivity in the rat, 266P
- --, effect of, on neuroleptic-induced catalepsy in rats, 267P

D

- D600, effect of, on isolated frog heart at different temperatures, 282P
- **Dantrolene,** cannot block prenylamine-induced contracture of frog skeletal muscle, 97
- Deoxycorticosterone, and saline, hypertension induced by, in rats, cardiovascular effects of pindolol during, 461
- Deoxycorticosterone acetate, effects of  $\beta$ -adrenoceptor blockade on development of, hypertension in the dog, 289P
- and saline, hypertension induced by, in rats, cardiovascular effects of pindolol during, 461
- (-)-Deprenil, effect of, on monoamine oxidase, 343
- **Desipramine**, plasma concentrations and cardiotoxic effects of, in the rat, 11
- Desmethyl diazepam, levels of, a major metabolite of diazepam increased by pretreatment with ethanol in mice, 83
- **Desmethylimipramine,** effect of addition of, on plasma levels of noradrenaline, 287P

- effect of, on uptake of |3H|-NA by rat isolated vas deferens, 595
- Dextran, measurement of amounts of radiolabelled, leaking from synovial circulation to compare relative effects of PGE<sub>1</sub>, bradykinin and histamine in the dog, 251
- **Dextrorphan,** effect of, on accumulation of homovanillic and 5-hydroxyindoleacetic acids in rat choroid plexus, 363
- Diamine oxidase, enzymatic degradation of histamine by, by human skin, 583
- Diazepam, interaction of, with pentobarbitone in mouse, 393
- · , altered brain 5-HT metabolism during withdrawal phase after chronic treatment with, 3
- --, blood levels of, higher in mice pretreated with ethanol than without, 83
- --, effects of, on isolated hemisected spinal cord of immature rat, 273P
- --, metabolic basis for the supra-additive effect of the combination of ethanol and, in mice, 83
- **Dibutyryl cyclic AMP**, effect of injection of, alone or with theophylline together with irritant on leucocyte migration in pleural cavity, 205
- Dihydro-β-erythroidine, effect of, on mammalian central neurones, 185
- L-3,4-Dihydroxyphenylalanine, effect of, on monoamine oxidase, 343
- 5,6-Dihydroxytryptamine, rotational responses to 5MeODMT following unilateral, lesions in median forebrain bundle, 265P
- 1,1-Dimethyl-4-phenyl-piperazinium, effect of, on nerve response to transmural electrical stimulation in pig longitudinal smooth muscle, 221
- Dimethylquaternary propranolol, inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACh release, 316P
- **Dinitrofluorobenzene**, effect of, on effect of metiamide on cell-mediated immune reactions in guinea-pig, 441
- **2,3-Diphosphoglycerate,** receptor site for, in human haemoglobin, effect of *bis*-arylhydroxysulphonic acids on, 337
- **Diprenorphine,** effect of, on antinociceptive effects of buprenorphine, 537
- Diuretic response, to ethacrynic acid, in mice, sex difference in, 569
- **Diuretics**, effects of, on faecal excretion of water and electrolytes in horses, 589
- L-DOPA, combined with nomifensine enhances cataleptic response to haloperidol in rats, 267P
- **Dopamine**, concentrations of, in various regions of rat brain, effects of ether stress and betamethasone treatment of, 601
- ---, evidence for deamination of, by both type A and type B monoamine oxidase in rat brain in vivo, 343
- --, antipodal central effects of, 269P
- --, 5-HT antagonists inhibit neuroleptic and morphine antagonism of hyperactivity induced by, from the nucleus accumbens, 266P
- --, interactions of substituted benzamides with cerebral pathways, 268P
- ---, origin of, afferents to rat frontal cortex, 270P
- --, probably precursor of noradrenaline in rat frontal cortex, 270P
- --, responses of motoneurones to electrophoretically applied, 29
- responses of rat lumbar spinal cord motoneurones reduced by electrophoretically applied α-flupenthixol, 29
- , responses of sympathetically-innervated hepatic arterial vascular bed of dog to intra-arterial injections of, 283P

- **Dopamine receptors,** hepatic arterial vasodilatation caused by stimulation of specific, by dopamine, 283P
- --, two types of central, in fowl, 269P
- Dopaminergic neurones, inhibition of activity in, of extrapyramidal and limbic systems by γ-acetylenic GABA, 264P
- **Dorsal medulla,** effect of potassium and electrical stimulation on efflux of [<sup>3</sup>H]-GABA from rat, *in vivo* and *in vitro*, 274P
- Drifting baselines, a versatile device which resets, 318P

#### Ε

- Ecothiopate, nerve and muscle repetitive activity in rat phrenic nerve-diaphragm preparation following inhibition of cholinesterase by, 45
- Edrophonium, inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACh release, 316P
- Electrical stimulation, effect of, on uptake and overflow of radiolabelled  $\beta$ -adrenoceptor blocking agents by isolated rat vas deferens, 595
- Electrolytes, and water, faecal excretion of, in horses, effects of diuretics on, 589
- Endotoxin, 026:B6(B), anaphylactic reactions to, in guineapig tissues, 369
- --, possible roles of histamine, 5-HT and PGF<sub>2α</sub> as mediators of acute pulmonary effects of, 209
- Endotoxin shock, feline, effects of methylprednisolone on kininogen depletion, on pulmonary circulation and on survival, 471
- Endplate potentials, crude Enhydrina schistosa venom abolishes extracellular, and reduces miniature, 233
- Enhydrina schistosa, electrophysiological study of action of crude venom from, 233
- Ethacrynic acid, sex difference in diuretic response to, in mice, 569
- Ethambutol, effect of, on axonal transport of proteins in rabbit vagus nerve, 302P
- Ethanol, metabolic basis for the supra-additive effect of the combination of, and diazepam in mice, 83
- Ether stress, effects of, on concentration of noradrenaline and dopamine in various regions of rat brain, 601
- Ethinyloestradiol, modification by, of effects of imipramine on 5-HT metabolism in discrete areas of rat brain, 309P
- , effects of, on synthesis of NA and 5-HT in rat hindbrain, evidence for presynaptic regulation of monoamine synthesis, 310P
- 2-Ethyl-3-(4-y-di-n-butylaminopropoxybenzoyl)-indolizine hydrochloride, see L9394, 286P
- Excretion, faecal, of water and electrolytes in horses, effect of diuretics on, 589

#### F

FG 4963, see femoxetine, 267P

- Femoxetine, effect of, on neuroleptic-induced catalepsy in rats, 267P
- Fenoterol, relative efficacy of, compared with isoprenaline as selective trachea-atria  $\beta$ -adrenoceptor agonist in the guinea-pig, 255
- Field stimulation, release of NA by, from anococcygeus muscle, 305P

INDEX

- Flow transducer, electromagnetic chronically implanted, online computation of peripheral resistance and stroke volume obtained using, 312P
- Flufenamic acid, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- Flunitrazepam, GABA-like properties of, following unilateral intranigral injections, 263P
- Fluphenazine, antagonizes dopamine-induced hyperactivity in rat nucleus accumbens, 266P
- --, cataleptic response to, enhanced by amphetamine in rats, 267P
- $\alpha$ -Flupenthixol, effects of electrophoretic application of, on motoneurone responses in rat lumbar spinal cord, 29

Fluvoxamine, a specific 5-HT uptake inhibitor, 505

- Frusemide, diuretic response to, in mice, sex difference in, 569
- --, effect of, on faecal excretion of water and electrolytes in horses, 589
- --, has little effect on renal perfusion pressure or flow rate in isolated rat kidney, 73
- --, intrarenal stimulation of renin secretion by, in isolated rat kidney, 73
- Furtrethonium, effects of, on rat substantia nigra neurones, 271P

G

- Gaddum Memorial Lecture, Sixth, National Institute for Medical Research, January 1977, Presynaptic receptors, 481
- Gastric mucosa, canine, blood flow in, effects of aspirin-like drugs on, 499
- --, damage of, mechanisms underlying, induced by indomethacin and bile salts, 455
- Gastrin, effects of, and its analogues on pancreatic acinar cell membrane potential and resistance, 147
- Glucuronic acid, conjugates with MHPG in brain, spinal cord and periphery, 280P
- L-Glutamate, effect of various central depressant drugs on response of isolated hemisected spinal cord of immature rat to, 273P
- Glutamic acid, high-affinity binding of, to cerebellar membranes, 273P
- --, effect of, on accumulation of homovanillic acid and 5-HIAA in rat choroid plexus, 363
- Glyceryl trinitrate, comparative effects of, on venous and arterial smooth muscle in vitro, 155
- Glycine, effect of, on accumulation of homovanillic acid and 5-HIAA in rat choroid plexus, 363
- Guanethidine, effects of, on histamine release during reflex vasodilatation in dog, 379
- --, effect of, with atropine on response of pig longitudinal smooth muscle to ATP, 221

- H<sub>1</sub>-receptors, predominant mediators of effects of histamine in hepatic arterial and portal venous vascular beds in the dog, 123
- --, population of, in hepatic arterial and portal venous vascular beds of the dog, 123

- H,-receptor antagonist, metiamide, effect of, on cellmediated immune reactions in guinea-pig, 441
- H<sub>2</sub>-receptors, poputation of, in hepatic arterial and portal venous vascular beds of the dog, 123
- Haemoglobin, interactions of some bis-arylhydroxysulphonic acids with a site of known structure in human, 337
- Haloperidol, antagonizes hepatic arterial vasoconstriction caused by dopamine and phenylephrine, 283P
- --, cataleptic response to, enhanced by amphetamine in rats, 267P
- --, effects of, on isolated hemisected spinal cord of immature rat, 273P
- Heart, UK-14,275 is a new orally-active cardiac stimulant, 284P
- Heart rate, effect of pindolol on, in DOCA/saline hypertensive rats, 461
- · , effect of adrenoceptor blockade during noradrenaline infusions on, in rat, 115
- --, effect of different plasma concentrations of nortriptyline on, in young and old rats, 21
- --, effects of intravenous infusions of desigramine and protriptyline on, in the rat, 11
- histamine-induced changes in, in anaesthetized cats, 285P
- --, unchanged by phenylephrine but increased by isoprenaline in the rat, 107
- Hemicholinium, inhibition of Na+-K+-ATPase by, and stimulation of ACh release, 316P
- Hemicholiniums, effect of two, on disposition and distribution of endogenous free choline in anaesthetized rabbits, 351
- Hepatic arterial vascular bed, responses of sympatheticallyinnervated, to intra-arterial dopamine, noradrenaline and adrenaline, 283P
- Hepatic circulation, blood flow measurements following portal venous and hepatic arterial injection of 85 krypton,
- Hexamethonium, modification of response of rat cardiovascular system to noradrenaline infusions by, 115
- Histamine, changes in tissue blood flow and cardiac output in the cat caused by intravenous infusions of, and receptor agonists, 173
- --, comparison of effects of bradykinin, 5-HT and, on hepatic arterial and portal venous vascular beds of the dog, 123
- --, effects of, on canine synovial vascular permeability, 251
- --, heart rate changes induced by, in anaesthetized cats, 285P
- --, inhibitory effects of various non-steroidal, antiinflammatory drugs on contractions of guinea-pig isolated ileum induced by, 165
- --, possible role of, as mediator of acute pulmonary effects of endotoxin, 209
- --, release of, effect of guanethidine on, during reflex vasodilatation in dog, 379
- --, enzymatic degradation of, by human skin, 583
- Histamine-N-methyl transferase, enzymatic degradation of histamine by, by human skin, 583
- L-Homocysteate, effect of various central depressant drugs on response of isolated hemisected spinal cord of immature rat to, 273P
- Homovanillic acid, levels of, following treatment with various substituted benzamides, 268P
- --, accumulation of, in rat choroid plexus, effect of morphine on, 363

INDEX

- Hydrochlorthiazide, effect of, on faecal excretion of water and electrolytes in horses, 589
- Hydrocortisone, effect of, on plasma and adrenal monoamines in pregnant and non-pregnant rats, 385
- y-Hydrobutyrolactone, effect of pretreatment with, on interaction of various substituted benzamides with cerebral dopamine pathways, 268P
- Hydroxychloroquine, effect of, on axonal transport of proteins in rabbit vagus nerve, 302P
- Hydroxydopamine, injection of, depletes rat frontal cortex of noradrenaline, 270P
- 6-Hydroxydopamine, rotational responses to 5MeODMT following unilateral, lesions in median forebrain bundle,
- —, effect of, on uptake of [3H]-NA by rat isolated vas deferens, 595
- 5-Hydroxyindoleacetic acid, effect of  $\Delta^9$ -THC on brain concentrations of, in rat at different ambient temperatures,
- --, increased endogenous levels of, following chronic treatment with diazepam and bromazepam, 3
- --, levels of, following tryptophan and portacaval anastomosis, 277P
- --, brain turnover of, effects of drugs altering insulin secretion on, 401
- --, accumulation of, in rat choroid plexus, effect of morphine on, 363
- 5-Hydroxytryptamine, antagonizes dopamine-induced hyperactivity in rat nucleus accumbens, 266P
- --, comparison of effects of bradykinin, and histamine on the hepatic arterial and portal venous vascular beds of the dog, 123
- --, effect of  $\Delta^9$ -THC on brain concentrations of, in rat at different ambient temperatures, 65
- $-\cdot$ ,  $\alpha$ -flupenthixol applied electrophoretically discriminates between dopamine and, responses in rat lumbar spinal cord, 29
- --, levels of, following portocaval anastomosis and tryptophan, 277P
- --, may be involved in narcotic-induced hypothermia in rats at low ambient temperatures, 323
- --, metabolism of brain, during 'withdrawal' phase after chronic treatment with diazepam and bromazepam, 3
- --, possible importance of, in neuroleptic-induced catalepsy in rats, 267P
- --, possible role of, as mediator of acute pulmonary effects of endotoxin, 209
- --, possible role for, in control of rotational behaviour, 265P
- --, role of, in morphine-, pethidine- and methadone-induced hypothermia in rats at low ambient and room temperature, 323
- --, evidence for degree of inhibition of monoamine oxidase necessary for increased functional activity of, 343
- --, brain turnover of, effects of drugs altering insulin secretion on, 401
- --, metabolism of, in discrete areas of rat brain, modification by ethinyloestradiol and progesterone of effect of imipramine on, 309P
- ---, synthesis of, effects of testosterone and ethinyloestradiol on, in rat hindbrain, evidence for presynaptic regulation of monoamine synthesis, 301P
- -, uptake of, specific inhibition of, by fluvoxamine, 505
- 5-Hydroxytryptamine neurones, do they support selfstimulation, 320P

- 5-Hydroxytryptophan, treatment with, restores hypothermic responses to narcotics in rats pretreated with pchlorophenylalanine, 323
- , effect of, on cataleptic response to various neuroleptics in rats, 267P
- --, effect of, potentiated by fluvoxamine, 505
- Hypertension, effects of  $\beta$ -adrenoceptor blockade on development of DOCA, in the dog, 289P
- -, rebound, after clonidine withdrawal in conscious hypertensive cats, rats and dogs, 288P
- Hypophysectomy, effect of, on plasma monoamines in pregnant and non-pregnant rats, 385
- --, reversal of PGE<sub>2</sub> effect on adrenal catecholamine release after, 477
- Hypotension, salicylic acid prevents inhibition by aspirin of arachidonic acid-induced, 292P
- Hypothalamic polypeptides, effect of, on corticotrophin production by rat adenohypophysial tissue in vitro, 298P
- **Hypothermia**, induced by  $\Delta^9$ -tetrahydrocannabinol, effect of on oxygen consumption in mice, 559
- --, Δ9-THC-induced, in rats dependent on ambient temperature, 65
- --, role of 5-HT in narcotic-induced, in rats at low ambient and room temperature, 323
- Ibuprofen, inhibitory effect of, on cholinergic and histamineinduced contractions of guinea-pig isolated ileum, 165
- Ileum, effects of non-steroidal anti-inflammatory drugs on cholinergic and histamine-induced contractions of isolated guinea-pig, 165
- Imipramine, effect of, on 5-HT metabolism in discrete areas of rat brain, modification by ethinyloestradiol and progesterone of, 309P
- Immune reactions, cell-mediated, effects of metiamide on, in guinea-pig, 441
- Implantation, role of tamoxifen in, in mouse, 517
- Indomethacin, effect of, on circular muscle strips from dog arteries, 499
- , gastric mucosal damage induced by, mechanisms underlying, 455
- --, previous treatment with, effect of, on anorexia in rats, 409
- --, comparison of inhibitory activity of, with N-0164 against thromboxane and prostaglandin formation from arachidonic acid, 135
- --, inhibitory effect of, on cholinergic and histamineinduced contractions of guinea-pig isolated ileum, 165
- --, selective inhibitory action of, and N-0164 on prostaglandins and thromboxanes from arachidonic acid,
- Inflammation, comparative effects of PGE, bradykinin and histamine on canine synovial vascular permeability, 251
- -, effect of local elevation of leucocyte cyclic AMP on migration of leucocytes to site of acute, in rat pleural cavity, 205
- -, evidence for prostaglandin release and action in, in the rabbit, 291P
- , presence of prostaglandin-like material in carrageenininduced rat hind paw, 290P
- Insulin, drugs altering secretion of, effects on plasma and brain concentrations of aromatic amino acids and on brain 5-HT turnover, 401

- Isoprenaline, effect of, on cyclic AMP content and mechanical activity of cold-stored and fresh taenia caecum from guinea-pig, 529
- ---, activity of, on venous and arterial smooth muscle in vitro compared with glyceryl trinitrate, 155
- ---, cardiac responses of anaesthetized dogs to, following uptake blockade, 287P
- --, causes dose-dependent reductions in hepatic arterial vascular resistance in the dog at doses above threshold, 239
- --, comparison of effects of, with those of UK-14,275, 284P
- --- , effects of, on cardiovascular system in pentobarbitoneanaesthetized rats, 107
- --, effect of, on D600-induced changes in output by isolated frog heart at different temperatures, 282P
- -- , pharmacological actions of racemic, compared with its oxymethylene derivative, 197
- --, relative efficacies of three trachea-atria selective  $\beta$ -adrenoceptor agonists compared with, in the guinea-pig, 255

Iso-renin, measurement of, in the rat brain, 281P

#### K

Ketamine, self-induction of metabolism by, in rat, 295P Kidney, rabbit, effect of angiotensin I converting enzyme inhibitor on release of prostaglandins by, in vivo, 573

**Kininogen,** depletion of, effect of methylprednisolone on, during feline endotoxin shock, 471

85Krypton, clearance of, following portal venous and hepatic arterial injection as measure of liver blood flow, 278P

#### L

L9394, effects of, on adrenergic transmission in cat spleen, 286P

LPH 1-91, lipotropin, analgesic effect of, 445

LPH 61-65, met-enkephalin, analgesic effect of, 445

LPH 61-78, analgesic effect of, 445

LPH 61-91, C-fragment of lipotropin analgesic effect of, 445

Leucocytes, cyclic AMP and migration of, in vivo, 205

Levodopa, possible mechanism of adverse reaction following treatment with, plus benserazide, 55

Levorphanol, effect of, on accumulation of homovanillic and 5-hydroxyindole acetic acids in rat choroid plexus, 363

Linolenic acid, effect of, on food intake in rats, 409

- , effect of, on food intake in rats, 409

Lipotropin, C fragment of, and endogenous potent analgesic peptide, 445

Lithium, excitatory action of iontophoretically administered, on mammalian central neurones, 185

Lithium sulphate, effects of, on behavioural changes induced by olfactory bulb ablation in rat, 521

- Liver, blood flow measurement with <sup>85</sup>krypton clearance by portal venous and hepatic arterial injection routes, 278P
- , histamine H<sub>1</sub>- and H<sub>2</sub>-receptor populations in vascular beds of the dog, 123
- -, metabolism of tryptophan following portocaval anastomosis, 277P
- Liver microsomes, hamster, irreversible protein binding of [14C]-practolol metabolites to, 319P

- Luteal steroid, human, effect of cloprostenol on secretion of, in vitro, 425
- Lysergic acid diethylamide, effect of, on release of NA from anococcygeus muscle, 305P
- Lysine, effect of, on accumulation of homovanillic acid and 5-HIAA in rat choroid plexus, 363

#### м

- Me 454, relative efficacy of, compared with isoprenaline as a selective trachea-atria  $\beta$ -adrenoceptor agonist in the guinea-pig, 255
- Me 506, relative efficacy of, compared with isoprenaline as a selective trachea-atria  $\beta$ -adrenoceptor agonist in the guinea-pig, 255
- 5-Me-ODMT, effect of, on cataleptic response to various neuroleptics in rats, 267P
- --, rotational responses to, following unilateral 5,6-DHT lesions in median forebrain bundle, 265P
- Mecamylamine, histamine-induced tachycardia in anaesthetized cats persists following treatment with, 285P
- --, effect of, on cardiovascular effects of pindolol in DOCA/saline hypertensive rats, 461

Medazepam, interaction of, with pentobarbitone in mouse,

Mefenamic acid, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig ileum, 165

Mephenesin, effects of, on isolated hemisected spinal cord of immature rat, 273P

Meprobamate, effects of, on isolated hemisected spinal cord of immature rat, 273P

- Mepyramine, effect of, on histamine-induced tachycardia in anaesthetized cats, 285P
- --, effect of, on histamine response of dog hepatic vascular bed, 123
- -- , has no effect in combination with burimamide, on acute pulmonary effects of endotoxin, 209
- ---, effect of, on anaphylactic reactions to endotoxin in guinea-pig tissues, 369

Met-enkephalin, effect of, after infusion in cat, 445

- ---, comparison of potency of, with C-fragment and morphine in cat brain stem. 272P
- Metanephrine, effect of, on cardiac responses of anaesthetized dogs to isoprenaline, noradrenaline and sympathetic nerve stimulation, 287P
- Methadone, has hypothermic and hyperthermic action in rats, 323
- Methionine, S-adenosyl, presence of, during enzymatic degradation of histamine by human skin, 583
- 5-Methoxy-N,N-dimethyltryptamine, see 5MeODMT, 265P
   3-Methoxy-4-hydroxyphenylethylene glycol, metabolic fate of, in man, 280P
- 4-Methylhistamine, effects of, a selective H<sub>2</sub>-receptor agonist, on tissue blood flow and cardiac output in the
- Methylprednisolone, effects of, on kininogen depletion, on pulmonary circulation and on survival during feline endotoxin shock, 471
- Methysergide, effect of, on morphine and fluphenazine antagonism of dopamine-induced hyperactivity in the rat, 266P
- —, effect of, on neuroleptic-induced catalepsy in rats, 267P

- --, has no effect on acute pulmonary effects of endotoxin, 209
- Metiamide, effects of, on cell-mediated immune reactions in guinea-pig, 441
- --, effect of, on histamine response of dog hepatic vascular bed, 123
- Metoclopramide, effects of, on cerebral dopamine pathways, 268P
- MHPG, see 3-methoxy-4-hydroxyphenylethylene glycol, 280P
- Mianserin, effect of, on behavioural changes induced by olfactory bulb ablation in rat, 521
- Monoamine oxidase, types A and B, evidence for dopamine deamination by, in rat brain in vivo, 343
- --, inhibitor of, role of tryptamine in behavioural changes caused by, 307P
- --, activity of, at different levels of rat spinal cord, 308P
- ---, effect of diazepam and bromazepam treatment on midbrain activity of, 3
- Monoamine oxidation, in tissues of developing chick, 306P Monoamine synthesis, evidence for presynaptic regulation of 310P
- Monoamines, plasma and adrenal, effect of hypophysectomy and adrenalectomy on, in pregnant and non-pregnant rats, 385
- Morphine, effect of, on accumulation of homovanillic and 5hydroxyindoleacetic acids in choroid plexus of rats, 363
- --, effects of, compared with C-fragment of lipotropin, 445
- --, effect of buprenorphine on dependence on, in mouse, 537
- ---, animal pharmacology of, in comparison with buprenorphine, an oripavine analgesic agent, 547
- ---, antagonizes dopamine-induced hyperactivity in rat nucleus accumbens, 266P
- --- , comparison of potency of, with C-fragment and metenkephalin in cat brain stem, 272P
- , has hyperthermic and hypothermic action in rats, 323
   , influencing self-administration of, in dependent rats, 276P
- Motor nerves, responses of, in the rat lumbar spinal cord to electrophoretically applied dopamine, 29
- Mucosa, gastric, damage to, mechanisms underlying, 455
- canine gastric, blood flow and acid secretion in, effects of aspirin-like drugs on, 499
- Muscimol, comparison of GABA-like properties of flurazepam and baclofen with, a GABA agonist, 263P Muscle, mammalian skeletal, effect of adrenaline on in-
- tracellularly recorded action potentials of, 299P

  ---, dissimilarity between ATP and nerve response in pig longitudinal smooth, 221
- Myocardium, canine, effects of atenolol on regional myocardial blood flow and ST segment elevation in, 433

#### ٨

- N-0164, comparison of inhibitory activity of, with indomethacin against thromboxane and prostaglandin formation from arachidonic acid, 135
- --- , inhibitory actions of, on biosynthesis of prostaglandins and thromboxanes from arachidonic acid, 135
- —, sodium p-benzyl-4-[1-oxo-2-(4-chlorobenzyl)-3-phenylpropyl| phenyl phosphate, 135
- Naloxone, effect of pretreatment with, on morphine consumption in dependent rats, 276P

- —, effect of, on analgesic effects of C-fragment of lipotropin, 445
- --, effect of, on accumulation of homovanillic and 5-HIAA in rat choroid plexus, 363
- --, effect of, on effect of buprenorphine in monkey, 537
- Nasal vasculature, effect of phentolamine on responses of, of cat, to cervical sympathetic stimulation, 314P
- Neostigmine, enhances excitatory component of nerve response to transmural electrical stimulation in pig longitudinal smooth muscle, 221
- ---, has similar effect to ecothiopate on generation of nerve and muscle repetitive activity in rat phrenic nervediaphragm preparation, 45
- --, action of, on ligated renal pedicles, 555
- Neurones, noradrenergic, peripheral, an examination of effect of tetrabenazine on, 303P
- --, 5-HT, do they support self-stimulation, 320P
- Neurotransmitter release, relationship between and nerve terminal ATPase, 312P
- Nicotine, development of nicotinic responses in rat adrenal medulla and long term effects of neonatal administration of, 59
- --, effect of, on nerve response to transmural electrical stimulation in pig longitudinal smooth muscle, 221
- ---, effects of, on rat substantia nigra neurones, 271P
- Nictitating membrane, effect of phentolamine on responses of, of cat to cervical sympathetic stimulation, 314P
- Niflumic acid, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- **Nitrazepam,** effect of, on action of pentobarbitone in mouse, 393
- Nitroglycerine, effect of, on cyclic AMP content and mechanical activity of cold-stored and fresh taenia caecum from guinea-pig, 529
- Nomifensine, in combination with L-DOPA enhances cataleptic response to haloperidol in rats, 267P
- Non-steroidal anti-inflammatory drugs, effects of several, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- Noradrenaline, cardiac responses of anaesthetized dogs to, following uptake blockade, 287P
- --- , comparison of control cumulative dose-response curves for, with those in presence of increasing concentrations of postsynaptic α-adrenoceptor antagonists in rat anococcygeus muscle, 91
- , dopamine probably precursor of, in rat frontal cortex, 270P
- —, effect of Δ<sup>9</sup>-THC on brain concentrations of, in rat at different ambient temperatures, 65
- , effect of, on hepatic arterial vascular resistance in the dog, 239
- —, effects of, on rat substantia nigra neurones, 271P
- —, measurement of brain levels of, by measuring urine levels of MHPG a primary brain metabolite of, 280P
- —, motoneurone responses potentiated by  $\alpha$ -flupenthixol in rat lumbar spinal cord, 29
- , pharmacological actions of racemic, compared with its oxymethylene derivative, 197
- -, plasma levels of, as measure of release of, 287P
- , rat cardiovascular system responses to, and their modification by adrenoceptor blockers, 115
- -, release of labelled, in presence of L9394, 286P
- , responses of sympathetically-innervated hepatic arterial vascular bed of dog to intra-arterial injections of, 283P

- --, effect of, on cyclic AMP content and mechanical activity of cold-stored and fresh taenia caecum from guinea-pig, 529
- --, uptake of, effect of fluvoxamine on, 505
- --, synthesis of, effects of testosterone and ethinyloestradiol on, in rat hindbrain, evidence for presynaptic regulation of monoamine synthesis, 310P
- - , overflow of, in stimulated mouse vas deferens, influence of α-adrenoceptors on, 304P
- concentration of, in various regions of rat brain, effects of ether stress and betamethasone treatment of, 601
- --, effect of hypophysectomy and adrenalectomy on, in pregnant and non-pregnant rats, 385
- [3H]-noradrenaline, release of, by field stimulation and by drugs from anococcygeus muscle, 305P
- --, uptake and overflow of, in rat isolated vas deferens, 595
- Noradrenergic neurones, peripheral, an examination of effect of tetrabenazine on, 303P
- Norethisterone, pharmacokinetics of, in rabbit and rat following systemic and oral administration, 279P
- Normetanephrine, effect of addition of, on plasma noradrenaline levels, 287P
- 19-Nortestosterones, on the detectability of, in horse urine, 297P
- Nortriptyline, plasma levels of, and cardiac responses in young and old rats, 21
- Nucleus accumbens, 5-HT antagonists inhibit neuroleptic and morphine antagonism of hyperactivity induced by dopamine from the, 266P

0

- Oedema, presence of prostaglandin-like material in carrageenin-induced rat paw inflammation, 290P
- Oestradiol-17β, secretion of, in vitro, effect of cloprostenol on, 425
- --, surface coat change on mouse blastocysts induced by, tamoxifen inhibition of, 517
- Olfactory bulb ablation, in rat, behavioural changes and their reversal by antidepressant drugs, 521
- Oral contraceptives, effect of phenobarbitone on efficacy of norethisterone, 279P
- ORG 6582, effect of, on neuroleptic-induced catalepsy in rats, 267P
- Oripavine, derivative of, used as an antinociceptive agent,
- --, derivative of, used as an analgesic agent, 547
- Ouabain, comparison of effects of, with those of UK-14,275, 284P
- --- , has no effect on potassium chloride-induced relaxations of rat anococcygeus muscle, 141
- Oxazepam, levels of, a major metabolite of diazepam, reduced by pretreatment with ethanol in mice, 83
- -- , interaction of, with pentobarbitone in mouse, 393
- Oxygen consumption, of mice, effects of  $\Delta^9$ tetrahydrocannabinol on, 559
- Oxyphenbutazone, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- Oxypressin, effect of, on corticotrophin production by rat adenohypophysial tissue *in vitro*, 298P
- Oxytocin, effect of, on corticotrophin production by rat adenohypophysial tissue in vitro, 298P

Ρ

- Papaverine, activity of, venous and arterial smooth muscle *in vitro* compared with glyceryl trinitrate, 155
- --, inhibition by, of calcium-induced contractions in isolated cerebral and peripheral arteries of the dog, 35
- --, effect of, on cyclic AMP content and mechanical activity of cold-stored and fresh taenia caecum from guinea-pig, 529
- Paracetamol, effect of, on canine gastric mucosal blood flow and acid secretion, 499
- --, previous treatment with, effect of, on anorexia in rats, 409
- Pargyline, with fluvoxamine, induces 5-HT-like behavioural effects, 505
- [3H]-penbutolol, uptake and overflow of, in rat isolated vas deferens, 595
- Pentaerythritol tetranitrate, activity of, on venous and arterial smooth muscle *in vitro* compared with glyceryl trinitrate. 155
- Pentamethylenetetrazole, convulsive threshold for, reserpineinduced lowering of, antagonized by fluvoxamine, 505
- Pentobarbitone, effects of, on isolated hemisected spinal cord of immature rat, 273P
- --, effects of phenylephrine and isoprenaline on cardiovascular system of rats anaesthetized with, 107
- --, sleeping times, effect of benzodiazepines on, in mouse,
- **Peripheral arteries,** less sensitive than cerebral arteries to interference with the transmembrane flux of Ca<sup>2+</sup> in the dog, 35
- Peripheral resistance, on-line computation of, in conscious cat obtained using a chronically implanted electromagnetic flow transducer, 312P
- Pethidine, has hypothermic and hyperthermic action in rats, 323
- Phenazone, effect of nitrazepam on metabolism of, in mouse, 393
- Pheneturide, effects of, on isolated hemisected spinal cord of immature rat. 273P
- Phenobarbitone, effect of, on pharmacokinetics of systemic and oral norethisterone in rabbit and rat, 279P
- [14C]-phenobarbitone, metabolic fate of, in rat, and effect of chronic administration and dose size, 295P
- Phenoxybenzamine, attenuates central effects of dopamine but not apomorphine in adult and young fowl, 269P
  - -- , blocks postsynaptic α-adrenoceptors in preference to presynaptic ones, 91
- --- , effects of increasing concentrations of, on cumulative clonidine and noradrenaline dose-response curves in stimulated vas deferens and rat anococcygeus muscle respectively, 91
- --, has no effect on vasopressin-induced changes in ADH release in anaesthetized dogs, 77
- Phenoxypropanolamines, catechol-substituted, and adrenoceptor activity in the anaesthetized cat, 197
- Phentolamine, antagonizes hepatic arterial vasoconstriction caused in dog by phenylephrine, noradrenaline and adrenaline, 239
- --- , effects of increasing concentrations of, on cumulative clonidine and noradrenaline dose-response curves in stimulated vas deferens and rat anococcygeus muscle respectively, 91
- , effect of, on central effects elicited in young and adult fowl by dopamine and apomorphine, 269P

- --, modification of response of rat cardiovascular system to noradrenaline infusions by, 115
- --, more potent in blocking presynaptic than postsynaptic α-adrenoceptors, 91
- --, effect of, on plasma and brain concentrations of aromatic amino acids and brain 5-HT turnover, 401
- --, effect of, on responses of nasal vasculature and nictitating membrane of cat to cervical sympathetic stimulation, 314P
- Phenylbutazone, inhibitory effect of, on cholinergic and histamine-induced contractions of guinea-pig isolated ileum, 165
- --, interaction between, and warfarin sodium in rats, 280P
   Phenylephrine, causes vasoconstriction of the sympathetically-innervated hepatic arterial vascular bed of dog, 283P
- --, effects of, on cardiovascular system in pentobarbitoneanaesthetized rats, 107
- --, raises hepatic arterial vascular resistance in the dog, 239
- --, effect of, on cyclic AMP content and mechanical activity of cold-stored and fresh taenia caecum from guinea-pig, 529
- Phenylethylamine, effect of drugs on monoamine oxidase oxidation of, 343
- β-Phenylethylamine, some characteristics of metabolism of, in rat isolated lung, 294P
- Phenytoin, effect of, on ATPase activity and release of ACh from synaptosomes, 300P
- **Phosphodiesterase,** activity of, in guinea-pig taenia caecum, effect of cold storage on, 529
- **Physostigmine,** pretreatment with, potentiates acetylcholine response of rat substantia nigra neurones, 271P
- Pimozide, cataleptic response to, enhanced by amphetamine in rats, 267P
- Pindolol, cardiovascular effects of, in DOCA/saline hypertensive rats, 461
- Platelet, responses of, to bisenoic prostaglandins, 293P
- Polypeptides, hypothalamic, effect of, on corticotrophin production by rat adenohypophysial tissue *in vitro*, 298P
- Polyphloretin phosphate, pretreatment with, a prostaglandin antagonist prevents pulmonary and systemic responses to endotoxin, 209
- Portocaval anastomosis, effect of, on activity and tryptophan metabolism, 277P
- Postsynaptic potentials, role of cyclic AMP in generation of slow inhibitory, in bullfrog sympathetic ganglion cells, 331
- Potassium, effect of, on efflux of [3H]-GABA from rat dorsal medulla in vivo and in vitro, 274P
- , pretreatment with, has partial blocking effect on prenylamine-induced contracture of frog skeletal muscle, 97
- Potassium chloride, nature of the relaxations of rat anococcygeus muscle induced by, 141
- [14C]-practolol, uptake and overflow of, in rat isolated vas deferens, 595
- metabolites of, irreversible protein binding of, to hamster liver microsomes, 319P
- Prazosin, blocks postsynaptic  $\alpha$ -adrenoceptors in preference to presynaptic ones, 91
- , effects of increasing concentrations of, on cumulative clonidine and noradrenaline dose-response curves in stimulated vas deferens and rat anococcygeus muscle respectively, 91
- **Prenylamine,** contraction of frog skeletal muscle induced by, 97

- --, effects of, on excitation-contraction coupling in frog sartorius muscle, 97
- ---, increases the calcium efflux at all concentrations that produce contracture of frog sartorius muscle, 97
- Pressinoic acid, effect of, on corticotrophin production by rat adenohypophysial tissue in vitro, 298P
- Presynaptic receptors, and their role in the regulation of transmitter release, 481
- Probenecid, effect of, on accumulation of homovanillic acid and 5-HIAA in rat choroid plexus, 363
- Procaine, abolishes potassium chloride-induced relaxations of rat anococcygeus muscle, 141
- --, cannot block prenylamine-induced contracture of frog skeletal muscle, 97
- Proceedings of the British Pharmacological Society, Liverpool, 30-31 March, 1977, 263-320P
- Progesterone, modification by, of effects of imipramine on 5-HT metabolism in discrete areas of rat brain, 309P
- --, secretion of, in vitro, effect of cloprostenol on, 425
- Propranolol, effect of, on cardiac responses to UK-14,275, 284P
- --, effect of, on hepatic arterial vascular response to phenylephrine, isoprenaline, noradrenaline and adrenaline, 239
- --, effect of, on histamine-induced tachycardia in anaesthetized cats, 285P
- ---, effect of pretreatment with, on responses of sympathetically-innervated dog hepatic arterial vascular bed to intra-arterial injections of dopamine, adrenaline and noradrenaline, 283P
- --, modification of response of rat cardiovascular system to noradrenaline infusions by, 115
- --, pretreatment with, blocks the diuretic response to vasopressin in anaesthetized dogs, 77
- --, effect of, on plasma and brain concentrations of aromatic amino acids and on brain 5-HT turnover, 401
- --, effect of, on cardiovascular effect of pindolol in DOCA/saline hypertensive rats, 461
- dimethylquaternary, inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACH release, 316P
- ---, effect of, on isoprenaline-induced relaxation and cyclic AMP accumulation in guinea-pig taenia caecum, 529
- [14C]-(±)-propranolol, uptake and overflow of, in rat isolated vas deferens, 595
- 2-n-Propyl-4-p-tolylamino-1,2,3-benzo triazinium iodide, effect of, on frog rectus abdominis, 375
- Prostaglandin, a pulmonary vasoconstrictor, may be involved in acute pulmonary response of the cat to endotoxin, 209
- --- , presence of material similar to, in carrageenin-induced rat hind paw inflammation, 290P
- --- , effect of addition of, on reactions of guinea-pig ileum to non-steroidal anti-inflammatory drugs, 165
- ---, release and action of, in inflammation in the rabbit, 291P
- ---, selective inhibitory action of N-0164 and indomethacin on, from arachidonic acid, 135
- ---, precursors, anorectic activity of, 409
- --, secretion of, in vitro, effect of cloprostenol on, 425
- --, -like material, detection of small amounts of, released into blood of rat, 317P
- --- , actions of, and mechanisms underlying gastric mucosal damage induced by indomethacin and bile salts, 455
- --- , release of, by rabbit kidney in vivo, effect of angiotensin I converting enzyme inhibitor on, 573

--, bisenoic, selective inhibition of platelet responses to, 293P

**Prostaglandin** E<sub>1</sub>, effects of, on canine synovial vascular permeability, 251

**Prostaglandin**  $E_2$  reversal of effect of, on adrenal catecholamine release after hypophysectomy, 477

Prostaglandin  $F_{2\alpha}$ , anorectic activity of, 409

 - , possible role of, as mediator of acute pulmonary effects of endotoxin, 209

Prostaglandins D and F, with highly agonist actions, 315P Prostaglandins E<sub>1</sub>, E<sub>2</sub>, F<sub>1a</sub>, F<sub>2a</sub>, effect of, on circular muscle strips from dog arteries, 499

Protein binding, of ascorbic acid, effect of aspirin on, 300P
 irreversible, of [¹⁴C]-practolol metabolites to hamster liver microsomes, 319P

Proteins, axonal transport of, in rabbit vagus nerve, effects of chloroquine and other retinotoxic drugs on, 302P

Prothrombin times, as measure of effect of phenylbutazone or carbenoxolone on anticoagulation induced by warfarin in vivo, 280P

**Protriptyline,** plasma concentrations and cardiotoxic effects of, in the rat, 11

**Pulmonary circulation,** effect of methylprednisolone on, during feline endotoxin shock, 471

Pyridostigmine, action of, on ligated renal pedicles, 555

#### Q

Quaternary ammonium compounds, inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACh release, 316P

Quipazine, effect of, on cataleptic response to various neuroleptics in rats. 267P

#### R

Rabbit aorta contracting substance, detection of small amounts of, released into blood of rat, 317P

'Rebound' phenomenon, alterations in brain 5-HT metabolism following chronic treatment with diazepam and bromazepam, 3

Renal pedicles, ligation of, effect of, on action of neostigmine and pyridostigmine, 555

Renin, intrarenal stimulation of secretion of, by frusemide in isolated rat kidney, 73

Repetitive activity, generation of nerve and muscle, in rat phrenic nerve-diaphragm preparation following inhibition of cholinesterase by ecothiopate, 45

Reserpine, effects of, effect of fluvoxamine on, 505

--, effect of, on choline acetyltransferase and high affinity choline uptake in rat brain, 301P

Retinotoxic drugs, effects of, on axonal transport of proteins in rabbit vagus nerve, 302P

Rotational behaviour, GABA-like properties of flurazepam and baclofen suggested by, following unilateral intranigral injection, 263P

--, possible role for 5-HT in control of, 265P

S

SQ 20881, angiotensin I converting enzyme inhibitor, effect of, on release of prostaglandins by rabbit kidney in vivo, 573 ST segment, elevation of, in canine myocardium, effects of atenolol on regional myocardial blood flow and, 433

Su 15049A, diuretic response to, in mice, sex difference in, 569

Saccharin, effect of addition of, to morphine solutions on self-administration by dependent rats, 276P

Salbutamol, activity of, on venous and arterial smooth muscle in vitro compared with glyceryl trinitrate, 155

 --, effect of, on β-adrenoceptors in dog hepatic arterial vascular system, 239

Salicyclic acid, prevents inhibition by aspirin of arachidonic acid-induced hypotension, bronchoconstriction and thrombocytopenia, 292P

Saline, and DOCA, hypertension induced by, in rats, cardiovascular effects of pindolol during, 461

Sartorius muscle, effect of prenylamine on the excitationcontraction coupling in frog, 97

Sea snake, electrophysiological study of action of crude Enhydrina schistosa venom, 233

Self-stimulation, do 5-HT neurones support, 320P

Sex difference, in diuretic response to ethacrynic acid in mice, 569

Skin, human, enzymatic degradation of histamine by, 583 Smooth muscle, comparative effects of glyceryl trinitrate on venous and arterial, in vitro, 155

Sodium, loss of, as effect of diuretics on water and electrolyte excretion in horses, 589

Sodium-p-benzyl-4-[1-oxo-2-2(4-chlorobenzyl)-3-phenylpropyl] phenyl phosphonate, see N-0164, 135

Sodium meclofenamate, pretreatment with, a prostaglandin synthetase inhibitor prevents pulmonary and systemic responses to endotoxin, 209

Sodium nitrite, comparison of effects of, on venous and arterial smooth muscle in vitro and relevance to antianginal activity, 155

Sodium taurocholate, gastric mucosal damage induced by, mechanisms underlying, 455

[14C]-D-sorbitol, uptake and overflow of, in rat isolated vas deferens, 595Spinal cord, effects of central depressant drugs on isolated

hemisected, of immature rat, 273P

--, rat, different levels of, monoamine oxidase activity at,

--, rat, different levels of, monoamine oxidase activity at 308P

Steroid, human luteal, effect of cloprostenol on secretion of, in vitro, 425

Steroids, anabolic, on the detectability of, in horse urine, 297P

Spiroperidol, attenuates central effects of apomorphine in adult and young fowl, 269P

Spleen, effects of L9394 on adrenergic transmission in cat, 286P

Streptozotocin, effect of, on plasma and brain concentrations of aromatic amino acids and on 5-HT turnover in brain, 401

Stroke volume, on-line computation, of, in conscious cat obtained using a chronically implanted electromagnetic flow transducer, 312P

 increased by phenylephrine but unchanged by isoprenaline in the rat, 107

Substance P, effect of various central depressant drugs on response of isolated hemisected spinal cord of immature rat to, 273P

Substantia nigra, actions of cholinometics and catecholamines on rat, 271P

Sulpiride, effects of, on cerebral dopamine pathways, 268P

- Sulphamethoxypyridazine, effect of, on liver and plasma levels of vitamin A in rats, 181
- Sulphonamides, effect of binding property of, to plasma proteins on a vitamin A compound also transported by plasma proteins, 181
- Sulphuric acid, conjugates with MHPG in periphery but not in central nervous system, 280P
- Sympathetic ganglia, effects of dibutyryl cyclic AMP and theophylline on bullfrog, 331
- Synaptosomes, brain, effect of fluvoxamine on 5-HT uptake by, 505
- --, transmitter release from, and ATPase activity, 300P
- Synovial permeability, comparative effects of PGE<sub>1</sub>, bradykinin and histamine on canine, 251

#### T

- Tachycardia, induced by histamine in anaesthetized cats, 285P
- **Tachyphylaxis,** induced by repeated administration of vasopressin in anaesthetized dogs, 77
- Taenia caecum cold-stored and fresh, effect of isoprenaline and phenylephrine on cyclic AMP content and mechanical activity of, from guinea-pig, 529
- Tamoxifen, inhibition by, of an *in vitro* oestradiol-induced surface coat change on mouse blastocysts, 517
- Testosterone, effects of, on synthesis of NA and 5-HT in rat hindbrain, evidence for a presynaptic regulation of monoamine synthesis, 310P
- **Tetrabenazine,** pretreatment with, blocks the diuretic response to vasopressin in anaesthetized dogs, 77
- ---, an examination of action of, on peripheral noradrenergic neurones, 303P
- Tetrabutylammonium, inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACh release, 316P
- **Tetraethylammonium,** inhibition of Na<sup>+</sup>-K<sup>+</sup>-ATPase by, and stimulation of ACh release, 316P
- $\Delta^9$ -Tetrahydrocannabinol, effects of, on rats of oxygen consumption of mice, 559
- -, effect of, on body temperature and brain amine concentrations in rat at different ambient temperatures, 65
- Tetrodotoxin, abolishes potassium chloride-induced relaxations of rat anococcygeus muscle, 141
- , effect of, on nerve responses of pig longitudinal smooth muscle, 221
- Theophylline, comparison of effects of, with those of UK-14,275, 284P
- effects of, and dibutyryl cyclic AMP on bullfrog sympathetic ganglion cells, 331
- Thioridazine, effect of, on axonal transport of proteins in rabbit vagus nerve, 302P
- Thrombocytopenia, salicylic acid prevents inhibition by aspirin of arachidonic acid-induced, 292P
- Thromboxane A<sub>2</sub>, aggregation and generation of activity of, in arachidonic acid platelet-rich plasma incubates pretreated with salicylic acid before aspirin, 292P
- Thromboxanes, selective inhibitory actions of N-0164 and indomethacin on prostaglandins and, from arachidonic acid, 135
- Tolbutamide, effect of, on plasma and brain concentrations of aromatic amino acids and brain 5-HT turnover, 401

- Trachea, relative efficacy of isoprenaline and three  $\beta$ -adrenoceptor agonists selective for, in the guinea-pig, 255
- Transmitter release, presynaptic receptors and their role in, 481
- from synaptosomes, and ATPase activity, 300P
- **Tranyleypromine,** role of tryptamine in behavioural changes caused by, 307P
- --, effect of, on monoamine oxidase, 343
- **Trimetazidine,** activity of, on venous and arterial smooth muscle *in vitro* compared with glyceryl trinitrate, 155
- Tryptamine, role of, in behavioural changes caused by a monoamine oxidase inhibitor and L-tryptophan, 307P
- Tryptophan, effects of, and portocaval anastomosis on activity and brain metabolism of, 277P
- ---, mid-brain concentrations of, during and following chronic treatment with diazepam and bromazepam, 3
- --, effect of, on accumulation of homovanillic acid and 5-HIAA in rat choroid plexus, 363
- . effects of drugs altering insulin secretion on, 401
- L-Tryptophan, effect of, on monoamine oxidase, 343
- --- , role of tryptamine in behavioural changes caused by, 307P
- **Tryptophan hydroxylase,** activity of mid-brain, during and following chronic treatment with diazepam and bromazepam, 3
- **Tuberculin,** effect of metiamide on reaction of guinea-pig to, 441
- Tubocurarine, abolishes nerve repetitive activity and depresses muscle repetitive activity at low concentrations, 45
- ---, effect of addition of ecothiopate to rat phrenic nervediaphragm preparation pretreated with, on nerve and muscle activity, 45
- (+)-Tubocurarine, neuromuscular blockade by, action of neostogmine and pyridostigmine of, 555
- **Tyramine,** effect of L9394 on release of labelled noradrenaline induced by 286P
- --- , effect of, on release of NA from anococcygeus muscle, 305P
- , derivatives of, effect of fluvoxamine on effect of, on 5-HT depletion, 505
- **Tyrosine hydroxylase,** induction of, by neonatal rats following neonatal administration of nicotine, 59

#### U

UK-14,275, a novel orally-active cardiac stimulant, 284P Urine, horse, on the detectability of anabolic steroids in, 297P

#### V

- Vagus nerve, rabbit, axonal transport of proteins in, effects of chloroquine and other retinotoxic drugs on, 302P
- $\sqrt{as}$  deferens, rat isolated, uptake and overflow of radiolabelled β-adrenoceptor blocking agents by, 595
- —, mouse stimulated, overflow of NA in, influence of  $\alpha$ -adrenoceptors on, 304P
- Vasculature, nasal, effect of phentolamine on responses of, of cat to cervical sympathetic stimulation, 314P

Vasodilatation, reflex, in dog, effects of guanethidine on histamine release during, 379

Vasodilators, differing susceptibility of canine cerebral and peripheral arteries to various, 35

Vasopressin, central mechanism for changes in ADH release induced by, 77

 , and analogues, effects of, on corticotrophin production by rat adenohypophysial tissue in vitro, 298P

Vasotocin, arginine, effect of, on corticotrophin production by rat adenohypophysial tissue *in vitro*, 298P

Venom, electrophysiological study of action of crude, from Enhydrina schistosa, 233

Verapamil, inhibition by, of calcium-induced contractions in isolated cerebral and peripheral arteries of the dog, 35

Vitamin A, effect of sulphamethoxypyridazine on liver and plasma levels of, in rats, 181

#### W

Warfarin, interaction between carbenoxolone sodium and, sodium, 280P

Water, and electrolytes, faecal excretion of, in horses, effects of diuretics on, 589

X

Xylocholine, inhibition of Na+-K+-ATPase by, and stimulation of ACh release, 316P

Υ

Yohimbine, effects of increasing concentrations of, on cumulative clonidine and noradrenaline dose-response curves in stimulated vas deferens and rat anococcygeus muscle respectively, 91

 --, more potent in blocking presynaptic than postsynaptic α-adrenoceptors, 91

Z

Zinc, effect of, on anaphylaxis in vivo in guinea-pig, 607

#### INSTRUCTIONS TO AUTHORS

Papers will be considered for publication on all aspects of drug action, including chemotherapy. A recent issue of the Journal is a good guide to style.

Manuscripts (two copies) should be sent to Dr A. Ungar, Department of Pharmacology, University of Edinburgh Medical School, 1 George Square, Edinburgh, EH8 9JZ, from whom copies of the full Instructions to Authors, published in *Br. J. Pharmac*, 50, 3–23, may also be obtained. Specific points to note are:

- 1. Manuscript should be typed in double spacing on one side of paper not larger than A4  $(206 \times 294 \text{ mm})$ . There should be a separate title page giving the names and addresses of the authors in alphabetical order. A short title of not more than 50 letters should also be suggested.
- 2. Statement Papers are accepted only if accompanied by a statement that they have not been and will not be published in whole or in part in any other Journal.
- 3. Summary (2 copies) This should be a short summary of results and conclusions arranged in numbered paragraphs.
- 4. Abstract (2 copies) An abstract of about 100 words suitable for inclusion in an abstracting journal should be typed on a separate sheet, giving the author's name and address and the title of the paper.
- 5. Figures These should not be larger than A4  $(206 \times 294 \text{ mm})$  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.

- 6. Tables These should not have more than 85 characters to a line (counting spaces between columns as 4 characters) and certainly not more than 110 characters to a line, unless absolutely unavoidable. Figure legends and tables should be typed on separate sheets of paper.
- 7. References These should 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 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.

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. No reprints of abstracts are supplied.

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

# British Journal of Pharmacology

**VOLUME 60 NUMBER 4 AUGUST 1977** 

- LANGER, S.Z. Presynaptic receptors and their role in the regulation of transmitter release
  - 499 BENNETT, A. & CURWAIN, B.P. Effects of aspirin-like drugs on canine gastric mucosal blood flow and acid secretion
  - 505 CLAASSEN, V., DAVIES, J.E., HERTTING, G. & PLACHETA, P. Fluvoxamine, a specific 5-hydroxytryptamine uptake inhibitor
  - 517 BLOXHAM, P.A. & PUGH, D.M. Tamoxifen inhibition of an *in vitro* Oestradiol-induced surface common change on mouse blastocysts
  - 521 VAN RIEZEN, H., SCHNIEDEN, H. & WREN, ALLISON F. Olfactory bulb ablation in the rat: behavioural changes and their reversal by antidepressant drugs
  - 529 HONDA, F., KATSUKI, S., MIYAHARA, J.T. & SHIBATA, S. Effect of isoprenaline and phenylephrine on the adenosine 3',5'-monophosphate content and mechanical activity of cold-stored and fresh taenia caecum from the guinea-pig
  - 537 COWAN, A., LEWIS, J.W. & MACFARLANE, I.R. Agonist and antagonist properties of buprenorphine, a new antinociceptive agent
  - 547 COWAN, A., DOXEY, J.C. & HARRY, E.J.R. The animal pharmacology of buprenorphine, an oripavine analgesic agent
  - 555 MILLER, R.D. & RODERICK, LAURA. Ligated renal pedicles and duration of action of neostigmine and pyridostigmine

- 559 PERTWEE, R.G. & TAVENDALE, R. Effects of Δ<sup>9</sup>-tetrahydrocannabinol on the rates of oxygen consumption of mice
- 569 COOLING, M.J. & SIM, M.F. An investigation of the sex difference in the diuretic response to ethacrynic acid in mice
- 573 JOHNS, E.J., MURDOCK, R. & SINGER, BERTHA. The effect of angiotensin I converting enzyme inhibitor (SQ 20881) on the release of prostaglandins by rabbit kidney, in vivo
- 583 FRANCIS, D., GREAVES, M.W. & YAMAMOTO, S. Enzymatic histamine degradation by human skin
- 589 ALEXANDER, F. The effect of diuretics on the faecal excretion of water and electrolytes in horses
- 595 LEWIS, M.J. The uptake and overflow of radiolabelled β-adrenoceptor blocking agents by the isolated vas deferens of the rat
- 601 VELLUCCI, SANDRA V. The effects of ether stress and betamethasone treatment on the concentrations of noradrenaline and dopamine in various regions of the rat brain.

#### SHORT COMMUNICATIONS

607 CHO, C.H., DAI, S. & OGLE, C.W. The effect of zinc on anaphylaxis *in vivo* in the guinea-pig