

CHAPTER - 7

REFERENCES

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- AHLQUIST, R.P. (1948). A study of the adrenotropic receptors. *Am. J. Physiol.*, 153, 586-600.
- AHLQUIST, R.P. & LEVY, B. (1959). Adrenergic receptive mechanism of canine ileum. *J. Pharmac. exp. Ther.*, 127, 146-149.
- AKCASU, A. (1959). The physiologic and pharmacologic characteristics of the tracheal muscle. *Archs. int. Pharmacodyn.*, 122, 201-207.
- ALIEN, G.S., RAND, M.J. & STORY, D.F. (1974). Effects of the muscarinic agonist McN-A-343 on the release by sympathetic nerve stimulation of ³H-noradrenaline from rabbit isolated ear arteries and guinea pig atria. *Br. J. Pharmac.*, 51, 29-35.
- ANDEN, N.E. (1964). Uptake and release of dextro and laevoadrenaline in noradrenaline stores. *Acta Pharmac., tox.*, 21, 59-75.
- ANDEN, N.E., CARLSSON, A. & WALDECK, B. (1963). Reserpine resistant uptake mechanisms of noradrenaline in tissues. *Life Sc., Oxford*, 2, 889-894.
- ANDEN, N.E., FLUXE, K. & HOKFELT, T. (1967). Effect of some drugs on central monoamine nerve terminals lacking nerve impulse flow. *Europ. J. Pharmac.*, 1, 226-232.
- ANGEIAKOS, E.T. (1964). Histochemical demonstration of uptake of exogenous norepinephrine by adrenergic fibres in vitro. *Science*, 145, 503-504.
- ANGGARD, E. & BERGSTROM, S. (1963). Biological effects of an unsaturated trihydroxy acid (PGF_{2α}) from normal swine lung. *Acta Physiol. Scand.*, 58, 1-12.
- ANTON, A.H. & SAYRE, D.F. (1962). A study of the factors affecting the aluminium oxide-trihydroxyindole procedure for the analysis of catecholamines. *J. Pharmac. exp. Ther.*, 138, 360-375.
- ARIENS, E.J. (1954). Affinity and intrinsic activity in the theory of competitive inhibition. Part I, Problems and theory, *Archs int. Pharmacodyn.*, 99, 32-49.
- ARIENS, E.J. (1964). The mode of action of biologically active compounds. In *Molecular Pharmacology*. ed. Ariens, E.J. Vol. 1, pp. 1-64. New York: Academic Press.
- ARIENS, E.J. (1967). The structure-activity relationship of beta adrenergic drugs and beta-adrenergic blocking drugs. *Ann. N.Y. Acad. Sci.*, 139, 606-631.
- ARIENS, E.J., VAN ROSSUM, J.M. & SIMONIS, A.M. (1959). Affinity, intrinsic activity and drug interactions. *Pharmac. Rev.* 9, 218-236.

- ARIENS, E.J. & SIMONIS, A.M. (1964). A molecular basis for drug action. *J. Pharm. Pharmac.*, 16, 137-157 and 289-312.
- ARUNIAKSHANA, O. & SCHLID, H.C. (1959). Some quantitative use of drug antagonist. *Br. J. Pharmac. Chemother.*, 14, 48-58.
- APYA, P.C. & GULATI, O.D. (1968). Cholinergic link hypothesis and sympathetic transmission at the nictitating membrane of the dog. *Br. J. Pharmac.*, 33, 413-425.
- AUSTIN, L., LEVITT, B.G. & CHUBB, I.W. (1967). Increased synthesis and release of noradrenaline and dopamine during nerve stimulation. *Life Sci., Oxford*, 6, 97-104.
- AVAKIAN, O.V. & GILLESPIE, J.S. (1968). Uptake of noradrenaline by adrenergic nerves, smooth muscle and connective tissue in isolated perfused arteries and its correction with the vaso constrictor response. *Br. J. Pharmac. Chemother.*, 32, 168-184.
- AWAPARA, J., LANDUA, A.J., FUEEST, R. & SEALE, B. (1950). Free γ -aminobutyric acid in brain. *J. biol. chem.*, 187, 35-39.
- AXELFOD, J. (1962a). The enzymatic N-methylation of serotonin and other amines. *J. Pharm. exp. Ther.*, 138, 28-33.
- AXELFOD, J. (1962b). Purification and properties of phenylethanolamine-N-methyl transferase. *J. biol. Chem.*, 237, 1657-1660.
- AXELFOD, J. (1966). Methylation reactions in the formation and metabolism of catecholamines and other biogenic amines. *Pharmac. Rev.*, 18, 95-113.
- AXELFOD, J., WETI-MALHEFBE H. & TOMCHICK, R. (1959). The physiological disposition of H^3 -epinephrine and its metabolite: metanephrine. *J. Pharmac. exp. Ther.*, 127, 251-256.
- AXELFOD, J., HERTING, G. & PATRICK, R.W. (1961). Inhibition of norepinephrine- H^3 release by monoamine oxidase inhibitors. *J. Pharmac. exp. Ther.*, 134, 325-328.
- AYERS, A.B., DAVIES, B.N. & WITHINGTON, P.G. (1972). Responses of the isolated, perfused human spleen to sympathetic nerve stimulation, catecholamines and polypeptides. *Br. J. Pharmac.*, 44, 17-30.
- BAIDESSARINI, R.J. & YORKE, C. (1970). Effects of lithium and of pH on synaptosomal metabolism of noradrenaline. *Nature Lond.*, 228, 1301-1303.
- BARNETT, A., SYNCHOWINZ, S. & TABER, I.R. (1968). The effects of drugs inhibiting catecholamine uptake on tyramine and noradrenaline-induced contractions of the isolated rat vas deferens. *Br. J. Pharmac.*, 34, 484-492.

- BAZEMORE, A.W., ELLIOT, K.A.C. & FLORCY, E. (1957). Isolation of factor-I
J. Neurochem. 1, 334-339.
- BEAVEN, M.A. & MAICKEL, R.P. (1964). Stereoselectivity of norepinephrine
storage sites in the heart. Biochem. biophys. Res. Commun., 14, 509-513.
- BECKETT, A.H. (1959). Stereochemical factor in biological activity. In *Progress
in Drug Research*. ed. Jucker, E., Vol.1, pp. 455-530, Basel : Birkhauser Verlag.
- BEILLEAU, B. (1964). A molecular theory of drug action based on induced conforma-
tional perturbations of receptors. J. med. Chem., 7, 776-784.
- BEILLEAU, B. (1965). Conformational perturbation in relation to the regulation
of enzyme and receptor behavior. Adv. Drug Res. 2, 89-126.
- BEETI, F., LENTATI, R. & USAPADI, M.M. (1965). The specificity of prostaglandin
E₁ effects on the isolated heart. Med. Pharmac. exp. 13, 233-240.
- BEVAN, J.A. & VERITY, M.A. (1967). Sympathetic nerve free vascular muscle.
J. Pharmac. exp. Ther., 157, 117-124.
- BICKERTON, R.K. (1963). The response of isolated strips of cat spleen to sympatho-
mimetic drugs and their antagonists. J. Pharm. exp. Ther., 142, 99-110.
- BICKERTON, R.K., ROCKHOLD, W.T. & MICALIZZI, E.R. (1962). Use of isolated strips
of cat spleen for the assay of α -adrenergic blocking compounds. J. Pharm. Sci.,
51, 837-840.
- BIRKS, R.I. & MACINTOSH, F.C. (1961). Acetylcholine metabolism of a sympathetic
ganglion. Can. J. Biochem. Physiol., 39, 787-827.
- BLAKEMORE, A.G.H. & BROWN, G.I. (1963). Uptake of noradrenaline by the isolated
perfused spleen. J. Physiol. London, 169, 98-99.
- BLASCHKO, H. (1939). The specific action of -dopa decarboxylase. J. Physiol.,
London, 96, 50P - 51P.
- BLASCHKO, H., CARTER, C. W., O'BRIEN, T.R.P. & SLOANESTANLEY, G.H. (1948).
Pyridoxine in relation to amine formation in the mammalian liver. J. Physiol.,
London, 107, 18P - 19P.
- BLASCHKO, H., HAGEN, P. & WELCH, A.D. (1955). Observations on the intracellular
granules of the adrenal medulla. J. Physiol., London, 129, 27-49.
- BLIGH, J. & COTTLE, W.H. (1971). The influence of ambient temperature on the thermo-
regulatory responses to 5-hydroxytryptamine, noradrenaline and acetylcholine
injected into the lateral cerebral ventricles of sheep, goats and rabbits.
J. Physiol., London, 212, 377-392.
- BLINKS, J.R. (1967). Evaluation of the cardiac effects of several beta adrenergic
blocking drugs. Ann. N.Y. Acad. Sci., 139, 673-685.
- BLOOM, B.M. & GOLDMAN, I.M. (1966). The nature of catecholamine-adenine mononucleo-
tide interactions in adrenergic mechanisms. Adv. Drug Res. 3, 121-169.

- BOGDANSKI, D.F. & BRODIE, B.B. (1969). The effects of inorganic ions on the storage and uptake of H^3 -norepinephrine by rat heart slices. *J. Pharmac. exp. Ther.*, 165, 181-189.
- BOISTEL, J. & FATT, P. (1958). Membrane permeability change during inhibitory transmitter action in crustacean muscle. *J. Physiol., London*, 144, 176-191.
- BOGA, O., AZARNOFF, D.L. & SJOQVIST, F. (1968). Species differences in the plasma protein binding of desipramine. *J. Pharm. Pharmac.*, 20, 571-572.
- BRENNEMAN, A.R. & KAUFMAN, S. (1964). The role of tetrahydropteridines in the enzymatic conversion of tyrosine to 3,4-dihydroxy phenylalanine. *Biochem. biophys. Res. Commun.*, 17, 177-183.
- BRIATICO, G., GUSIO, G., JORI, A. & RAVAZZANI, C. (1976). Effects of contraceptives on drug metabolism in various animal species. *Br. J. Pharmac.*, 58, 173-181.
- BRIDGES, J.W. & WILLIAMS, R.T. (1963). The metabolism of 5-p-aminobenzenesulphonamido-3, methylisothiazole (suphasomizole). *J. Pharm. Pharmac.*, 15, 565-573.
- BRODIE, B.B. (1962). In *Metabolic Factors Controlling Duration of Drug Action*. Vol. 6 III, ed. Brodie, B.B. & Fidos, E.G. pp. 17-26, Oxford: Pergamon Press.
- BRODIE, B.B. & RETD, W.D. (1967). Some pharmacological consequences of species variation in rates of metabolism. *Fedn. Proc.* 26, 1062-1069.
- BPUCHOVSKY, N. & WILSON, J.D. (1969). The intranuclear binding of testosterone and 5- α -androstan-17 α -one by rat prostate. *J. viol. Chem.* 243, 5953-5960.
- BRUGGENGATE, G. T. & ENGBERG, I. (1971). Ionophoretic studies in deiteres' nucleus of the inhibitory actions of GABA and related amino acid and the interactions of strychnine and picrotoxin. *Brain Res.*, 25, 431-448.
- BURGEN, A.S.V. & IVERSEN, L.L. (1965). The inhibition of noradrenaline uptake by sympathemimetic amines in the rat isolated heart. *Br. J. Pharmac. Chemother.*, 25, 34-49.
- BURN, J.H. (1932). The action of tyramine and ephedrine. *J. Pharmac. exp. Ther.*, 46, 75-95.
- BURN, J.H. & RAND, M.J. (1959). Sympathetic postganglionic mechanism. *Nature, London*, 184, 163-165.
- BUFN, G.P. & BUFN, J.H. (1961). Uptake of labelled noradrenaline by isolated atria. *Br. J. Pharmac. Chemother.*, 16, 344-351.
- BUFN, J.N. & DOE, J.E. (1978). A comparison of drug induced responses on rat tracheal, bronchial and lung strip *in vitro* preparation. *Br. J. Pharmac.* 64, 71-74.

- BUENSTOCK, G., MCLEAN, J.R. & MARRY, W. (1971). Noradrenaline uptake by noninnervated smooth muscle. *Br. J. Pharmac.*, 43, 180-189.
- BUENSTOCK, G., MCCULLOCH, M.W., STORY, D.F. & WRIGHT, M.E. (1972). Factors affecting the extraneuronal inactivation of noradrenaline in cardiac and smooth muscle. *Br. J. Pharmac.* 46, 243-253.
- CALLINGHAM, B.A. & BURGESS, A.S.V. (1966). The uptake of isoprenaline and noradrenaline by the perfused rat heart. *J. Mol. Pharmac.*, 2, 37-42.
- CANNON, W.B. & ROSENBLUETH, A. (1933). Sympathin E and Sympathin I. *Am. J. Physiol.*, 104, 557-574.
- CARLSSON, A. (1959). Detection and assay of dopamine. *Pharmac. Rev.*, 11, 300-334.
- CARLSSON, W.B. & ROSENBLUETH, A. (1937). *Autonomic Neuro-effector Systems*. 1st edn. pp. 15-41. New York : MacMillan.
- CARLSSON, A. & WALDECK, B. (1965). Inhibition of H^3 -metaraminol uptake by antidepressive and related agents. *J. Pharm. Pharmac.*, 17, 243-244.
- CARLSSON, A., LINDBQUIST, M., MAGNUSON, T. & WALDECK, B. (1958). On the presence of 3-hydroxytyramine in brain. *Science*, 127, 471.
- CARLSSON, A., LINDBQUIST, M. & MAGNUSON, T. (1960). On the biochemistry and possible functions of dopamine and noradrenaline in brain. In *Adrenergic mechanism*. ed. Vane, J.R., Walsterhalme, G.E. and O'Connor, M., pp. 432-439, London : J. & A. Churchill Ltd.
- CASTILLO, J.C. & DE-BEEF, E.J. (1947). The tracheal chain - I. A preparation for the study of antispasmodics with particular reference to bronchodilator drugs. *J. Pharmac. exp. Ther.*, 90, 104-109.
- CASTRO, J.A. & GILLETTE, J.R. (1967). Species and sex differences in the kinetic constant for the N-demethylation of ethyl-morphine by liver microsomes. *Biochem. biophys. Res. Commun.*, 28, 426-430.
- CHAND, N. & EYRE, P. (1977). Spasmolytic actions of histamine in airway smooth muscle: An atypical H-receptor. *Fedn. Proc.*, 36, 1022-1023.
- CHAND, N. & DEPOTH, L. (1978). *In vitro* comparison of drug responses on swine and rabbit airways. *Physiologists*, 21, 19-22.
- CHAND, N., DEPOTH, L. & EYRE, P. (1979). Relaxant response of goat trachea to 5-hydroxytryptamine mediated by D-tryptamine receptors. *Br. J. Pharmac.*, 66, 331-336.
- CHIDSEY, C.A., KAISER, G.A. & BRAUNWALD, E. (1963). Biosynthesis of norepinephrine in isolated canine heart. *Science*, 139, 828-829.

- CLARK, A.J. (1926). The reaction between acetylcholine and muscle cells. *J. Physiol.*, London, 61, 530-546.
- CLARK, A.J. (1937). General Pharmacology. In *Handbuch der Experimentellen Pharmakologie*, Vol. 4, ed. Haftter, A. pp. 20-31, Berlin: Springer-verlag.
- CLARK, S.J. & PAYSER, R.H. (1977). Effect of tazolol on β -adrenoceptors in isolated preparations of the guinea-pig and rat. *J. Pharm. Pharmac.*, 29, 630-632.
- CLARKE, D.E., JONES, C.J. & LINLEY, P.A. (1969). Histochemical fluorescence studies on noradrenaline accumulation in the isolated rat heart. *Br. J. Pharmac.* 37, 1-9.
- CLEGG, P.C. (1966a). Antagonism by prostaglandins of the responses of various smooth muscle preparations to sympathomimetics. *Nature*, London, 209, 1137-1139.
- CLEGG, P.C. (1966b). In *Memoris of the society for Endocrinology*. ed. Pickles, V.R. & Fitzpatrick, R.J., No. 14, pp. 119-136. London-New York: Cambridge University Press.
- COOPER, K.E., CRANSTON, W.I. & HONOUR, A.J. (1965). Effects of interventricular and intrahypothalamic injection of noradrenaline and 5-HT on body temperature in conscious rabbit. *J. Physiol.*, London, 181, 852-864.
- CFANE, R.K. (1962). Molecular transport at cell membranes. *Proc. Roy. Soc.*, 163, 169-196.
- CRAWSHAW, L.I. (1972). Effects of intracerebral 5-hydroxytryptamine injection on thermoregulation in rat. *Physiol. Behav.*, 9, 133-140.
- CROUT, J.R. (1964). The uptake and release of H^3 -norepinephrine by the guinea-pig heart *in vivo*. *Arch. exp. path. Pharmacol.*, 248, 85-98.
- CURTIS, D.R. & JOHNSTON, G.A.R. (1974). Amino acid transmitters in mammalian central nervous system. *Ergebnisse der Physiologia*, 69, 97-188.
- CURTIS, D.R., HOSLI, L. & JOHNSTON, G.A.R. (1968). A pharmacological study of the depression of spinal neurone by glycine and related amino acid. *Exp. Brain Res.*, 6, 1-18.
- CURTIS, D.R., DUGGAN, A.W., FELIX, D. & JOHNSTON, G.A.R. (1970). Bicuculine and central GABA receptors. *Nature*, London, 228, 676-677.
- DAKIN, H.D. (1905). On the physiological activity of substances indirectly related to adrenaline. *Proc. Roy. Soc. Ser.B.*, London, 76-498-503.
- DAVIES, B.N., ROBINSON, B.H. & WITHERINGTON, P.G. (1969). The effects of graded doses of phenoxybenzamine on the vascular & capsular responses of isolated blood perfused dog spleen to sympathetic nerve stimulation and catecholamines. *Archs int. Pharmacodyn. Ther.*, 180, 143-154.

- DAVIDSON, W.J. & INNES, I.R. (1970). Dissociation of potentiation of isoprenaline by cocaine from inhibition of uptake in cat spleen. *Br. J. Pharmac.* 39, 175-181.
- DAY, M.D. & RAND, M.J. (1963). Tachyphylaxis to some sympathomimetic amines in relation to amine oxidase. *Br. J. Pharmac. Chemother.*, 21, 84-96.
- DEMIS, D.J., BLASCHKO, H. & WEITCH, A. (1956). The conversion of dihydroxy-phenylalanine-2-C¹⁴ (DOPA) to norepinephrine by bovine adrenal medullary homogenates. *J. Pharmac. exp. Ther.*, 117, 208-212.
- DENGIER, H.J., SPIEGEL, H.E. & TITUS, E.O. (1961). Effects of drugs on uptake of isotopic norepinephrine. *Nature, London*, 191, 816-817.
- DENGIER, H.J., MICHAELSON, I.A., SPIEGEL, H.E. & TITUS, E. (1962). The uptake of labelled norepinephrine by isolated brain and other tissues of the cat. *Int. Neuropharmac.* 1, 23-38.
- DE ROBERTIS, E. (1955). Submicroscopic organization of some synaptic regions, An electron microscope study of the synapse. *Acta Neurol. lat. Ames.*, 1, 3-15.
- DE ROBERTIS, E. (1959). Submicroscopic morphology of synapse. *Int. Rev. Cytol.*, 8, 61-96.
- DE ROBERTIS, E. (1967). Ultrastructure and cytochemistry of the synaptic region. *Science*, 156, 907-913.
- DE ROBERTIS, E. (1971). Molecular biology of synaptic receptors. *Science*, 171, 963-966.
- DE ROBERTIS, E. (1975). Synaptic receptors isolation and molecular biology. In *Synaptic Receptor*, Vol. 4, ed. De Robertis, E. pp. 1-99 and 281-283, New York: Marcel Dekker Inc.
- DE ROBERTIS, E. & BENNETT, S.H. (1954). Submicroscopic vesicular component of the synapse. *Fedn. Proc.* 13, 35-39.
- DE ROBERTIS, E., DE IRALDI, A.P., DE LOPES, G.R. & SALGANICOFF, L. (1961). Electron microscope observation on nerve endings isolated from rat brain (Abstract). *Anat. Rec.*, 139, 220.
- DE ROBERTIS, E., DE LOPES, A.R. & DE IRALDI, A.P. (1962). Isolation of synaptic vesicles from nerve endings of the rat brain. *Nature, London* 6, 194, 794-795.
- DE ROBERTIS, E., DE LOPES, A.G.R., SALGANICOFF, L., DE IRALDI, A.P. & ZIMMER, L.M. (1963). Isolation of synaptic vesicles and structural organization of the acetylcholine system within brain nerve endings. *J. Neurochem.*, 10, 225-235.
- DE ROBERTIS, E., AZCUBRA, J.M. & FISZER, S. (1967). Ultrastructure and cholinergic binding capacity of junctional complexes isolated from rat brain. *Brain Res.*, 5, 45-56.

- DE SCHAEPEFYVER, A.F., & KIESHNER, N. (1961). Metabolism of DL-adrenaline-2-C¹⁴ in cat II. Tissue metabolism. Arch. int. Pharmacodyn. Ther., 131, 433-449.
- DOLZEL, S. (1966). Histochemical identification of monoamines in the arterial wall. Experientia, 22, 307-310.
- DOUGLAS, W.W., KANNO, T. & SAMPSON, S.R. (1967). Effects of acetylcholine and other medullary secretagogues of adrenal chromaffin cells: An analysis employing techniques of tissue culture. J. Physiol, London, 188, 107-120.
- DRASKOCZY, P.R. & TRENDLENBURG, U. (1970). Intraneuronal and extraneuronal accumulation of sympathomimetic amines in the isolated nictitating membrane of the cat. J. Pharmac. exp. Ther., 174, 290-306.
- DU CHARNE, D.W. & WEEKS, J.R. (1967). Cardiovascular pharmacology of prostaglandin F₂, unique pressor agent. Proc. 2nd Nobel Symposium. Stockholm : Almqvist & Wiksell.
- DUDEI, J. (1965). Presynaptic and postsynaptic effects of inhibitory drugs on the crayfish neuromuscular function. Pflüger Arch. ges. Physiol., 283, 104-118.
- EDELMAN, I.S., BOGOFUCH, R. & PORTER, R. (1963). The possible binding sites of mineralocorticoids with different organs of rat. Proc. Nat. Acad. Sci., U.S.A., 59, 1169.
- EDELSON, J., SCHLOSSER, A., DOUGLAS, J.F. (1968). An unusual metabolite of benzyl N-benzyl carbethoxyhydroxamate (W-398). Biochem. Pharmac., 17, 779-785.
- EHRLICH, P. (1900). From the collected papers of P. Ehrlich (1960). ed. Himmelweil, F., pp. 3, 443 and 505, London : Pergamon Press.
- EISENFELD, A.J., LANDSBERG L. & AXELROD, J. (1967). Effect of drugs on the accumulation and metabolism of extraneuronal norepinephrine in the rat heart. J. Pharmac. exp. Ther., 158, 378-385.
- ELLIOT, T.R. (1905). The action of adrenaline. J. Physiol, London, 32, 401-467.
- EPSTEIN, S.E., LEVEY, G.S. & SKELTON, C.L. (1971). Adenyl cyclase and cyclic AMP. Biochemical links in the regulation of myocardial contractility. Circulation, 43, 437-450.
- EULER, U.S. VON (1946). A specific sympathomimetic ergone in adrenergic nerve fibers (sympathin) and its relations to adrenaline and noradrenaline. Acta Physiol. Scand., 12, 73-97.
- EULER, U.S. VON & ISHAJKO, F. (1963). Catecholamine release and uptake in isolated adrenergic nerve granules. Acta Physiol. Scand., 57, 468-480.

- EULER, U.S. VON & LISZJKO, F. (1965). Uptake of catecholamines in the rabbit heart after depletion with decaborane. *Life Sci.*, 4, 969-972.
- EULER, U.S. VON & LISZJKO, F. (1966). Inhibitory action of adrenergic blocking agents on catecholamine release and uptake in isolated nerve granules. *Acta Physiol. Scand.*, 68, 257-262.
- EVERETT, S.D. & MANN, S.P. (1967). Catecholamine release by histamine from the isolated intestine of chick. *Eur. J. Pharmac.*, 1, 310-320.
- EXLEY, K.A. (1957). The blocking action of choline-2: 6 xylyletherbromide on adrenergic nerves. *Br. J. Pharmac.*, 12, 297-305.
- EYFE, P. (1969). The pharmacology of sheep tracheobronchial muscle : a relaxant effect of histamine on the isolated bronchi. *Br. J. Pharmac.*, 36, 409-417.
- FAEDER, J.P. & SAIPETER, M.M. (1970). Glutamate uptake by a stimulated intact nerve muscle preparation. *J. Cell. Biol.*, 46, 300-307.
- FAFNEBO, L.O. (1968). Histochemical studies on the uptake of noradrenaline in the perfused rat heart. *Br. J. Pharmac.*, 34, 227-228 p.
- FEIDBERG, W. & MYERS, R.D. (1964). Effects on temperature of amines injected into the cerebral ventricles. A new concept of temperature regulation. *J. Physiol., London*, 173, 226-236.
- FEIDBERG, W. & MYERS, R.D. (1965). Changes in temperature produced by microinjections of amines in the anterior hypothalamus of cats. *J. Physiol., London*, 177, 239-245.
- FEIDBERG, W. & LOTTI, V.J. (1967). Temperature responses to monoamines and an inhibitor of MAO injected into the cerebral ventricles of rats. *Br. J. Pharmac. Chemother.*, 31, 152-161.
- FERGUSON, R.W. (1939). Chemical potentials as indices of toxicity. *Proc. roy. Soc. Med. B.* 127, 387-391.
- FERGUSON, J., IVY, A.C. & GREENGARD, H. (1936). Observations on the response of the spleen to intravenous injection of certain secretin preparations, acetylcholine and histamine. *Am. J. Physiol.*, 117, 701-707.
- FERRENDELLI, J.A., STEINER, A.I., MCDUGAL, D.R. & KIPNIS, D.M. (1970). The effect of oxytremorine and atropine on GMP levels in mouse cerebral and cerebellum. *Biochem. biophys. Res. Com.*, 41, 1061-1067.
- FILLENZ, M. (1970). Innervation of the cat spleen. *Proc. F. Soc. Ser. Biol. Sci.*, 174, 459-468.

- FINGL, E. & WOODBURY, D.M. (1965). General principles. In *The Pharmacological Basis of Therapeutics*, 3rd Edn. ed. Goodman, L.S. & Gilman, A. pp. 1-36, New York : The Macmillan Company.
- FISCHEP, E. (1894). Cited in Gill, E.W. (1965). Drug receptor interaction. *Prog. Med. Chem.*, 4, 39-85.
- FISCHER, J.E. & IVERSEN, L.I. (1966). Effect of various factors on the output of noradrenaline from the perfused cat spleen on stimulation of the splenic nerve. Cited by Iversen (1967).
- FISCHEP, J.E. & SNYDER, S.H. (1966). Disposition of norepinephrine- H^3 in sympathetic ganglia. *J. Pharmac. exp. Ther.*, 150, 190-195.
- FISCHEP, J.E., KOPIN, I.J. & AXELFOD, J. (1965). Evidence for extraneuronal binding of norepinephrine. *J. Pharmac. exp. Ther.*, 147, 181-185.
- FLACK, B., O'WAMAN, C. & SJOSTRAND, N.O. (1965). Peripherally located adrenergic neurons innervating the vas deferens and seminal vesicle of the guinea-pig. *Experientia*, 21, 98-100.
- FLEISCH, J.H. & TITUS, E. (1973). Effect of local anesthetics on pharmacological receptor systems of smooth muscle. *J. Pharmac. exp. Ther.*, 186, 44-51.
- FLOREY, E. (1967). Neurotransmitters and modulators in the animal kingdom. *Fedn. Proc.* 26, 1164-1179.
- FOUTS, J.R. & BRODIE, B.B. (1957). The enzymatic reduction of chloramphenicol, p-nitrobenzoic acid and other aromatic nitrocompounds in mammals. *J. Pharmac. exp. Ther.*, 119, 197-207.
- FROHLICH, A. & KLEWI, O. (1910). Über eine Steigerung der Adrenalinempfindlichkeit durch cocaine. *Archs exp. Path. Pharmac.* 62, 159-169.
- FURCHGOTT, R.F. (1954). Diberamine blockade in strips of rabbit aorta and its use in different receptors. *J. Pharmac. exp. Ther.*, 111, 265-284.
- FURCHGOTT, R.F. (1955). The pharmacology of vascular smooth muscle. *Pharmac. Rev.*, 7, 183-265.
- FURCHGOTT, R.F. (1964). Receptor mechanism. *Ann. Rev. Pharmac.*, 4, 21-50.
- FURCHGOTT, R.F. (1966). The use of α -haloalkylamines in the differentiation of receptors and in the determination of dissociation constants of receptor-agonist complex. *Advance in Drug Research*, Vol. 3, pp. 21-55. ed. Harper, N.J. & Simmonds, A.B., New York: Academic Press.
- FURCHGOTT, R.F. (1967). Pharmacological differentiation of adrenergic receptors. *Ann. N.Y. Acad. Sci.*, 139, 553-570.

- FURCHGOTT, R.F. & BHADRAKOM, S. (1953). Reactions of strip of rabbit aorta to epinephrine, isopropylarterenol, sodium nitrite and other drugs. *J. Pharmac. exp. Ther.*, 108, 129-143.
- FURCHGOTT, R.F., KIRPEKAR, S.M. & SCHWAB, A. (1973). **Actions** and interactions of norepinephrine, tyramine and cocaine on aortic strip of rabbit and left atria on guinea-pig and cat. *J. Pharmac. exp. Ther.*, 142, 39-58.
- GADDUM, J.H. (1937). Discussion on the chemical and physical bases of pharmacological action. *Proc. R. Soc. B.* 121, 598-601.
- GADDUM, J.H. (1953). Tyramine receptors. *J. Physiol., London*, 119, 363-368.
- GALINDO, A. (1969). GABA-picrotoxin interaction in the mammalian central nervous system. *Brain Res.*, 14, 763-766.
- GENAZZANI, E. & NITO, E. DE. (1952). Su di un nuovo metodo biologico per il dosaggio dell'adrenalina. *Boll. Soc. ital. Biol. Sper.*, 28, 1283-1286.
- GEORGE, J.M., KIEF, L. B. & HOYLAND, J.P. (1971). Theoretical considerations of alpha and beta adrenergic activity. *Mol. Pharmac.*, 7, 328-336.
- GHOSH, M.N. (1971). *Fundamentals of Experimental Pharmacology*. 1st Edn., pp. 1-46, Calcutta: Scientific Book Agency.
- GILL, E.W. (1965). Drug receptor interactions. *Prog. med. Chem.*, 4, 39-85.
- GILLESPIE, J.S. (1968). The role of receptors in adrenergic uptake. In "Adrenergic Neurotransmission". Ciba Foundation Study group No. 33. pp. 61-75 ed. Wolstenholme, G.E.W. & O'Connor, M. London: Churchill.
- GILLESPIE, J.S. (1973). Uptake of noradrenaline by smooth muscle. *Br. Med. Bull.* 29, 136-141.
- GILLESPIE, J.S. & KIRPEKAR, S.M. (1963). Removal of noradrenaline from the blood flowing through the spleen. *J. Physiol., London*, 169, 100-101 p.
- GILLESPIE, J.S. & KIRPEKAR, S.M. (1965). The localization of endogenous and infused noradrenaline in the spleen. *J. Physiol., London*, 178, 46-47.
- GILLESPIE, J.S. & KIRPEKAR, S.M. (1966). Histochemical localization of noradrenaline in the cat spleen. *J. Physiol., London*, 187, 69-79.
- GILLESPIE, J.S. & HAMILTON, D.N.H. (1966). Binding of noradrenaline to smooth muscle cells in the spleen. *Nature, London*, 212, 524-525.
- GILLESPIE, J.S. & NUIR, T.C. (1970). Species and tissue variation in extraneuronal and neuronal accumulation of noradrenaline. *J. Physiol., London*, 206, 591-604.
- GILLESPIE, J.S. & RAE, R.M. (1972). Constrictor and compliance responses of some arteries to nerve or drug stimulation. *J. Physiol., London*, 223, 109-130.

- GILLESPIE, J.S. & TOWART, R. (1973). Uptake kinetics and ion requirements for extraneuronal uptake of noradrenaline by arterial smooth muscle and collagen. *Br. J. Pharmac.* 47, 556-567.
- GILLESPIE, J.S., HAMILTON, D.N.H. & HOISE, R.J.A. (1970). The extraneuronal uptake and localization of noradrenaline in the cat spleen and the effect on this of some drugs, of cold and of denervation. *J. Physiol., London*, 206, 563-590.
- GIORGINEFF, M.F., LEFLOCH, M.L., GLOWINSKI, J. & BESSON, M.J. (1977). Involvement of cholinergic presynaptic receptors of nicotine and muscarinic types in the control of spontaneous release of dopamine from strial dopaminergic terminals in the rat. *J. Pharmac. exp. Ther.*, 200, 535-544.
- GLASCOCK, R.F. & HOEKSTRA, W.G. (1959). Selective accumulation of tritium-labelled hexoestrol by the reproductive organs of immature female goats and sheep. *Biochem. J.* 72, 673-682.
- GLOWINSKI, J. & AXELROD, J. (1966). Effects of drugs on the disposition of H^3 -norepinephrine in the rat brain (Second International Catecholamine Symposium). *Pharmac. Rev.*, 18, 775-786.
- GLOWINSKI, J., KOPIN, I.J. & AXELROD, J. (1965). Metabolism of H^3 -norepinephrine in the rat brain. *J. Neurochem.*, 12, 25-30.
- GLYNN, I.M. (1957). The actions of cardiac glycosides on sodium and potassium movements in human red cells. *J. Physiol., London*, 136, 148-173.
- GOLDSTEIN, M. & MUSACCHIO, J.M. (1963). Formation of norepinephrine from tyrosine in isolated rabbit heart. *Experientia*, 19, 491-492.
- GOLDSTEIN, M., MCKEEFEGHAN, M.R. & LAUFER, E. (1963). The involvement of sulfhydryl sites in dopamine- β -hydroxylase activity. *Biochem. Biophys. Acta*, 77, 161-164.
- GOODALL, B.M. & KIPSHNER, N. (1957). Biosynthesis of adrenaline and noradrenaline in vitro. *J. biol. Chem.*, 226, 213-221.
- GOODMAN, L.S. & GILMAN, A. (1974). *The Pharmacological Basis of Therapeutics*. 5th Edn. pp. 399-440, New York: Macmillan Publishing Co. Inc.
- GRAY, E.G. (1959). Axo-somatic and axo-dendritic synapses of the cerebral cortex. An electron microscope study. *J. Anat.* 93, 420-433.
- GREEN, R.D. & MILLER, J.W. (1966). Evidence for active transport of epinephrine and norepinephrine by the uterus of the rat. *J. Pharmac. exp. Ther.*, 152, 42-50.

- GREEN, R.D. & FLEMING, W.W. (1968). Analysis of supersensitivity in the isolated spleen of the rat. *J. Pharmac. exp. Ther.*, 162, 254-262.
- GREENWAY, C.W. & STAPK, R.D. (1970). The vascular response of the spleen to intravenous infusions of catecholamines, angiotensin and vasopressin in the anesthetized cat. *Br. J. Pharmac.*, 38, 583-592.
- GROLLMAN, A. (1965). Introductory considerations. In *Pharmacology and Therapeutics*. 6th Edn. ed. Grollman, A. & Grollman, E.F. pp. 1-56. Philadelphia : Lea & Febiger.
- GULATI, O.D. & KELKAR, V.V. (1971). Effect of tyramine on the human umbilical artery *in vitro*. *Br. J. Pharmac.*, 42, 155-158.
- GULATI, C.D. & SHIVARAMKRISHNA, N. (1975). Kinetics and some characteristics of uptake of noradrenaline by the human umbilical artery. *Br. J. Pharmac.*, 53, 152-154.
- GULATI, O.D. , PARIKH, H.M. & UMAR, M.S. (1968). Receptors for noradrenaline and histamine in the rabbit's posterior vena cava. *Br. J. Pharmac.*, 32, 87-95.
- GULATI, O.D., MATHEW, B.P., PARIKH, H.M. & KRISHNAJURTHY, V.S.R. (1973). Beta adrenergic receptor of rabbit thoracic aorta in relation to age. *Jap. J. Pharmac.*, 23, 259-268.
- GUNTHEROTH, W.G. & MULLINS, G.L. (1963). Liver and spleen as venous reservoir. *Am. J. Physiol.*, 204, 35-41.
- HAGEN, P. (1959). The storage and release of catecholamines. *Pharm.Rev.*, 11, 361-374.
- HALL, G.H. (1972). Changes in body temperature produced by cholinergic substances injected into the cerebral ventricles of unanesthetized cats. *Br. J. Pharmac.*, 44, 634-641.
- HALL, Z.W., BOWDIE, M.D. & KRAVITZ, E.A. (1970). The metabolism of gamma aminobutyric acid in the lobster nervous system. *J. Cell Biol.*, 46, 290-299.
- HAMBERGER, B. & MASUOKA, D. (1965). Localization of catecholamines uptake in rat brain slices. *Acta Pharmac. tox.* 22, 363-368.
- HAMBERGER, B., MALMFOSS, T., NOBBBERG, K.A. & SACHS, C. (1964). Uptake and accumulation of catecholamines in peripheral adrenergic neurons of reserpinized animals, studied with a histochemical method. *Bioche. Pharmac.*, 13, 841-844.
- HAMILTON, D.N.H. (1968). Extraneuronal uptake of noradrenaline. Ph.D., Thesis. Glasgow University. Cited by Gillespie, J.S. (1973).
- HANSCH, C., STEWARD, A.R., IWASA, J. & DEUTSCH, E. (1965). The use of a hydrophobic bonding constant for structure-activity correlations. *Mol. Pharmac.* 1, 205-213.
- HAFDMAN, I.G. & MAYER, S.E. (1965). The influence of cocaine on some metabolic effects and the distribution of catecholamines. *J. Pharmac. exp. Ther.*, 148, 29-39.

- HARVEY, J.A. & PENNEFATHER, J.N. (1962). Effect of adrenaline infusions on the catecholamine content of cat and rat tissues. *Br. J. Pharmac. Chemother.*, 18, 183-189.
- HECHTER, O. & HALKERSTON, D.K. (1964). In *The Hormones Vol.5*, ed. Pincus, G., Thimann, K.V. and Astwood, E.B., pp. 697-825. New York : Academic Press.
- HELMANN, G., HEFTTING, G. & PESKAR, B. (1971). Effect of pretreatment with 6-hydroxydopamine on the uptake and metabolism of catecholamines by the isolated perfused rat heart. *Br. J. Pharmac.*, 41, 270-277.
- HENLE, J. (1865). *Über das gewebe der nebenhieren und der hypophyse*. *Z. Rationella Med.*, 24, 143-152.
- HEFTTING, G. & AXELFOD, J. (1961). Fate of tritiated noradrenaline at the sympathetic nerve endings. *Nature, London*, 192, 172-173.
- HEFTTING, G., AXELFOD, J., KOPIN, I.J. & WHITBY, L.G. (1961). Lack of uptake of catecholamines after chronic denervation of sympathetic nerves. *Nature, London*, 189, 66.
- HEY, P. & WILLEY, G.L. (1954). Choline 2:6-xylyl ether bromide; an active quaternary local anaesthetic. *Br. J. Pharmac. Chemother.*, 9, 471-475.
- HINKE, J.A.M. (1965). Calcium requirements for noradrenaline and high potassium ion contraction in arterial smooth muscle. In *Muscle*, ed. Paul, W.M., Daniel, E.E., Kay, C.M. & Monckton, G. pp. 269-285. New York : Pergamon Press.
- HOLLAND, W.C. & SCHUMAN, H.J. (1956). Formation of catecholamines during splachnic stimulation of the adrenal gland of the cat. *Br. J. Pharmac.*, 11, 449-453.
- HOLTZ, P. (1939). Dopadecarboxylase. *Naturwissenschaften*, 27, 724-725.
- HOLTZ, P., HEISE, R. & IHDTKE, K. (1938). Fermentativer abbau von l-dioxyphenylalanin (DOPA) durch niere. *Archs exp. Path. Pharmac*, 191, 87-118.
- HOLTZ, P., CEDNER, K. & KRONBERG, G. (1947). Über des sympathicomimetische pressorische prinzip des harns (urosympathin). *Archs exp. Patho. Pharmac*, 204, 228-243.
- HOPKINS, A.S. (1973). Structure-activity relations for the inhibition of catecholamine uptake into synaptosomes from noradrenaline and dopaminergic neurones in rat brain homogenates. *Br. J. Pharmac.*, 47, 332-338.
- HOPKINS, A.S., COYLE, J.T. & SNYDER, S.H. (1971). Catecholamine uptake by synaptosomes from rat brain: Structure-activity relationship of drugs with differential effects on dopamine and norepinephrine neurones. *Mol Pharmacol*, 7, 66-80.

- HORTON, E.W. & MAIN, I.H.M. (1967). Further observations on the central nervous actions of prostaglandins E_2 and E_1 . Br. J. Pharmac. Chemother., 30, 568-581.
- HORTON, E.W., MAIN, I.H.M. & THOMSON, C.J. (1963). The action of intravaginal prostaglandin E_1 on the female reproductive tract. J. Physiol., London, 168, 54P-55P.
- HUDGINS, P.M. & FLEMING, W.W. (1966). A relatively nonspecific supersensitivity in aortic strips resulting from pretreatment with reserpine. J. Pharmac. exp. Ther., 153, 70-80.
- HUDGINS, P.M. & WEISS, G.B. (1968). Differential effects of calcium removal upon vascular smooth muscle contraction induced by norepinephrine, histamine and potassium. J. Pharmac. exp. Ther., 159, 91-97.
- IGNARFC, L.J. & TITUS, E. (1968). The presence of antagonistically acting alpha and beta adrenergic receptors in the mouse spleen. J. Pharmac. exp. Ther., 160, 72-80.
- INNES, I.R. (1962). The action of 5-hydroxytryptamine on adrenergic receptors. Br. J. Pharmac. 19, 427-441.
- INOUE, A. & TAFUKA, I. (1964). Effect of tyramine, reserpine and cocaine on the noradrenaline release and uptake in the perfused rabbit kidney. Acta physiol. Scand. 62, 359-363.
- IVERSEN, L.L. (1963). The uptake of noradrenaline by the isolated perfused rat heart. Br. J. Pharmac., 21, 523-537.
- IVERSEN, L.L. (1965a). The inhibition of noradrenaline uptake by drugs. In: Adv. Drug Res., 2, 5-23. ed. Harper N.J. & Simmonds A.B., New York: Academic Press.
- IVERSEN, L.L. (1965b). The uptake of catecholamines at high perfusion concentrations in the isolated rat heart: a novel catecholamine uptake process. Br. J. Pharmac., 25, 18-33.
- IVERSEN, L.L. (1966). Accumulation of α -methyl tyramine by the noradrenaline uptake process in the isolated rat heart. J. Pharm. Pharmac., 18, 481-484.
- IVERSEN, L.L. (1967). The uptake and storage of noradrenaline in sympathetic nerves. pp. 108-146. London, Cambridge University Press.
- IVERSEN, L.L. (1968). Role of noradrenaline uptake in adrenergic neurotransmission. In Adrenergic Neurotransmission. ed. Wolstenhome, G.E.W. and O'Connor, M. pp. 44-57. London: J.A. Churchill Ltd.
- IVERSEN, L.L. & LANGER, S.Z. (1969). Effects of phenoxybenzamine on the uptake and metabolism of noradrenaline in the rat heart and vas deferens. Br. J. Pharmac. 37, 627-637.

- IVERSEN, L.I. & SALT, P.J. (1970). Inhibition of catecholamine uptake by steroids in the isolated rat heart. *Br. J. Pharmac.*, 40, 528-530.
- IVERSEN, L.I. (1971). Role of transmitter uptake mechanism in synaptic neurotransmission. *Br. J. Pharmac.*, 41, 571-591.
- IVERSEN, L.I. (1973). Catecholamine uptake processes. *Br. Med. Bull.*, 29, 130-135.
- IVERSEN, L.I. & WHITBY, I.G. (1962). Retention of injected catecholamines by the mouse. *Br. J. Pharmac. Chemother.*, 19, 355-364.
- IVERSEN, L.I. & KRAVITZ, E.A. (1966). Sodium dependence of transmitter uptake at adrenergic nerve terminals. *Mol. Pharmac.*, 2, 360-362.
- IVERSEN, L.I., GROWICKI, J. & AXELFOD, J. (1966). The physiological disposition and metabolism of norepinephrine in immunosympathectomized animals. *J. Pharmac. exp. Ther.*, 151, 273-384.
- IVERSEN, L.I., JARFOTT, B. & SIMMONDS, M.A. (1971). Differences in the uptake, storage and metabolism of (+)- and (-)-noradrenaline. *Br. J. Pharmac.*, 43, 845-855.
- JACOB, J. & PEINDLIER, R. (1973). Central effects of monoamines on temperature of conscious rabbit. In *The Pharmacology of Thermoregulation* pp. 202-216. ed Schonbaum, E. & Lomax, P. Basel: Karger Press.
- JACOBI, H. & FONTAINE, R. (1966). Untersuchung über die beta-rezeptorenblockende Wirkung an der Kammerherz. *Milz. Ärztliche Forschung*, 20, 308-309.
- JARFOTT, B. (1970). Uptake and metabolism of catecholamines in the perfused hearts of different species. *Br. J. Pharmac.* 38, 810-821.
- JENSEN, E.V. & JACOBSON, H.I. (1960). In *Biological Activities of Steroids in Relation to Cancer*. ed. Pinous, G. and Vollmer, E. pp. 161-178. New York: Academic Press.
- JHAMANDAS, K.H. & NASH, C.W. (1967). Effects of inorganic anions on the contractility of vascular smooth muscle. *Can. J. Physiol. Pharmac.*, 45, 657-682.
- JORGE, M. (1963). The alcoholols. In *Physiological Pharmacology*, Vol. 1, pp. 93-183, ed. Water, S.R. & Frederick, G. Hofman, New York - London, Academic Press.
- KAISNER, S., NICKENSON, M. & BOYD, G.N. (1970). Selective blockade of potassium induced contractions of aortic strips by β -diethylaminoethyl diphenylpropyl- acetate. *J. Pharmac. exp. Ther.*, 174, 500-508.
- KATZ, B. & THESLEFF, S. (1957). A study of the 'desensitization' by acetylcholine at the motor end-plate. *J. Physiol. London*, 138, 63-80.
- KAUFMAN, S. (1959). Studies on the mechanism of the enzymic conversion of phenylalanine to tyrosine. *J. biol. Chem.*, 234, 2677-2682.

- KAUFMAN, S. (1964). The role of pteridine in the enzymic conversion of phenylalanine to tyrosine. *Trans. N.Y. Acad. Sci.*, 26, 977-983.
- KAUMAN, A.J. & OCHOA, E. (1970). Similar receptor mediating the norepinephrine and dopamine contraction in man pulmonary artery of the dog. *Acta. Physiol. lat. Amer.* 20, 451-452.
- KIRPEKAR, S.M. & WAKADE, A.R. (1968). Factors influencing noradrenaline uptake by the perfused spleen of the cat. *J. Physiol., London*, 193, 602-626.
- KIRPEKAR, S.M. & PUIG, M. (1971). Effect of flow-stop on noradrenaline release from normal spleens and spleens treated with cocaine, phentolamine or phenoxybenzamine. *Br. J. Pharmac.*, 43, 359-369.
- KIZAKI, S. & ABIKO, Y. (1966). The blocking action of pronethalol on contraction of isolated spleen strip produced by adrenaline, acetylcholine or isoprenalol. *Jap. J. Pharmac.*, 16, 306-311.
- KOPIN, I.J. (1966). Biochemical aspects of release of norepinephrine and other amines from sympathetic nerve endings. *Pharmac. Rev.*, 18, 513-523.
- KOPIN, I.J. & BRIDGES, W. (1963). Differences in D- and L-norepinephrine- H^3 . *Life Sci.*, 2, 356-362.
- KOPIN, I.J., HERTTING, G. & GORDON, E.K. (1962). Fate of norepinephrine- H^3 in the isolated perfused rat heart. *J. Pharmac. exp. Ther.*, 138, 34-40.
- KOPIN, I.J., GORDON, E.K. & HOPST, W.D. (1965). Studies of uptake of L-norepinephrine- ^{14}C . *Biochem. Pharmac.*, 14, 753-759.
- KRAVITZ, E.A. & POTTER, D.D. (1965). A further study of the distribution of γ -aminobutyric acid between excitatory and inhibitory axons of the lobster. *J. Neurochem.*, 12, 323-328.
- KRISHNER, N. (1957). Pathway of noradrenaline formation from DOPA. *J. biol. Chem.*, 226, 821-826.
- KRISHNAMURTHY, V.S.R. & GOLLMAN, A. (1972). Contractile response of rat aorta to norepinephrine and tyramine. *J. Pharmac. exp. Ther.*, 182, 264-272.
- KRISHNAMURTHY, V.S.R. & GOLLMAN, A. (1976). The mechanism of contraction of rat aorta to various agonists. *Archs. int. Pharmacodyn.*, 220, 180-188.
- KULKARNI, A.S. (1967). Effects on temperature of serotonin and epinephrine injected into the lateral ventricle of the cat. *J. Pharmac. exp. Ther.*, 157, 541-545.
- KUO, J.F., LEE, T.P., REYES, P.L., WALTON, K.G., DONNELLY, T.E. & GREENGARD, P. (1972). Cyclic nucleotide-dependent protein kinase. *J. biol. Chem.* 247, 16-22.

- KURAHASHI, K. & SHIBATA, S. (1971). Bretylium potentiation of the contractor responses of isolated rabbit aortic strips to potassium and tyramine. *Br. J. Pharmac.* 43, 210-221.
- LAND, A.M., ARNOID, A., MCAULIFF, J.P., LADUENA, F.P. & BROWN, R.G. (1967). Differentiation of receptor systems activated by sympathomimetic amines. *Nature, London*, 214, 597-598.
- LANGER, S.Z. (1968). The effects of phenoxybenzamine on metabolism of H^3 -noradrenaline released from the isolated nictitating membrane. *Br. J. Pharmac.*, 34, 222 p.
- LANGER, S.Z. (1970). The metabolism of (3H) noradrenaline released by electrical stimulation from the isolated nictitating membrane of the cat and from the vas deferens of the rat. *J. Physiol, London*, 208, 515-546.
- LANGLEY, J.N. (1901). Observations on the physiological action of extracts of the supra-renal bodies. *J. Physiol., London*, 27, 237-256.
- LEE, T.P., KUO, J.F. & GREENGARD, P. (1972). Role of muscarinic cholinergic receptors in regulation of guanosine 3'-5' cyclic monophosphate content in mammalian brain, heart muscle and intestinal smooth muscle. *Proc. Nat. Acad. Sci.*, 11, 3287-3291.
- LEFKOWITZ, R.J. & HABER, E. (1971). A fraction of the ventricular myocardium that has the specificity of the cardiac beta-adrenergic receptor. *Proc. Nat. Acad. Sci.*, 68, 1773-1777.
- LEFKOWITZ, R.J. & LEVEY, G.S. (1972). Norepinephrine. Dissociation of β -receptor binding from adenylate cyclase activation in solubilized myocardium. *Life Sci.*, 11, 821-828.
- LESZKOVSKY, G.P. & TARDOS, L. (1968). Potentiation by cocaine and 3,3-di(p-aminophenyl)-propylamine (TK-174) of the effect of isoprenaline and noradrenaline on isolated strips of cats spleen. *J. Pharm. Pharmac.*, 20, 377-380.
- LEVEY, G.S. (1971). Restoration of glucagon responsiveness of solubilized myocardial adenyl cyclase by phosphodylserine. *Biochem. biophys. Res. Comm.*, 43, 108-113.
- LEVEY, G.S. & EPSTEIN, S.E. (1969). Activation of adenyl cyclase by glucagon in cat and human heart. *Circulation Res.*, 24, 151-156.
- LEVIN, E.Y. & KAUFMAN, S. (1961). Studies on the enzyme catalyzing the conversion of 3,4-dihydroxyphenylethylamine to norepinephrine. *J. biol. Chem.*, 236, 2043-2049.
- LEVIN, E.Y., LEVENBERG, B. & KAUFMAN, S. (1960). The enzymatic conversion of 3,4-dihydroxyphenylethylamine to norepinephrine. *J. biol. Chem.*, 235, 2080-2086.

- LEVITT, M., SPECTOR, S., SJOERDSMA, A. & UDENFRIEND, S. (1965). Elucidation of the rate-limiting step in norepinephrine biosynthesis in the perfused guinea-pig heart. *J. Pharmac. exp. Ther.*, 148, 1-8.
- LEWIS, J.J. (1970). The α -receptors. In *Lewis's Pharmacology*. 4th Edn. pp.61-84, ed. Crossland, J., London: E. & S. Livingstone.
- LINDMAR, R. & MUSCHOLL, E. (1964). Die Wirkeing von pharmaka auf die Elimination von Noradrenalin aus der perfusionsflussigkeit und die Nor-adrenalin-Aufnahme in das isolierte Herzen. *Arch. exp. Path. Pharmac.* 247, 469-492.
- LIGHTMAN, S.L. & IVERSEN, L.L. (1969). The role of uptake in the extraneuronal metabolism of catecholamines in the isolated rat heart. *Br. J. Pharmac.*, 37, 638-649.
- LOEWI, O. (1921). Ueber humorale uebertragbarkeit der Herzenerverwirkung. *Archs Ges. Physiol.*, 189, 239-242.
- MACHT, D.I. & TING, G.C. (1921). A study of antispasmodic drugs on the bronchus. *J. Pharmac. exp. Ther.*, 18, 373,398.
- MACKAY, D. (1963). A flux-carrier hypothesis of drug action. *Nature, London*, 197, 1171-1173.
- MAENGWYN, G.D. (1968). The dual mode of action of histamine in the cat isolated tracheal chain. *J. Pharm. Pharmac.*, 20, 572-573.
- MAGEE, D.F. (1946). The action of some drugs on the excised spleen. *Quart. J. Pharm. Pharmac.*, 19, 44-48.
- MAICKEL, R.P., BEAVER, M.A. & BRODIE, B.B. (1963). Implications of uptake and storage of norepinephrine by sympathetic nerve endings. *Life Sci.*, 2, 953-958.
- MAITOFFS, T. (1965). Studies on adrenergic nerves. *Acta Physiol. Scand.*, 64, suppl. 248.
- MAILING, H.M., FLEISH, J.H. & SAUL, W.F. (1971). Species differences in aortic responses to vasoactive amines: The effects of compound 48/80, cocaine, reserpine and 6-hydroxydopamine. *J. Pharmac. exp. Ther.*, 176, 672-683.
- MANN, M. & WEST, G.B. (1950). The nature of hepatic and splenic sympathin. *Br. J. Pharmac.*, 5, 173-177.
- MAITEGAZZA, P. & NALLIZADA, M.K. (1965). Activity of prostaglandin E_1 on the hypogastric nerve-vas deferens preparation of various animal species. *Atti. Acad. Med. Lombarda*, 20, 58-64.
- MASUOKA, D.I., CLARK, W.G. & SCHOTT, H.F. (1961)? Biosynthesis of catecholamines in rat brain tissue in vitro. *Rev. Can. Biol.*, 20, 1-5.

- MASUOKA, D.T., SCHOTT, H.F. & PETTIELLO, L. (1963). Formation of catecholamines by various areas of cat brain. *J. Pharmac. exp. Ther.*, 139, 73-76.
- MAUTNER, H.G. (1967). The molecular basis of drug action. *Pharmac. Rev.*, 19, 107-144.
- MCGEER, P.L. & MCGEER, E.G. (1964). Formation of adrenaline by brain tissue. *Biochem. biophys. Res. Commun.*, 17, 502-507.
- MCGEER, E.G., LING, C.M. & MCGEER, P.L. (1968). Conversion of tyrosine to catecholamines by cat brain in vivo. *Biochem. biophys. Res. Commun.*, 13, 291-296.
- MEETER, E. (1971). The mechanism of action of intraventricular carbachol on the body temperature of the rat. *Archs int. Pharmacodyn. Ther.*, 194, 318-321.
- MUNCK, A. & JOHNSON, T.B. (1968). Specific and nonspecific physicochemical interactions of glucocorticoids and related steroids with rat thymus cells. *J. biol. Chem.* 243, 5556-5565.
- MURAD, F. & VAUGHAN, K. (1969). Effect of glucagon on rat heart adenylyl cyclase. *Biochem. Pharmac.* 18, 1053-1059.
- MURAD, F., CHU, Y.M., RALL, T.W. & SUTHEFLAND, E.W. (1962). Adenylyl cyclase. *J. biol. Chem.*, 237, 1233-1238.
- MUSCHOLL, E. (1960). Die Hemmung der Noradrenaline-Aufnahme des Herzens durch Reserpin und die Wirkung von Tyramin. *Archs. exp. Path. Pharmac.*, 240, 234-241.
- MUSCHOLL, E. (1961). Effect of cocaine and related drugs on the uptake of noradrenaline by heart and spleen. *Br. J. Pharmac. Chemother.*, 16, 352-359.
- MYERS, R.D. & YAKSH, T.L. (1968). Feeding and temperature responses in the unrestrained rat after injection of cholinergic and aminergic substances into the cerebral ventricles. *Physiol. Behav.*, 3, 917-928.
- NAGCHAUDHURI, A.K. & LAHIRI, S.C. (1974). Use of goat trachea for an isolated tracheal chain preparation. *Ind. J. Pharmac.*, 6, 148-151.
- NICKERSON, M. (1957). Non-equilibrium drug antagonism. *Pharmac. Rev.*, 9, 246-259.
- NICKERSON, M. & CHAN, G.C.M. (1961). Blockade of responses of isolated myocardium to epinephrine. *J. Pharm. exp. Ther.*, 133, 186-191.
- NICKERSON, M. & COLLIER, B. (1975). Drugs inhibiting adrenergic nerves and structures innervated by them. In *Pharmacological Basis of Therapeutics*, 5th Edn. ed. Goodman, L.S. & Gilman, A., pp 533-564, New York: MacMillan Publishing Co. Inc.
- NICKERSON, M., BERGHOUT, J. & HAMMERSTAM, R.N. (1950). Mechanism of the acute the lethal effect of epinephrine in rats. *Am. J. Physiol.*, 160, 479-484.

- NORTHOVER, B.J. (1968). The effect of drugs on the constriction of isolated depolarized blood vessels in response to calcium or barium. *Br. J. Pharmac.*, 34, 417-428.
- OLIVER, G. & SCHAFER, E.A. (1895). The physiological effects of extracts of the suprarenal capsules. *J. Physiol., London*, 18, 230-276.
- OPKAND, P.M. & KRAVITZ, E.A. (1971). Localization of the sites of γ -aminobutyric acid (GABA) uptake in lobster nerve-muscle preparations. *J. Cell. Biol.*, 49, 75-89.
- OTSUKA, M., IVERSEN, L.L., Hall, Z.W. & KRAVITZ, E.A. (1966). Release of gammaaminobutyric acid from inhibitory nerves of lobster. *Nat Acad. Sci., U.S.A.*, 56, 1110-1114.
- QUISCHOFF, A.S. & VOGT, M. (1952). The nature of cardiac sympathin in the dog. *Br. J. Pharmac.*, 7, 319-324.
- PALAY, S.E. (1958). The morphology of synapses in the central nervous system. *Exptl. Cell Res. Suppl.* 5, 275-293.
- PASTORE, R. & ROBSON, J.S. (1973). The catecholamines. In *A Companion to Medical Studies*. Vol. 2, pp. 151-162, Oxford: Blackwell Scientific Publications.
- PATIL, P.N., PATEL, D.G. & KRELL, R.D. (1971). Steric aspects of adrenergic drugs XV Use of isomeric activity ratio as a criterion to differentiate adrenergic receptors. *J. Pharmac. exp. Ther.*, 176, 622-633.
- PATEL, S.R., GOYAL, R.K. & SHAH, D.S. (1978). Studies on the pharmacological effects of *tinospora cordifolia*. *J. Res. Ind. Med. Yög: Homéo.*, 13, 46-57.
- Patel, P.D., SHAH, D.S., PATEL, S.R. & GUJATI, C.D. (1979). Investigation of the mechanism of decreased sensitivity of the rat seminal vesicle to norepinephrine by lithium. *Pharmacology*, 18, 64-71.
- PATON, W.D.M. (1961). A theory of drug action based on the rate of drug-receptor combination. *Proc. R. Soc. B.*, 154, 21-69.
- PATON, W.D.M. & PERFY, W.I.M. (1963). Relationship between depolarization and block in cat's superior cervical ganglion. *J. Physiol., London*, 119, 43-57.
- PATON, W.D.M. & FANG, H.P. (1965). The uptake of atropine and related drugs by intestinal smooth muscle of the guinea-pig in relation to acetylcholine receptors. *Proc. R. Soc. B.*, 163, 1-44.
- PAULING, L. (1960). The nature of the chemical bond and the structure of molecules and crystals. *An Introduction to Modern Structural Chemistry*, 3rd Edn. Ithaca: Cornell University Press.
- PEPPERFATHER, J.N. & RAND, M.J. (1960). Increase in noradrenaline content of tissues after infusion of noradrenaline, dopamine and L-DOPA. *J. Physiol., London*, 154, 277-287.

- PILZ, W. (1965). Anticholinestrase. In *Methods of Enzymatic Analysis*. 2nd Edn. ed. Bergeyer, H.U. pp. 765-770, New York: Academic Press.
- POTTER, L.T. & AXELFOD, J. (1963). Subcellular localization of catecholamines in the tissues of the rat. *J. Pharmac. exp. Ther.*, 142, 291-298.
- POWELL, C.E. & SLATER, I.H. (1958). Blocking of inhibitory adrenergic receptors by a dichloro analog of isoproterenol. *J. Pharmac. exp. Ther.*, 122, 480-488.
- POWIS, G. (1973). The accumulation and metabolism of (-) noradrenaline by cells in culture. *Br. J. Pharmac.* 47, 568-575.
- RABB, W. & HUMPHREYS, R.J. (1947). Drug action upon myocardial epinephrine-sympathin concentration and heart rate (nitroglycerine, papaverine, priscol, dibenamine-hydrochloride). *J. Pharmac. exp. Ther.*, 89, 64-76.
- RABB, W. & GIGEE, W. (1954). Die Katecholamine des Herzens. *Archs. exp. Path. Pharmac.*, 219, 248-262.
- RABB, W. & GIGEE, W. (1955). Specific avidity of heart muscle to absorb and store epinephrine and norepinephrine. *Circulation Res.*, 3, 553-558.
- RAJANI, A.P., SHAH, D.S. & GULATI, O.D. (1977). A comparative study of the beta-adrenoceptors of guinea-pig, rabbit and rat trachea. *Archs. int. Pharmacodyn.*, 230, 190-198.
- RAIL, T.W. & GLIMAN, A.G. (1970). The role of cyclic AMP in the nervous system. *Neurosci. Res. Prog. Bull.* 8, 221-323.
- RANG, H.P. (1966). The kinetics of action of acetylcholine antagonists in smooth muscle. *Proc. R. Soc. B.* 164, 488-510.
- REUSE, J.J. (1948). Comparisons of various histamine antagonists. *Br. J. Pharmac. Chemother.*, 3, 174-180.
- ROBBINS, J. (1959). The excitation and inhibition of crustacean muscle by amino acids. *J. Physiol., London*, 148, 39-50.
- ROBBINS, J. & VANDER KROOT, W.G. (1958). The effect of picrotoxin on peripheral inhibition in the cray fish. *J. Physiol.*, 143, 543-551.
- ROBERTS, E. & FRANKEL, S. (1950). γ -Aminobutyric acid in brain : its formation from glutamic acid. *J. biol. Chem.*, 187, 55-63.
- ROBINSON, G.A., BUTCHER, R.W. & SUTHERLAND, E.W. (1967). Adenylcyclase as an adrenergic receptor. *Ann. N.Y. Acad. Sci.*, 139, 703-723.
- ROBSON, J.M. & STACEY, R.S. (1968). Drug receptor theories. In *Recent Advances in Pharmacology*, 4th Edn, pp. 99-133, London: J & A Churchill Ltd.

- RODBELL, M., BIPNBAUMER, I. & PHOL, S. (1971). In the Role of Adenyl cyclase and Cyclic-3',5'-AMP in Biological Systems. Fogarty Int. Center. Proc., Vol. 4, pp. 29-30, Washington, D.C.: U.S. Government Printing Office.
- ROTH, R.H., STJAFNE, L. & EHLER, U.S. VAN (1966). Acceleration of noradrenaline biosynthesis by nerve stimulation. *Life Sci.*, 5, 1071-1075.
- RUCKENBUSH, Y., GRIVER, M.L. & LAFAGE, J.P. (1965). Variations interspecifiques des modifications l'injection cerebro ventriculaire de catecholamines et de 5-hydroxytryptamine. *P.Seances Soc. Biol.*, Paris, 159, 1748-1750.
- RUFFOLO, R.R., TUPCOWSKI, B.S. & PATIL, P.N. (1977). Lack of cross-desensitization between structurally dissimilar α -adrenoceptor agonists. *J. Pharma Pharmac.*, 29, 378-381.
- SAAD, K. (1935). The effects of drugs on the isolated splenic capsule of man and other animals. *Quart. J. Pharm. Pharmac.*, 8, 31-38.
- SAIT, P.J. (1972). Inhibition of uptake₂ in the isolated rat heart by steroids, clonidine and methoxylated phenylethylamines. *Eur.J.Pharmac.*, 20, 329-340.
- SAMOLAJSKI, T. & MARKS, B.H. (1962). Localization of tritiated norepinephrine in mouse brain. *J. Histochem. Cytochem.*, 10, 392-399.
- SANDEFS, J., MILLER, D.D. & PATIL, P.N. (1975). Alpha-adrenergic and histaminergic effects of tolazoline imidazolines. *J. Pharmac. exp. Ther.*, 195, 362-371.
- SCHAFER, E.A. & MOORE, B. (1896). On the contractility and innervation of the spleen. *J. Physiol. London*, 20, 1-50.
- SCHLAUMBURG, B.P. & BOJESSEN, E. (1968). Specificity and thermodynamic properties of the corticosteroid binding to a receptor of rat thymocytes *in vitro*. *Biochem. biophys. Acta.* 170, 172-188.
- SCHYFF, R.W. (1951). Studies of the metabolism of $-C^{14}$ - DL- adrenaline. *J. biol. Chem.*, 189, 301-306.
- SCHILD, H.O. (1947). pA , A new scale for the measurement of drug antagonism. *Br. J. Pharmac. Chemother.*, 2, 189-206.
- SCHILD, H.O. (1957). Drug antagonism and pA_x . *Pharmac. Rev.*, 9, 242-246.
- SCHILD, H.O. (1962). Drugs and Enzymes. In Ciba Foundation Symposium, pp. 435-450, ed. Mongar, E.B. and De Reuck, J.D. London: J & A. Churchill Ltd.
- SCHILD, H.O. (1973). Drug receptors. ed. Rang. H.P. pp. 20-35, London: MacMillan Publishing Co. Inc.
- SEEDVALL, G.C. & KOPIN, I.J. (1967). Influence of sympathomimetic denervation and nerve impulse activity of tyrosine hydroxylase in the rat submaxillary gland. *Biochem. Pharmacol.*, 16, 39-46.

- SHAH, N.S., PATEL, S.R. & GULATI, O.D. (1974). Potentiation by 3,4-dimethoxyphenylthylamine DMPEA) and cocaine of norepinephrine-induced contraction of guinea-pig vas deferens J. Pharmac. exp. Ther., 190, 227-233.
- SHEYS, E.M. & GREEN, R.D. (1972). A qualitative study of alpha adrenergic receptors in the spleen and aorta of the rabbit. J. Pharmac. exp. Ther., 180, 317-325.
- SIGG, E.B., SOFFER, L. & GYERMEK, L. (1963). Influence of imipramine and related psychoactive agents on the effect of 5-hydroxytryptamine and catecholamines on the cat nictitating membrane. J. Pharmac. exp. Ther., 142, 13-20.
- SNADCOFF, G.W. (1957). Statistical Methods, 5th edi. pp. 55-101 and 122-129. Ames. The Iowa State College Press.
- SOMLYO, A.P. & SOMLYO, A.V. (1975). Ultrastructure of smooth muscles. In : Methods in Pharmacology, vol. 3, ed. Daniel, E.E. and Paton, D.M. pp. 3-44, New York: Plenum.
- SPECTOR, S., MEIMON, K., LOVENBERG, W. & SJORDEME, A. (1933). The presence and distribution of tyramine on mammalian tissues. J. Pharmac. exp. Ther., 140, 229-235.
- STEPHENSON, R.P. (1956). A modification of receptor theory. Br. J. Pharmac. 11, 371-393.
- STJARNE, L. (1966). Storage particles in noradrenergic tissues. Pharmac. Rev., 18, 425-432.
- STOLZ, F. (1904). Uber Adrenaline und Alkylaminacacetobrenzatechin. Ber. dtsh. Chem. ges., 37, 4149-4154.
- STROMBLAD, B.C.R. (1959). Uptake of injected ¹⁴C-adrenaline in denervated and in normally innervated submaxillary glands of the cat. Br. J. Pharmac., Chemother., 14, 273-276.
- STROMBLAD, B.C.R. & NICKERSON, M. (1961). Accumulation of epinephrine and norepinephrine by some rat tissues. J. Pharmac. exp. Ther., 134, 154-159.
- STURMAN, J.A. & SMITH, M.J.H. (1967). The binding of salicylate to plasma proteins in different species. J. Pharm. Pharmac., 19, 621-623.
- SUTHERLAND, E.W. & RALL, T.W. (1960). The relation of adenosine-3'-5'-phosphate and phosphorylase to the actions of catecholamines and other hormones. Pharmac. Rev., 12, 265-381.
- SUTHERLAND, E.W., RALL, T.W. & MENON, T. (1962). Adenyl cyclase. J. biol. Chem., 237, 1220-1227.
- TAKAGI, K. & TAKAYANAGI, I. (1970). Beta-adrenergic receptors in various organs., Jap. J. Pharmac., 20, 92-101.

- TAKANO, S. (1969). A study of the contraction of splenic strips in kids and dogs: with special reference to the cholinergic and adrenergic receptors. Jap. J. Pharmac. 19, 563-568.
- TAKAMINE, J. (1901). Blood pressure-raising principle of suprarenal glands. J. Ther. Gaz, 27, 221-227.
- TAKENAKA, F. (1963). Response of vascular strip preparations to noradrenaline and tyramine. Jap. J. Pharmac., 13, 274-281.
- TAKEUCHI, A. & TAKEUCHI, N. (1965). Localized action of gamma-aminobutyric acid on the crayfish muscle, J. Physiol, London, 177, 225-238.
- TAKEUCHI, A. & TAKEUCHI, N. (1969). A study of the action of picrotoxin on the inhibitory neuromuscular function of the crayfish. J. Physiol. London, 205, 377-391.
- TOMASI, V.S., KORETZ, T.K., RAY, J.D. & MARINETTI, G.V. (1970). Hormone action at the membrane level, III, The binding of epinephrine and glucagon to the rat liver plasma membrane. Biochem. Biophys. Acta., 211, 31-42.
- TRINDELE-BUEG, P. (1972). Physiological and pharmacological investigation of the isolated bronchial muscular system. Archs. exp. Path. Pharmac., 69, 77-107.
- TRINDELE-BUEG, U. & CECUT, J.H. (1964). The norepinephrine stores of isolated atria of guinea-pigs treated with reserpine. J. Pharmac. exp. Ther., 145, 151-161.
- TRIGGLE, D.J. (1971). Neurotransmitter Receptor Interactions, pp. 1-1600, New York: Academic Press.
- USERWOOD, P.N. & MACHILL, P. (1966). Chemical transmission at the insect excitatory neuromuscular synapse, Nature, London, 210, 634-636.
- VAIPAI, J. (1933). Action de l'adrenaline et de l'acetylcholine sur la rate. J. Physiol. Path. Gen., 31, 42-52.
- VAN FOSSUM, J.M. (1966). Limitations of Molecular Pharmacology. Advance in Drug Research ed. Harper, N.J. & Simmonds, A.B. Vol. 3, pp. 189-234.
- VAN FOSSUM, J.M. & ARIENS, E.J. (1962). Receptor reserve and the old phenomena. Archs. int. Pharmacodyn. 136, 385-413.
- VAN BREEMAN, C., FAFINAS, B.P., GEBFA, P. and MCNAGHTON, E.D. (1972). Excitation contraction coupling in rabbit aorta studied by the lanthanum method for measuring cellular calcium influx. Circ. Res., 30, 44-54.
- VAN BREEMAN, C., FAFINAS, B.P., Casteds, R., Gerba, P., Wuytack, F. and DETH, R. (1973). Factors controlling cytoplasmic Ca concentration. Phil. Trans. Roy. Soc. London, Ser. Biol. Sci., 265, 57-51.

- VANE, J.R. (1960). The actions of sympathomimetic amines on tyramine receptors. In Ciba Foundation Symposium on Adrenergic Mechanism. eds. Vane, W. and O'Connor, pp. 356-372, London, M.A. & A. Churchill.
- VERGFOASEN, A.J., DE BOER, J. & GOTTENBOS, J.J. (1967). Prostaglandins, Proc. 2nd. Moba; Su./psci,- pp. 211-218, Stockholm: Almqvist & Wiksell.
- VOGT, M. (1959). Catecholamine in braine. Pharmac. Rev. 11, 483-489.
- VULPAIN, A. (1958). Note Sur quelques reactions propres a la substance des capsules surrenales. Comp. Rend. Acad. Sci., Paris, 43, 663.
- WAKADE, A.R., KATWAF, R.S. & GULATI, O.D. (1970). Supersensitivity of the nictitating membrane to 5-hydroxytryptamine and norepinephrine after various procedures. J. Pharmac. exp. Ther., 175, 189-196.
- WASER, P.G. (1966). Autoradiographic investigations of cholinergic and other receptors in the motor and plate. Adv. Drug. Res. 3, 81-120.
- WAUD, D.R. (1968). Pharmacological receptors. Pharmac. Rev. 20, 48-88.
- WEINER, N., DPASKOEZY, P.R. & BUPAK, W.R. (1962). The activity of tyramine to liberate catecholamines in vivo. J. Pharmac.exp. Ther., 137, 47-55.
- WEISSEPMAN, M.A. & EERNAPD, L. (1974). Selective beta adrenergic receptor antagonism in the anesthetized dog. J. Pharmac. exp. Ther., 188, 357-367.
- WESTFALL, T.C. (1965). Uptake and exchange of catecholamines in rat tissues after administration D-and L-adrenaline. Acta physiol. Scand. 63, 336-342.
- WHITBY, L.G., AXELFOD, J. & WEIL-MALHERBE, H. (1961). The fate of H^3 -norepinephrine in animals. J. Pharmac. exp. Ther., 132, 193-201.
- WHITE, T.D., & KEEN, P. (1971). Effect of inhibitors of (Na⁺-K⁺)-dependent adenosine triphosphatase on the uptake of norepinephrine by synaptosomes. Mol. Pharmac. 7, 40-45.
- WIEST, W.G. & PAO, B.R. (1971). In Schering Workshop on Steroid Hormone Receptors. Advance in the Biosciences. ed. Faspe, G. Vol. 7, pp. 251-266. Oxford; Pergamon Press.
- WILBANDT, W. & ROSENBERG, T.C. (1961). The concept of carrier transport and its corollaries in pharmacology. Pharmac. Rev. 13, 109-183.
- WILLIAMS, R.T. (1967). Comparative patterns of drug metabolism. Fedn. Proc. 26, 1029-1036.
- WOIFE, D.E., POTTER, I.T., RICHARDSON, K.C. & AXELFOD, J. (1962). Localizing tritiated norepinephrine in sympathetic axons by electromicrograph autoradiography. Science, 138, 440-443.
- WUETMAN, R.J., KOPIN, I.J. & AXELFOD, J. (1963). The disposition of catecholamines in the rat uterus and the effect of drugs and hormones. J. Pharmac. exp. Ther., 144, 150-155.