

Index

PHARMACOLOGICAL REVIEWS*

Volume 24

1972

- Acetyl coenzyme A levels, ethanol effects, 104
- ACTH, effect on erythropoiesis, 479
- Adenine, molecular structure, 540
- Adenosine
 molecular structure, 540
 uptake inhibitors, 543
- Adenosine deaminase
 distribution, 525, 527
 inhibitors of, 544
- Adenosine triphosphatase
 histochemical localization, 525
 inhibitors, 544
- Adenosine triphosphate
 antagonism and potentiation of responses, 519
 formation, 512
 inactivation, 517
 response to
 dipyridamole, 519
 quinidine, 519
 tachyphylaxis, 519
 storage, 512
 synthesis, storage, release, and inactivation at
 adrenergic neuromuscular function, 537
 cholinergic neuromuscular junctions, 536
 purinergic neuromuscular junction, 536, 537
 tachyphylaxis to, 519
- Adenosine 5-triphosphate, molecular structure, 540
- Adenyl compounds
 adenosine deaminase inhibitors, 544
 adenosine triphosphatase inhibitors, 544
- * The subject index for the "New York Heart Association Symposium on Regulation of Catecholamine Metabolism in the Sympathetic Nervous System" is found in *Pharmacological Reviews* 24: 431-434 (June), 1972. The author index for the June issue is included in the index presented here.
- adenosine uptake inhibitors, 543
- aminophylline effects, 542
- caffeine effects, 542
- calcium action, 544
- dinitrophenol effects, 543
- drugs that antagonize action of, 541
- drugs that potentiate actions of, 543
- excitatory actions, 538; (table), 539
- imidazole effects, 542
- inhibitory actions, 538; (table), 539
- magnesium action, 544
- mepacrine effects, 541
- noradrenaline effects, 543
- pharmacology of, 535
- phenolamine effects, 542
- quinidine effects, 541
- quinine effects, 541
- alpha*-Adrenergic receptors, dopamine action, 8
- beta*-Adrenergic receptors, dopamine action, 9
- Adrenocortical hormones, effect on erythropoiesis, 479
- Alcohol dehydrogenase
 activity *in vivo*, 80
 enzymatic activities, 77
 relation between ADH and ethanol metabolism, 82
 structure, 77
- Alimentary canal, purinergic nerve control, 546
- Amino acid metabolism, ethanol effects, 106, 108
- Aminophylline, action on adenyl compounds, 542
- Amphetamines
 derivatives of (table), 40
 effects on retina, 49
 energy calculations, 42
- Androgens, effect on erythropoiesis, 479
- Anemia, relation to erythropoietin secretion, 491

- Anesthetics
 action on
 membrane, 583
 membrane calcium, 625
 membrane enzymes, 623
 membrane flow in granule secretion, 628
 membrane flow in neurosecretion, 628
 membrane proteins, 623
 concentration in membrane, 587
 effect on solute translocation across membranes, 630
 electrical stabilization of membrane, 584
 membrane disordering by, 620
 membrane expansion by, 615
 membrane fluidization by, 620
 membrane protection by, 604
 side on which action in membrane occurs, 631
- Angiotensin, effect on erythropoietin production, 475, 476
- Anti-erythropoietin serum
 anemic human kidney treated with, 471
 posthypoxic dog kidney treated with, 471
- Atack, C. V. *See* Carlsson, Kehr, Lindqvist, Magnusson and Atack, 371
- ATP. *See* Adenosine triphosphate
- Autonomic nervous system
 control of cyclic processes, 707
 control of sexual maturation, 707
 female sexual function
 coitus, 675
 control of, 671
 lactation, 688
 menstruation, 689
 oviposition in the bird, 674
 ovular transport, 672
 ovulation, 671
 ovulation in the bird, 674
 pregnancy, 677
 function in
 fetus, 690
 neonate, 690
 male sexual function
 clinical implications, 668
 control of, 658
 ejaculation, 665
 emission, 665
 erection, 663
 spermatogenesis, 658
 purinergic nerves, 510
 reproduction, control, 657
 circulatory factor, 657
- Axelrod, J., Dopamine- β -hydroxylase: regulation of its synthesis and release from nerve terminals, 233
- Baliga, B. S. *See* Wurtman, Pohorecky, and Baliga, 411
- Bell, Christopher, Autonomic nervous control of reproduction: circulatory and other factors, 657
- Berkowitz, Barry, *See* Spector, Tarver, and Berkowitz, 191
- Biogenic amines, metabolism, ethanol and, 127
- Bjur, R. (*See* Weiner, Cloutier, Bjur, and Pfeffer), 203
- Blood flow, coronary; dopamine effects, 12
- Blood glucose levels, ethanol effects, 98
- Blood pressure
l-dopa effects, 20
 dopamine effects on, 2
- Blood pressure changes
alpha-adrenergic receptors, 4
 antagonists, 3
 neurogenic mechanisms, 4
 vasodilating substances, 3
- Blood vessels, purinergic nerve control, 552
- Brainstem reticular formation, effect of hallucinogens, 52
- Brawley, Peter, and James C. Duffield, The pharmacology of hallucinogens, 31
- Burnstock, G., Purinergic nerves, 509
- Caffeine, action on adenylyl compounds, 542
- Calcium
 action on adenylyl compounds, 544
 membrane, anesthetic action on, 625
- Carbohydrates, metabolism, 705
- Carbohydrate utilization, ethanol and, 103
- Cardiovascular system, purinergic nerve control, 552
- Carlsson, A., W. Kehr, M. Lindqvist, T. Magnusson, and C. V. Atack, Regulation of monoamine metabolism in the central nervous system, 371
- Catalase, ethanol oxidation reaction mechanism, 70
- Catecholamines
 dopamine. *See* Dopamine
 metabolism, ethanol and, 129, 131
 particle size and proportion of volume occupied by membrane (table), 451
 repletion, dopamine effects, 19
- Central nervous system
 erythropoiesis regulation, 485
 noradrenaline in, 435; (table), 438
- Champlain, Jacques de, Report on the discussion of the fourth session, 427

- Chanoclavine structure, schematic diagram, 36
- Christenson, James G. *See* Dairman, Christenson and Udenfriend, 269
- Circulation
 autonomic nervous control, 690
 umbilical, 694
- Cirrhosis, dopamine effects, 17
- Citric acid cycle, ethanol effect, 102
- Cloutier, G. *See* Weiner, Cloutier, Bjur and Pfeffer, 203
- Cobalt, effect on erythropoiesis, 481, 488
- Coenzyme A levels, ethanol effects, 104
- Coitus, autonomic nervous control, 675
- Costa, E., A. R. Green, S. H. Koslow, H. F. Le Fevre, A. V. Revuelta, and C. Wang, Dopamine and noradrenergic axons: a study *in vivo* of their precursor product relationship by mass fragmentography and radiochemistry, 167
- Cyclic nucleotides, effect on erythropoiesis, 482
- Cyclic processes, autonomic control, 707
- Dairman, Wallace, James G. Christenson, and Sidney Udenfriend. Changes in tyrosine hydroxylase and dopa decarboxylase induced by pharmacological agents, 269
- Dinitrophenol, action on adenylyl compounds, 543
- Dipyridamole and nerve stimulation, adenosine triphosphate, responses to, 519
- l*-Dopa
 cardiac stimulation, 21
 cardiovascular effects, 19
 clinical significance, 20
 dopamine source, 19
 hypertension, 20
 hypotension, 20
 renal effects, 19
 renal function, 22
- Dopamine
 alpha-adrenergic effects, 8
 alpha-adrenergic receptors, 4
 beta-adrenergic effects, 9
 arrhythmia production, 11
 blocking agents, 6
 blood pressure changes
 antagonists, 3
 vasodilating substances, 3
 blood pressure, effects on, 2
 cardiovascular actions, 1
 catecholamine repletion, 19
 cirrhosis, 17
 clinical applications, 13
 l-dopa, source of, 19
 drug intoxication, 18
 heart failure, congestive, 13
 hemodynamic effects, 11
 coronary blood flow, 12
 hypertension, 17
 kidney, effects on, 12
 myocardial stimulation, 10
 chromotropic effects, 10
 inotropic effects, 10
 neurogenic mechanisms, 4
 renal actions, 1
 renal failure, 18
 shock, 14
 specific vascular receptor, 8
 structure-activity relationships, 7
 vascular receptors, physiological role, 22
 vasodepressor effects, 3
 vasodilation, 9
 by action on receptors, 5
 vasopressor effects, 2
 Drug intoxication, dopamine effects, 18
 Drugs, nerve-blocking. *See* Nerve-blocking drugs
 Duffield, James C. *See* Brawley and Duffield, 31
- Ejaculation, autonomic nervous control, 665
- Emission, autonomic nervous control, 665
- Enzymes, anesthetic actions on membrane, 623
- Erection, autonomic nervous control, 663
- Erythrogenin, 472
- Erythropoiesis
 central nervous system regulation, 481
 estrogen effects, 486
- Erythropoietin
 angiotensin, effect on production, 475, 476
 assay, 461
 biogenesis of, 459
 control of production, 459
 diseases with increased levels of (table), 494
 mechanisms of action, 489
 metabolism of, 487
 pharmacological agents which modify production, 475
 pharmacology of, 459
 physicochemical characterization, 465
 production affected by
 ACTH, 479
 adrenocortical hormones, 479
 androgens, 479

- Erythropoietin—*continued*
 angiotensin, 475
 cobalt, 481, 482
 cyclic nucleotides, 482
 5-hydroxytryptamine, 477
 norepinephrine, 477
 prostaglandins, 478
 thyroid hormones, 479
 vasoactive agents, 475
 vasopressin, 478
 production inhibitors, 483
 production sites, 467
 purification, 465
 relation of secretion to anemia and polycythemia, 491
 renal control of production, 473, 474
 sites of action, 489
 standardization, 461
 Erythropoietin serum, anti-. *See* Anti-erythropoietin serum
 Esophagus, purinergic nerve control, 547
 Estrogens, effects on erythropoiesis, 486
 Ethanol
 acetyl-coenzyme A levels, 104
 action on membranes, 122
 amino acid metabolism, 106, 108
 biogenic amines metabolism, 127
 carbohydrate utilization and, 103
 catecholamine metabolism and, 129, 131
 coenzyme A levels, 104
 effect on
 blood glucose levels, 98
 citric acid cycle, 102
 fat metabolism, 119
 gluconeogenesis, 98
 hepatic enzyme levels, 111
 hepatic fatty acid synthesis, 114
 hepatic glycogen levels, 98
 hepatic triglyceride synthesis, 115
 hepatic triglyceride utilization, 116
 iron metabolism, 132
 metabolic processes, 97
 porphyrin metabolism, 133
 fat metabolism and, 112
 fructose metabolism, 106
 galactose metabolism, 105
 glucose utilization, 103
 growth and, 112
 hematopoiesis and, 134
 hepatotoxicity *versus* nutritional balance, 123
 ketogenesis and, 121
 lactate metabolism, 103
 metabolic effects of, 67
 mobilization of depot fat, 119
 peroxidative effects, 123
 plasma free fatty acids, 120
 protein metabolism, 106
 pyruvate metabolism, 103
 serotonin metabolism, 127
 sorbitol metabolism, 106
 uric acid metabolism, 135
 Ethanol metabolism, 67
 alcohol dehydrogenase, 77
 2-carbon residues derived from ethanol, 97
 catalase, 70
 factors affecting rate, 69
 intermediary
 heart, 124, 126
 kidney, 124
 interrelations of ethanol and acetaldehyde in the liver (scheme), 87
 microsomal ethanol oxidizing system, 71; (scheme), 72
 miscellaneous routes, 77
 rate
 by-pass of dissociation of ADH-NADH complex, 89
 chronic ethanol intake, 90
 factors affecting, 89
 methods of measurement, 87
 NAD regeneration, 90
 physical factors, 93
 physiological factors, 93
 suggested pathways, 69
 Eye, purinergic nerve control, 556
 Euler, U. S. von, Regulation of catecholamine metabolism in the sympathetic nervous system, 365
 Fat metabolism
 ethanol and, 112
 ethanol effects, 119
 Fatty acids, intrahepatic oxidation; ethanol effects, 118
 Fisher, James W., Erythropoietin: pharmacology, biogenesis and control of production, 459
 Foetus
 adrenomedullary tissue, development of, 693
 autonomic circulatory control, development of, 690
 autonomic nervous function in, 690
 circulation
 autonomic agonists, 695

- homeostasis, 695
 umbilical, 694
 participation in initiation of labour, 700
- Fructose metabolism, ethanol effects, 106
- Fuxe, K. (*See* Goldstein, Fuxe and Hökfelt), 293
- Galactose metabolism, ethanol effects, 105
- Ganglia, sympathetic. *See* Sympathetic ganglia
- Gluconeogenesis, ethanol effects, 98
- Glucose utilization, ethanol effects, 103
- Goldberg, Leon I., Cardiovascular and renal actions of dopamine, 1
- Goldstein, M., K. Fuxe and T. Hökfelt, Characterization and tissue localization of catecholamine enzymes, 293
- Green, A. R. *See* Costa, Green, Koslow, Le Fevre, Revuelta, and Wang, 167
- Growth and ethanol, 112
- Gut, innervation of, 560
- Hallucinogens. *See also* Psychotomimetics and names of specific drugs or chemicals which cause hallucinations.
- actions on
 optic tract, 48, 49
 retina, 48, 49
 specific systems, 48
- chemicals, 32
- effects on
 averaged evoked responses, 54
 lateral geniculate nucleus, 50
- pharmacology of, 31
- structure-activity relations, 34
- structures, schematic diagrams of, 36
- Harmaline structure, schematic diagram, 36
- Hartman, Boyd K., and Sidney Udenfriend. The application of immunological techniques to the study of enzymes regulating catecholamine synthesis and degradation, 311
- Hawkins, Rosemary D., and H. Kalant, The metabolism of ethanol and its metabolic effects, 67
- Heart
l-dopa effects, 19, 21
 dopamine action, 10
 intermediary metabolism of ethanol, 124, 126
 purinergic nerve control, 552
- Hematopoiesis and ethanol, 134
- Hepatic fatty acid synthesis, ethanol effects, 114
- Hepatic glycogen levels, ethanol effects, 98
- Hepatic triglyceride synthesis, ethanol effects, 115
- Hepatic triglyceride utilization, ethanol effect, 116
- Hökfelt, T. *See* Goldstein, Fuxe and Hökfelt, 293
- Homeostasis, foetal, 695
- 5-Hydroxytryptamine. *See also* Serotonin effect on production of erythropoietin, 477
- Hypertension, dopamine effects, 17
- Imidazole, action on adenylyl compounds, 542
- Inosine, molecular structure, 540
- Intestine
 large, purinergic nerve control, 549
 small, purinergic nerve control, 547
- Iron metabolism, ethanol effect, 132
- Kalant, H. *See* Hawkins and Kalant, 67
- Kehr, U. *See* Carlsson, Kehr, Lindqvist, Magnusson and Atack, 371
- Ketogenesis and ethanol, 121
- Kidney
l-dopa effects, 19, 22
 dopamine effects, 12, 18
 intermediary metabolism of ethanol, 124
- Kirshner, Norman, and O. H. Viveros, The secretory cycle in the adrenal medulla, 385
- Kopin, Irwin J. and Stephen D. Silberstein, Axons of sympathetic neurons: transport of enzymes *in vivo* and properties of axonal sprouts *in vitro*, 245
- Koslow, S. H. *See* Costa, Green, Koslow, Le Fevre, Revuelta, and Wang, 167
- Lactate metabolism, ethanol effects, 103
- Lactation, autonomic nervous control, 688
- Lateral geniculate nucleus, effect of hallucinogens, 50
- Le Fevre, H. F. *See* Costa, Green, Koslow, Le Fevre, Revuelta, and Wang, 167
- Limbic system, effects of psychotomimetics, 56
- Lindqvist, M. *See* Carlsson, Kehr, Lindqvist, Magnusson, and Atack, 371
- Lipids, metabolism, 705
- Lipoprotein, formation and release, ethanol effects, 116
- Liver
 ethanol effect on
 hepatic enzyme levels, 111
 hepatic fatty acid synthesis, 114
 hepatic triglyceride synthesis, 115
 hepatic triglyceride utilization, 116

- Lung, purinergic nerve control, 550
- Lysergic acid diethylamide
effects on
 pharmacology of serotonin, 46
 retina, 49
 serotonin metabolism, 45
structure, schematic diagram, 36
variants of (table), 38
- Magnesium action on adenyly compounds, 544
- Magnusson, T. *See* Carlsson, Kehr, Lindqvist, Magnusson and Atack, 371
- Membrane
 anesthetic action on, 583
 solute translocation, 630
 concentrations of anesthetics, 587
 disordering by anesthetics, 620
 electrical stabilization
 by anesthetics, 584
 by tranquilizers, 584
- Membrane calcium
 anesthetic action on, 625
- Membrane enzymes
 anesthetic action on, 623
 ethanol action on, 122
 expansion by anesthetics, 615
 fluidization by anesthetics, 620
 protection by
 anesthetics, 604
 tranquilizers, 604
 side on which anesthetics act, 631
 tranquilizers
 action on, 583
 concentrations of, 587
- Membrane flow
 anesthetic actions on,
 granule secretion, 628
 neurosecretion, 628
- Membrane proteins
 anesthetic action on, 623
- Menstruation, autonomic nervous control, 689
- Mepacrine action on adenyly compounds, 541
- Mescaline structure, schematic diagram, 36
- Metabolism
 amino acid, 106, 108
 autonomic nervous control, 703
 biogenic amines, 127
 carbohydrates, 705
 catecholamine, 129, 131
 erythropoietin, 487
 ethanol, *See* Ethanol metabolism
 fat, 112, 119
 fructose, 106
 galactose, 105
 iron, 132
 lactate, 103
 lipids, 705
 porphyrin, 133
 protein, 106
 pyruvate, 103
 serotonin, 127
 effect of lysergic acid diethylamide, 45
 sorbitol, 106
 thermogenesis, 703
 uric acid, 135
- Microsomal ethanol oxidizing system; ethanol metabolism, 71
- Musacchio, José M., Report on the discussion of the third session, 361
- Muscle, smooth, purine nucleotides and nucleosides actions on, 515
- Neff, Norton H. Report on the discussion of the first session, 223
- Neocortex, effects of psychotomimetics, 57
- Neonate
 adrenomedullary tissue, development of, 693
 autonomic circulatory control, development of, 690
 autonomic disturbances, 706
 autonomic nervous function in, 690
 circulatory adaptation to extrauterine life, 697
 metabolism, 703
 respiration, 700
 initiation, 700
 respiratory distress syndrome, 701
- Nerve axons, sympathetic. *See* Sympathetic nerve axons
- Nerve-blocking drugs
 clinical specificity, 606
 selective action, 606
- Nerves, purinergic. *See* Purinergic nerves
- Nerve stimulation
 antagonism and potentiation of responses, 519
 response to
 dipyridamole, 519
 quinidine, 519
 tachyphylaxis to adenosine triphosphate, 519
- Neurons, sympathetic. *See* Sympathetic neurons
- Noradrenaline. *See also* Catecholamine
 action on adenyly compounds, 543

- central nervous system, 435; (table), 438
 content of noradrenaline-rich subcellular fractions from different tissues (table), 450
 sympathetically innervated tissues, 445; (table), 441
 sympathetic nerve axons, 437
 sympathetic neurons, subcellular localisation in, 435
- Noradrenergic vesicles**
 biochemical observations, 448
 central nervous system, 435; (table), 438
 composition, 449
 morphological observations, 448
 peripheral nervous system, 453
 sympathetically innervated tissues, 445; (table), 441
 sympathetic ganglia, 436; (table), 439
 sympathetic nerve axons, 437; (table), 439
- Norepinephrine effect on erythropoietin production, 477
- 5-Nucleotidase, histochemical localisation, 525, 526
- Oesophagus, purinergic nerve control, 547
- Optic tract, effects of hallucinogens, 48, 49
- Ovulation, autonomic nervous control, 671
- Penis, 663
 retractor muscle, 664
- Peripheral nervous system, noradrenergic vesicles, 453
- Pfeffer, R. I. *See* Weiner, Cloutier, Bjur and Pfeffer, 203
- Phenothiazine, blocking action (table), 539
- Phentolamine, action on adenylyl compounds, 542
- Phenylethylamine, derivatives of (table), 40
- Plasma free fatty acids and ethanol, 120
- Pletscher, A., Regulation of catecholamine turnover by variations of enzyme levels, 225
- Pohorecky, L. A. *See* Wurtman, Pohorecky, and Baliga, 411
- Polycythemia relation to erythropoietin secretion, 491
- Porphyrin metabolism, ethanol effect, 133
- Pregnancy
 autonomic nervous control, 677
 stress and, 687
- Prostaglandins, effect on erythropoietin production, 478
- Protein**
 content of noradrenaline-rich subcellular fractions from different tissues (table), 450
 membrane, anesthetic actions on, 623
- Protein metabolism, ethanol effects, 106
- Psilacin structure, schematic diagram, 36
- Psychotomimetics. *See also* Hallucinogens and names of specific drugs and chemicals known to cause hallucinations
- actions on
 "intrinsic" thalamic nuclei, 54
 limbic system, 56
 neocortex, 57
 non-specific systems, 52
- arousing effects, 43
- effects on brainstem reticular formation, 52
- energy calculations (table), 41
- sensory system hypothesis, 47
- Purine, molecular structure, 540
- Purine nucleosides, direct actions on smooth muscle, 515
- Purine nucleotides
 direct action on smooth muscle, 515
 release of, 513
- Purinergic nerves, 509
 adenosine triphosphate
 formation and storage, 512
 inactivation, 517
- adenyl compounds and purinergic transmission, 535
- alimentary canal, 546
- blood vessels, 552
- cardiovascular system, 552
- distribution, 545
- electrophysiology of transmission, 528
- esophagus, 547
- evolution, 545
- eye, 556
- heart, 552
- inhibitory junction potentials, 528, 529, (table), 531
- innervation of the gut, 560
- interactions with cholinergic and adrenergic responses in single cells, 533
- junction potentials, inhibitory and excitatory (table), 531
- large intestine, 549
- lung, 550
- oesophagus, 547
- postsynaptic action of transmitter, 533
- purine compound released from non-adrenergic inhibitory nerves, 562
- rebound excitation, 532

- Purinergetic nerves—*continued*
 reproductive organs, 551
 small intestine, 547
 stomach, 546
 structure, 520
 terminals, fine structure, 521
 transmitter substance, 511
 urogenital bladder, 550
 urogenital system, 550
 Purinergetic neurones, location, 520
 Pyruvate metabolism, ethanol effect, 103
- Quinidine
 action on adenyly compounds, 541
 blocking action (table), 539
 nerve stimulation and adenosine triphosphate responses to, 519
- Quinine action on adenyly compounds, 541
- Rall, Theodore W., Role of adenosine 3',5'-monophosphate (cyclic AMP) in actions of catecholamines, 399
- REF. *See* Renal erythropoietic factor
- Renal erythropoietic factor, 472
- Reproduction, autonomic nervous control, 658
- Reproductive organs, purinergetic nerve control, 551
- Respiration, initiation of, 700
- Respiratory distress syndrome, 701
- Retina, effects of hallucinogens, 48, 49
- Revuelta, A. V. *See* Costa, Green, Koslow, Le Fevre, Revuelta, and Wang, 167
- Sandler, M., and M. B. H. Youdim, Multiple forms of monoamine oxidase: functional significance, 331
- Scrotum, 662
- Seeman, Philip. The membrane actions of anesthetics and tranquilizers, 583
- Serotonin. *See also* 5-Hydroxytryptamine metabolism
 effects of LSD, 45
 ethanol and, 127
 pharmacology, effects of LSD, 46
- Sexual function
 female
 autonomic nervous control, 671
 coitus, 675
 lactation, 688
 menstruation, 689
 oviposition in the bird, 674
 ovular transport, 672
 ovulation, 671
 ovulation in the bird, 674
 pregnancy, 677
 male
 autonomic nervous control, 658
 clinical implications of autonomic nervous control, 668
 ejaculation, 665
 emission, 665
 erection, 663
 spermatogenesis, 658
 Sexual maturation, autonomic control, 707
 Shock, dopamine effects, 14
 Silberstein, Stephen D. *See* Kopin and Silberstein, 245
 Smith, A. D., Subcellular localisation of noradrenaline in sympathetic neurones, 435
 Snyder, Solomon. Report on the discussion of the second session, 291
 Sorbital metabolism, ethanol effects, 106
 Sourkes, T. L., Influence of specific nutrients on catecholamine synthesis and metabolism, 349
 Spector, Sydney, James Tarver, and Barry Berkowitz, Effect of drugs and physiological factors in the disposition of catecholamines in blood vessels, 191
 Spermatogenesis, autonomic nervous control, 658
 Sperm storage and resorption, 660
 Splenic nerve, bovine; noradrenaline-rich particulate fractions, composition of (table), 450
 Stomach, purinergetic nerve control, 546
 Sympathetic ganglia, noradrenaline in, 436; (table), 439
 Sympathetic nerve axons, noradrenaline in, 437; (table), 439
 Sympathetic neurons, subcellular localisation of noradrenaline, 435
 Tarver, James. *See* Spector, Tarver, and Berkowitz, 191
 Testis, 658
 Tetrahydrocannabinol structure, schematic diagram, 36
 Thalamic nuclei, effect of hallucinogens, 54
 Thermogenesis, metabolism, 703
 Thoenen, Hans. Comparison between the effect of neuronal activity and nerve growth factor on the enzymes involved in the synthesis of norepinephrine, 255
 Thyroid hormones, effect on erythropoiesis, 479
 Tissues, sympathetically innervated, noradrenaline in, 445; (table), 441

- Tranquilizers**
 action on membrane, 583
 concentrations in membrane, 587
 electrical stabilization of membrane, 584
 membrane protection by, 604
- Trimethoxyamphetamine structure, schematic diagram, 36
- Tryptamine derivatives (table), 39
- Udenfriend, Sidney.** Molecular biology of the sympathetic nervous system, 165
 See Dairman, Christenson and Udenfriend, 269
 See Hartman and Udenfriend, 311
- Uric acid metabolism and ethanol, 135
- Urinary bladder, purinergic nerve control, 550
- Urogenital system, purinergic nerve control, 550
- Uterus**
 blood flow, 682
 control of motility, 679
 innervation, 677
- Vasoactive agents,** effect on erythropoietin production, 475
- Vasopressin,** effect on erythropoietin production, 478
- Viveros, O. H. *See* Kirshner and Viveros, 385
- Wang, C.** *See* Costa, Green, Koslow, Le Fevre, Revuelta, and Wang, 167
- Weiner, N., G. Cloutier, R. Bjur, and R. I. Pfeffer,** Modification of norepinephrine synthesis in intact tissue by drugs and during short-term adrenergic nerve stimulation, 203
- Wurtman, R. J., L. A. Pohorecky, and B. S. Baliga.** Adrenocortical control of the biosynthesis of epinephrine and proteins in the adrenal medulla, 411
- Youdim, M. B. H.** *See* Sandler and Youdim, 331