

# The Journal of PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS

*A Publication of The American Society  
for Pharmacology and Experimental Therapeutics*

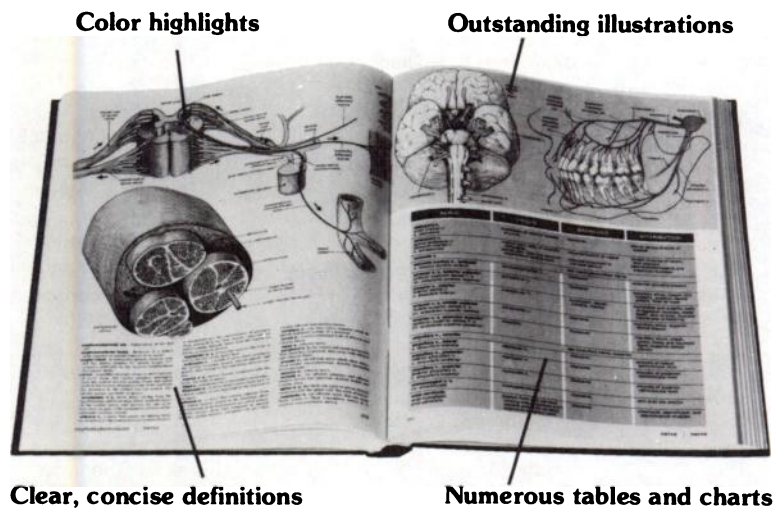
Founded by John J. Abel 1909

<b>Editor</b>	Eva King Killam		
<b>Assistant Editor</b>	Mannfred A. Hollinger		
<b>Editors for Specific Fields</b>	<i>Analgesia and Drug Abuse</i> Joseph Cochin <i>Autonomic Pharmacology</i> Robert E. Stitzel <i>Behavioral Pharmacology</i> John A. Harvey <i>Cardiovascular Pharmacology</i> Henry R. Besch, Jr. Theodore M. Brody Donald V. Priola <i>Cell Pharmacology</i> Toshio Narahashi George B. Weiss	<i>Chemotherapy</i> H. George Mandel <i>Developmental Pharmacology</i> Bernard L. Mirkin <i>Drug Metabolism and Disposition</i> Edward Bresnick Vincent G. Zannoni <i>Endocrine Pharmacology</i> Paula H. Stern <i>Gastrointestinal Pharmacology</i> Thomas F. Burks	<i>Immunopharmacology</i> Sydney Spector <i>Neuropharmacology</i> S. J. Enna A. James Hance Charles O. Rutledge <i>Pulmonary Pharmacology</i> Mannfred A. Hollinger <i>Renal Pharmacology</i> William O. Berndt <i>Toxicology</i> Curtis D. Klaassen
<b>Editorial Advisory Board</b>	Martin W. Adler Edson X. Albuquerque Edmund G. Anderson Lewis Aronow Leslie E. Bailey Michael D. Bailie Paul Bass John A. Bevan C. Paul Bianchi Leslie C. Blaber David A. Blake Floyd E. Bloom Gary Brooker Carl K. Buckner David B. Bylund Theodore J. Cicero Doris H. Clouet Leonard Cook E. E. Daniel William C. de Groat Walter R. Dixon J. W. Downie Linda Dykstra Hugh L. Evans James A. Ferrendelli Lawrence J. Fischer William W. Fleming Ray W. Fuller Gerard L. Gebber James W. Gibb Shri N. Giri Dora B. Goldstein	Frank R. Goodman Charles W. Gorodetzky Garrett J. Gross T. Kendall Harden Harold F. Hardman Louis S. Harris Richard J. Head Philip C. Hoffmann Jordan L. Holtzman Stephen G. Holtzman Jerry B. Hook David M. Jacobowitz Donald R. Jasinski Alain F. Junod S. M. Kirpekar Conan Kornetsky Edwin A. Kroeger Wayne Levin Louis Levy George E. Lindenmayer Walter Lovenberg Benedict R. Lucchesi K. U. Malik John C. McGiff Donald E. McMillan Jerry Mitchell Perry B. Molinoff W. H. Morse Jose M. Musacchio Mary J. Mycek Robert A. Neal Achilles J. Pappano	William A. Pettinger Larissa A. Pohorecky James W. Putney, Jr. Arthur Raines Barbara Rennick G. Alan Robison C. R. Ross Ronald P. Rubin Robert R. Ruffolo, Jr. Betty I. Sasyniuk Arnold Schwartz Lewis S. Seiden Eric J. Simon Roger P. Smith John L. Sutko Robert I. Taber A. E. Takemori Robert E. Ten Eick Thomas R. Tephly Richard E. Tessel C. D. Thron U. Trendelenburg Betty M. Twarog Norman J. Uretsky Martin A. Wasserman I. M. Weiner Benjamin Weiss Richard M. Welch David P. Westfall Martin M. Winbury Barry B. Wolfe Ben G. Zimmerman
<b>Board of Publications Trustees</b>	Norman Weiner, <i>Chairman</i> James A. Bain Allen H. Conney George I. Drummond	Leon I. Goldberg Eva King Killam Norman Kirshner Kenneth C. Leibman	Walter Modell Paul L. Munson Clement A. Stone
<b>Acting Executive Officer</b>	Key Croker		

# Melloni's Illustrated Medical Dictionary

Just published —  
the  
ideal medical  
reference for

- office
- lab
- clinic
- library



For the person whose job requires knowledge of health science terminology, **Melloni's** is the reference to turn to. Medical words, definitions, concepts — all are explained clearly and quickly in a unique visual format. Readers get a concise and rapidly comprehended store of knowledge. Retention is improved, too, because with **Melloni's** they're not just reading a definition, they're seeing it!

One reviewer said,  
*"If a dictionary could ever get on a best seller list, Melloni's should! Readable, interesting format, beautiful illustrations — highly recommended!"*

**Order  
today!**

1979/532 pages/27,085 entries/2,537 illustrations/\$18.95



**Williams & Wilkins**

*Publishers of medical and scientific books for 80 years.*

Yes, please send me \_\_\_\_\_ copy(ies) of the exciting new MELLONI'S ILLUSTRATED MEDICAL DICTIONARY at \$18.95 each, on 20-day approval. (If purchased in Maryland, please add 5% sales tax.)

\_\_\_\_\_  
Name

\_\_\_\_\_  
Library

\_\_\_\_\_  
Address

\_\_\_\_\_  
City State Zip

check enclosed  bill me  VISA  MASTER CHARGE

TOLL-FREE TELEPHONE ORDERING: call 1-800-638-0672.

In Maryland call collect: 528-4221.

**Williams  
& Wilkins**

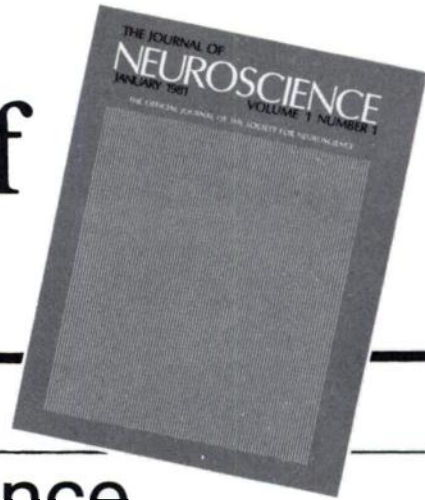
Dept. 280 P.O. Box 1496 Baltimore, Maryland 21202

<b>Ultrafiltration of Gentamicin and Netilmicin <i>in Vivo</i>.</b> Enrique Pastoriza-Munoz, Daniel Timmerman, Stuart Feldman and George J. Kaloyanides	604
<b>Differential Dose- and Time-Dependent Effects of Molindone on Dopamine Neurons of Rat Brain: Mediation by Irreversible Inhibition of Monoamine Oxidase.</b> Emanuel Meller and Eitan Friedman	609
<b>Evidence for a <math>\gamma</math>-Aminobutyric Acid (GABA) Mediation in the Benzodiazepine Inhibition of the Release of Met<sup>5</sup>-Enkephalin Elicited by Depolarization.</b> L. G. Harsing, Jr., H.-Y. T. Yang and E. Costa	616
<b>Naloxone without Transfusion Prolongs Survival and Enhances Cardiovascular Function in Hypovolemic Shock.</b> Nelson J. Gurl, David G. Reynolds, Thomas Vargish and Robert Lechner	621
<b>Naltrexone Improves Survival Rate and Cardiovascular Function in Canine Hemorrhagic Shock.</b> Nelson J. Gurl, David G. Reynolds, Thomas Vargish and Robert Lechner	625
<b>Maturation of Sympathetic Neurotransmission in the Rat Heart. VIII. Slowed Development of Noradrenergic Synapses Resulting from Hypothyroidism.</b> Christopher Lau and Theodore A. Slotkin	629
<b><math>\alpha</math>-2 Adrenergic Inhibition of Intestinal Secretion Induced by Prostaglandin E<sub>1</sub>, Vasoactive Intestinal Peptide and Dibutyryl Cyclic AMP in Rat Jejunum.</b> Toshio Nakaki, Teruo Nakadate, Satoshi Yamamoto and Ryuichi Kato	637
<b>Morphine, Pentobarbital and Naloxone in the Ventral Medullary Chemosensitive Areas: Differential Respiratory and Cardiovascular Effects.</b> M. A. Hurlé, A. Mediavilla and J. Flórez	642
<b><i>In Vivo</i> and <i>in Vitro</i> Studies on the Binding of Salicylate to Human Plasma Proteins: Evidence for One Type of Binding Site.</b> B. Elliott Cham, Felix Bochner, Debra M. Imhoff, Gerard Byrne and Michael Gunsberg	648
<b>Valproic Acid: Brain and Plasma Levels of the Drug and Its Metabolites, Anticonvulsant Effects and <math>\gamma</math>-Aminobutyric Acid (GABA) Metabolism in the Mouse.</b> Heinz Nau and Wolfgang Löscher	654
<b><math>\gamma</math>-Aminobutyric Acid (GABA) Receptor Stimulation. I. Neuropharmacological Profiles of Progabide (SL 76002) and SL 75102, with Emphasis on Their Anticonvulsant Spectra.</b> Paul Worms, Henri Depoortere, Alain Durand, Paolo L. Morselli, Kenneth G. Lloyd and Giuseppe Bartholini	660
<b><math>\gamma</math>-Aminobutyric Acid (GABA) Receptor Stimulation. II. Specificity of Progabide (SL 76002) and SL 75102 for the GABA Receptor.</b> Kenneth G. Lloyd, Sonia Arbilla, Kevin Beaumont, Mike Briley, Graziella de Montis, Bernard Scatton, Salomon Z. Langer and Giuseppe Bartholini	672
<b><math>\gamma</math>-Aminobutyric Acid (GABA) Receptor Stimulation. III. Effect of Progabide (SL 76002) on Norepinephrine, Dopamine and 5-Hydroxytryptamine Turnover in Rat Brain Areas.</b> Bernard Scatton, Branimir Zivkovic, Jaroslav Dedek, Kenneth G. Lloyd, Jean Constantinidis, René Tissot and Giuseppe Bartholini	678
<b><math>\gamma</math>-Aminobutyric Acid (GABA) Receptor Stimulation. IV. Effect of Progabide (SL 76002) and Other GABAergic Agents on Acetylcholine Turnover in Rat Brain Areas.</b> Bernard Scatton and Giuseppe Bartholini	689
<b>The Effects of Morphine on Calcium-Regulated Phosphorylation of Synaptosomal Cytosolic Proteins from Rat Striatum.</b> James P. O'Callaghan, Judith C. Juskevich and Walter Lovenberg	696
<b>Erratum</b>	702
<b>Index, Volume 220, January-March, 1982</b>	703

## AUTHOR INDEX

Arbilla, S., 672	Fitzpatrick, T. M., 521	Lloyd, K. G., 660, 672, 678	Rose, J. C., 521
Barry, W. H., 488	Flórez, J., 642	Löscher, W., 654	Rosow, C. E., 464, 468
Bartholini, G., 660, 672, 678, 689	Freed, C. R., 579	Lovenberg, W., 696	Rush, G. F., 547
Beaumont, K., 672	Friedman, E., 609	Ludens, J. H., 585	Scatton, B., 672, 678, 689
Berkowitz, B. A., 499	Goldberg, M. R., 552	Lukas, S. E., 561	Seltzman, T. P., 568
Bochner, F., 648	Gunsberg, M., 648	Mayor, G. H., 540	Semeyn, D. R., 536
Braselton, W. E., 540	Gurll, N. J., 621, 625	McCleary, P. E., 592	Slizgi, G. R., 585
Briley, M., 672	Hand, J. M., 526	Mediavilla, A., 642	Slotkin, T. A., 629
Browner, M., 482	Harrington, F. W., 597	Meller, E., 609	Smith, H. E., 552
Buckner, C. K., 526	Harsing, L. G., Jr., 616	Miller, J. M., 464, 468	Smith, J. H., 540
Byrne, G., 648	Hook, J. B., 540, 547	Miller, R. J., 449, 456	Smith, T. W., 488
Cham, B. E., 648	Horowitz, J. D., 488	Moreton, J. E., 561	Stinger, R. B., 521
Cochin, J., 464, 468	Hurlé, M. A., 642	Morselli, P. L., 660	Takemori, A. E., 494
Commissaris, R. L., 536	Hynes, M. D., 499	Nakadate, T., 637	Tallent, C. R., 568
Connors, B. W., 476	Imhoff, D. M., 648	Nakaki, T., 637	Timmerman, D., 604
Constantinidis, J., 678	Jollow, D. J., 504	Nau, H., 654	Tissot, R., 678
Cook, C. E., 568	Juskevich, J. C., 696	Notley, B. A., 574	Tonsager, S. R., 540
Cooper, S. E., 597	Kachur, J. F., 449, 456	Oates, J. A., 552	Tung, C.-S., 552
Corey, E. J., 521	Kaloyanides, G. J., 514, 604	O'Callaghan, J. P., 696	Vargish, T., 621, 625
Costa, E., 616	Kato, R., 637	Pastoriza-Munoz, E., 604	Wang, M.-Y., 514
Dedek, J., 678	Kendall, D. A., 482	Portoghese, P. S., 494	Ward, S. J., 494
de Montis, G., 672	Khazan, N., 561	Poulsen-Burke, J., 464, 468	Will, J. A., 526
Depoortere, H., 660	Kluwe, W. M., 597	Price, V. F., 504	Wooten, J. D., III, 568
Durand, A., 660	Kot, P. A., 521	Prince, D. A., 476	Worms, P., 660
Echizen, H., 579	Kuo, C.-H., 547	Ramwell, P. W., 521	Yamamoto, S., 637
Enna, S. J., 482	Langer, S. Z., 672	Rech, R. H., 536	Yang, H.-Y., 616
Feldman, R. D., 552	Lau, C., 629	Reynolds, D. G., 621, 625	Zivkovic, B., 678
Feldman, S., 514, 604	Leander, J. D., 592	Rikans, L. E., 574	
Field, M., 449, 456	Lechner, R., 621, 625	Robertson, D., 552	

# Tap into the broadest international coverage of the most rapidly growing branch of biological science



## The Journal of Neuroscience *the Official Journal of the Society for Neuroscience*

You need **The Journal of Neuroscience** NOW, because there's no better way to keep up with crucial advances that affect YOUR work.

You need its interdisciplinary coverage, its scouting of findings in all areas of neuroscience. You'll appreciate the way it mirrors the objectives of the North American Society for Neuroscience, as well as the Societies in Europe and Japan. And the way it keeps you absolutely up-to-date, no matter where significant breakthroughs occur.

### Here's a sampling of recent\* articles:

- Morphology and Synaptic Connections of Ultrafine Primary Axons in Lamina I of the Spinal Dorsal Horn: Candidates for the Terminal Axonal Arbors of Primary Neurons with Unmyelinated (C) Axons
- *In Vitro* Resetting of the Circadian Clock in the *Aplysia* Eye
- Rohon-Beard Neurons Arise from a Substitute Ancestral Cell after Removal of the Cell from Which They Normally Arise in the 16-Cell Frog Embryo
- Postnatal Development of Dopaminergic Neurons in the Rabbit Retina
- Brain Peptidase with a Unique Neuronal Localization: The Histochemical Distribution of Dipeptidyl — aminopeptidase II
- Developmental Stage-specific Changes in Lectin Binding to Mouse Cerebellar Cells *In Vitro*
- The Laminar Origin and Distribution of the Crossed Tectoreticular Pathways

\*from the August and October 1981 issues.

### Section Editors

#### *Molecular Neuroscience*

Solomon H. Snyder

#### *Cellular Neuroscience*

Michael V. Bennett

#### *Developmental Neuroscience*

Gerald D. Fischbach

#### *Neural Systems*

Edward V. Evarts

R. W. Guillery

#### *Behavioral Neuroscience*

Eric R. Kandel

The Journal is edited by W. Maxwell Cowan of the Salk Institute for Biological Studies. The Board of Publication Trustees includes Julius Axelrod, Herbert H. Jasper, Seymour S. Kety, Vernon B. Mountcastle, Walle J. H. Nauta, and Pedro N. Rudomin.

Encourage your library to subscribe, and start using this first-rate journal. The institutional fee for a year's subscription is \$230.00. Once your department or institution subscribes, YOU can subscribe for the discount individual rate of \$60.00.

**SEND IN THIS COUPON TODAY.**

Please sign me up for a year's subscription to **The Journal of Neuroscience**, starting in January, 1982.

Institutional: \$230.00

Discount Individual: \$60.00 (With Institutional subscription).

(Add \$20.00 outside the US)

**PAYMENT**  Check enclosed  Bill me  MasterCard  VISA

Card Number

Expiration

Name

Address

City

State

Zip

**ORDER FREE BY PHONE:** To order with or without credit card, call 1-800-638-0672 between 9 am and 4 pm. Maryland residents call collect, 528-4221.



**Williams & Wilkins**

Dept. 374, P.O. Box 1496, Balto., MD 21203

JONAD 90530

Naunyn-Schmiedeberg's **Archives of**  
**Pharmacology**

December II

Volume 318 Number 2 1981

**K.-H. Graefe:** The Disposition of  $^3\text{H}$ -(-) Noradrenaline in the Perfused Cat and Rabbit Heart 71

**F. Brandão, E. Rodrigues-Pereira, J. G. Monteiro, R. Davidson:** A Kinetic Study of the Release of Noradrenaline by Tyramine 83

**L. G. Garland, N. V. Marrion, G. R. Martin:** The Extraneuronal O-Methylation of  $^3\text{H}$ -( $\pm$ )Isoprenaline by Guinea-Pig Tracheal Rings in vitro 88

**R. Chermat, L. Doaré, F. Lachapelle, P. Simon:** Effects of Drugs Affecting the Noradrenergic System on Convulsions in the Quaking Mouse 94

**D. Dawbarn, C. J. Pycock:** Motor Effects Following Application of Putative Excitatory Amino Acid Antagonists to the Region of the Mesencephalic Dopamine Cell Bodies in the Rat 100

**E. Habermann:** Tetanus Toxin and Botulinum A Neurotoxin Inhibit and at Higher Concentrations Enhance Noradrenaline Outflow from Particulate Brain Cortex in Batch 105

**P. Honerjäger, M. Schäfer-Korting, M. Reiter:** Involvement of Cyclic AMP in the Direct Inotropic Action of Amrinone. Biochemical and Functional Evidence 112

**S. Halbach, G. Schönsteiner, F. Ebner, M. Reiter:** The Effects of *p*-Chloromercuriphenylsulfonic Acid (PCMBS) on Force of Concentration of Mammalian Myocardium and on ATP Hydrolysis by Sarcolemmal ATPase 121

**E. F. Smith III, A. M. Lefer, J. B. Smith, K. C. Nicolaou:** Thromboxane Synthetase Inhibitors Differentially Antagonize Thromboxane Receptors in Vascular Smooth Muscle 130

**G. Planelles, J. Teulon, T. Anagnostopoulos:** The Effects of Barium on the Electrical Properties of the Basolateral Membrane in Proximal Tubule 135

Indexed in Current Contents



Springer International

Naunyn-Schmiedeberg's Arch Pharmacol  
 ISSN 0028-1298 NSAPCC 318(2) 71-142 (1981)