

Archives
 (Smythies Collection)
 January 29, 2015

Information on books relevant to neuropsychopharmacology published by John Smythies

- Smythies JR. *Schizophrenia: Chemistry, Metabolism and Treatment*. Springfield, Illinois, Charles C. Thomas, 1963.

This is a review of what was known half a century ago about these aspects of biological psychiatry. The field at that time was dominated by the dopamine hypothesis with a section also by the Osmond-Smythies transmethylaton hypothesis.

- Smythies JR. *The Neurological Foundations of Psychiatry*. Oxford, Blackwell. 1966

This reviews brain mechanisms in the anatomical sense related to psychological function and its disorders. The full title is “The neurological foundations of psychiatry : an outline of the mechanisms of emotion, memory, learning, and the organization of behaviour, with particular regard to the limbic system” / [by] J. R. Smythies. Consultants: W. Ross Adey, Joseph V. Brady [and] W. Grey Walter

- Smythies JR (with HE Himwich and SS Kety, editors) *Amines and Schizophrenia*. New York, Pergamon Press. 1966

A multiauthored book dealing with the many roles of amines in schizophrenia. It is available on Amazon where the table of contents can be visualized.

- Smythies JR. *Biological Psychiatry*. Heinemann, 1968. German edition, 1971.

A short general account of biological psychiatry. It is available on Amazon where the table of contents can be read.

- Smythies JR. *Brain Mechanisms and Behaviour*. Oxford, Blackwell, 1970. Japanese edition, 1973.

A general review of brain mechanisms involved in behaviour. It is available on Amazon but the chapter headings and contents are not listed.

- Smythies JR and Corbett LC. *Psychiatry for Students of Medicine*. London, Heinemann, 1976. Spanish edition, 1981.

An account of biological psychiatry written especially for general physicians and medical students. It is available on Amazon but table of contents and chapter headings are not given.

- Smythies JR and Bradley RJ (editors). *Receptors in Pharmacology*. New York, Dekker, 1978.

A general review of this topic. Is available on Amazon but chapter headings and content are not given.

- Smythies J. *Every Person's Guide to Antioxidants*, Rutgers University Press, 1998

This is a comprehensive account of the role of oxygen radicals and antioxidant agents in therapy. It is available on Amazon where the following reviews are printed:

"Smythies takes an extremely detailed and comprehensive look at the current scientific knowledge of the role of antioxidants in human health. A book for the educated layperson that's well balanced and free of the hype that often accompanies the topic of antioxidants!" --Balz Frei, editor of *Natural Antioxidants in Human Health and Disease* "Smythies clearly explains the basic science of antioxidants and then describes the actual studies supporting the importance of these nutrients to health promotion and disease prevention, providing a strong foundation for his practical advice about diet and supplements. It's a rare treat to see full citations provided for follow-up by the interested reader." --Jeffrey B. Blumberg, Chief, Antioxidants Research Laboratory, Jean Mayer USDA Human Nutritional Research Center on Aging, Tufts University What are antioxidants? What do they do? Should you be taking them? How much is enough, or too much? Dr. John Smythies explores these and other questions you need to have answered about

antioxidants in *Every Person's Guide to Antioxidants*. Oxidants are naturally occurring chemicals in our bodies that derive from oxygen to facilitate essential biochemical processes. However, most oxidants are potentially toxic molecules and the body contains a number of antioxidants for protection against these toxic effects. Overproduction of oxidants, or underproduction of antioxidants, leads to oxidative stress, which has been linked to a wide range of chronic diseases, including heart disease, cancer, diabetes, and Alzheimer's. Smythies thoroughly evaluates current scientific work on this subject and suggests that a high proportion of many of these diseases can be prevented, or their onset delayed, by proper intake of antioxidants. He examines the pros and cons of the debate over how this necessary intake should be achieved, by eating more fruits and vegetables or by taking supplements in pill form. Smythies surveys the toxicity of antioxidants and recommends under what circumstances they should be given with caution or not at all. He also discusses whether taking supplements requires medical supervision and lists good sources of antioxidants in fruits and vegetables.”

- Smythies JR. *The Dynamic Neuron*. Cambridge MA., MIT Press, 2002.

This is a comprehensive review of the cellular and molecular mechanisms underlying synaptic plasticity in the brain. It is available on Amazon where the following description of the book is given.

“The traditional model of synapses as fixed structures has been replaced by a dynamic one in which synapses are constantly being deleted and replaced. This book, written by a leading researcher on the neurochemistry of schizophrenia, integrates material from neuroscience and cell biology to provide a comprehensive account of our current knowledge of the neurochemical basis of synaptic plasticity. The book presents the evidence for synaptic plasticity, an account of the dendritic spine and the glutamate synapse with a focus on redox mechanisms, and the biochemical basis of the Hebbian synapse. It discusses the role of endocytosis, special proteins, and local protein synthesis. Additional topics include volume transmission, arachidonic acid signaling, hormonal modulation, and psychological stress. Finally, the book considers pharmacological and clinical implications of current research, particularly with reference to schizophrenia and Alzheimer's disease.”

- Smythies J. (Editor) *Schizophrenia. A disorder of synaptic plasticity*. Special volume (59) in *The International Review of Neurobiology*, San Diego, Elsevier, 2004.

This discusses the role of disorders of synaptic plasticity in schizophrenia. It is available on Amazon where the following description of contents appears;

“Key Features

* Addresses new areas of research in neurotransmitters, receptors, vitamin transport, metabolism, and signaling. * Reviews the growing field of synaptic plasticity research * Provides links with other diseases of the Central Nervous System (CNS)

Description

Schizophrenia is a severe brain disorder that affects 1% of the population. Its cause is due to the interaction of a number of abnormal genes with environmental factors. This book summarizes new advances schizophrenia research that focus on the field of neural and synaptic plasticity. Synapses in the brain in schizophrenia show a wide range of disorders, both structural and functional. This volume covers the most active and promising of these new developments, and opens up new avenues for the treatment of schizophrenia.”

- Smythies J. *The Neuromodulators*. International Review of Neurobiology, San Diego, Elsevier, 2005.

I edited this multi-author volume on the non-peptidergic neuromodulators. It is available on Amazon where they say—

“Glutamate and GABA are the main information carrying neurotransmitters in the brain. Their action is modulated by a further series of small molecules called neuromodulators. The major neuromodulators in the brain are acetylcholine (both muscarinic and nicotinic), dopamine, norepinephrine, epinephrine and serotonin. These have an enormous range of functions in a wide variety of brain mechanisms. This book attempts to give a general overview of this field with a section devoted to each of these. Each section starts with anatomy, both structural and functional. The various types of receptors for these agents are described and then the effects of stimulating these receptors. These receptors trigger a variety of electrical reactions that

generally involve potassium, sodium or calcium channels. Also reviewed are other receptors that trigger a wide variety of post-synaptic signaling cascades that influence a large number of neuronal functions including receptor sensitivity, synaptic plasticity and gene manipulation. Finally the relevance of these systems to disease states is detailed. There are many reviews of individual neuromodulators but this is the only book where one author attempts to cover the whole field.

Contents.

Section I. The Cholinergic System Part I â Introduction Part II - The Muscarinic System Part III - The Nicotinic System Section II. The Dopamine System Section III. The Norepinephrine System Section IV. The Adrenaline System Section V. The Serotonin System Section VI. Conclusion.”

- Smythies J. & Smythies V. *Two Coins in the Fountain*. (joint autobiography). Amazon.com (Booksurge) 2006.

Put in a light relief! It contains a lot of background material to a career spent in neuroscience. Available on Amazon where one reviewer comments;

“I heartily recommend this book to anyone wishing to have a few hours of relaxed, entertaining reading. It is not one of those celebrity autobiographies filled with self-serving half-truths. Instead the life story of the authors is presented in such a truthful, unpretentious style that the reader is left with a warm empathy for their all too human successes and failures. As one interested in science, I especially enjoyed John Smythies' account of his long research career in neuroscience. I only wish there could be more books of this genre.”

- Smythies J. *The Trial of God*. (satirical play) Amazon.com (Booksurge) 2006.

This may be of general interest to the reader. It is available on Amazon where they say

“This play examines the responsibility for an allegedly benevolent God for creating a world full of suffering and evil. The Counsel for the Prosecution is Voltaire. The Counsel for the Defence is the Archangel Michael. A number of celebrated witnesses are called to testify before the court.”

- Smythies J, Edelstein L, Ramachandran V. (Editors) *The Claustrum. Structural, Functional and Clinical Neuroscience*. London, Elsevier, 2014.

This is the first textbook devoted to the claustrum. It is available on Amazon with the description:

“The present day is witnessing an explosion of our understanding of how the brain works at all levels, in which complexity is piled on complexity, and mechanisms of astonishing elegance are being continually discovered. This process is most developed in the major areas of the brain, such as the cortex, thalamus, and striatum. *The Claustrum* instead focuses on a small, remote, and, until recently, relatively unknown area of the brain. In recent years, researchers have come to believe that the claustrum is concerned with consciousness, a bold hypothesis supported by the claustrum's two-way connections with nearly every other region of the brain and its seeming involvement with multisensory integrations-the hallmark of consciousness. The claustrum, previously in a humble position at the back of the stage, might in fact be the conductor of the brain's orchestra.

The Claustrum brings together leading experts on the claustrum from the varied disciplines of neuroscience, providing a state-of-the-art presentation of what is currently known about the claustrum, promising lines of current research (including epigenetics), and projections of new lines of investigation on the horizon.

- Develops a unifying hypothesis about the claustrum's role in consciousness, as well as the integration of sensory information and other higher brain functions.
- Discusses the involvement of the claustrum with autism, schizophrenia, epilepsy, Alzheimer's disease, and Parkinson's disease

Coverage of all aspects of the claustrum, from its evolution and development to promising new lines of research, including epigenetics, provides a platform and point of reference for future investigative efforts.”

- Edelstein L, Smythies J, Noble D. (2014) Co-editors. Theme Issue “Epigenetic information-processing mechanisms in the brain.” Phil.Trans.R.Soc.B. 369, 1652.

plus a chapter therein:

Edelstein L and Smythies J. (2014) “The role of the epigenetic codes in neurocomputation: dynamic hardware in the brain”.

This is the first book (Royal Society Theme Issue) devoted to the exploding new topic of epigenetic mechanisms involved to information processing in the brain. The contents are available on the web at

<http://rstb.royalsocietypublishing.org/content/369/1652.toc>

- Further material on my current research see my website at

www.johnsmythies.com

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