

Hyperbaric Oxygen

Clinical Application of Hyperbaric Oxygen: Proceedings of the First International Congress, Amsterdam, September 1963. Edited by I. Boerema, W. H. Brummelkamp, and N. G. Meijne. 427 pp, with illus. \$20. American Elsevier Publishing Co., 52 Vanderbilt Ave, New York 17, 1964

This decade is witnessing a revived interest in the clinical application of the breathing of oxygen and various gas mixtures at increased pressure, an interest rekindled by developments in fields which appear, at least superficially, to be unrelated. SCUBA diving (self-contained underwater breathing apparatus); use of caissons with compressed air, for working under water; pressurized cabins for high-altitude airplanes; the problems of rapid decompression encountered in escaping from submarines, all bear on this modality of treatment. The spark setting off the current boom came from Amsterdam, where, in 1956, the surgeon Boerema used a technique of drenching patients, in a pressurized tank, with oxygen at three atmospheres of pressure, prior to interrupting the circulation for cardiac and vascular surgery. He and Brummelkamp applied the same technique to cases of gas gangrene in 1960 with startling success.

The present book represents a compilation of the talks given at the First International Congress on Hyperbaric Oxygenation, which took place in Amsterdam a little more than one year ago. The papers concern early probings into the potential usefulness of hyperbaric oxygenation in the fields of infectious disease, cardiovascular disease, shock, pulmonary emphysema, neoplastic disease, and asphyxia. Many of the studies deal with problems of safety, engineering, and use of anesthesia within the chambers.

A fascinating paper by Kylstra presents his achievement of having animals breathe physiologic saline solution saturated with oxygen at 8 atm pressure, thus making the lungs act as gills. Jacobson and co-workers present a masterful review of the checkered career of hyperbaric therapy in Europe and America. This goes back as far as the 17th century.

Striking, however, is the paucity of papers in this collection dealing with the basic biochemistry, biophysics, and organ physiology of hyperbaric oxygenation. And as we read these papers we wonder if once again, in the haste to make

empiric application of admittedly costly equipment, the failure to accumulate basic data will bring about premature senescence or stunted development of what may ultimately be a highly useful therapeutic adjunct, fully as important as the antibiotics or hypothermia which Boerema also helped to pioneer. In this vein the closing remarks in the paper by Jacobson seem apropos: "The object lesson of the history of hyperbaric therapy for the last several hundred years is clear-cut. If this form of therapy is to achieve a worthwhile and lasting place in the medical armamentarium it can only do so on a firm basis of accurate physiological data on the effects of both pressure and oxygen obtained in experiments, as well controlled as clinical medicine will permit."

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Psychiatry

Positive Disintegration. By Kazimierz Dabrowski. Edited with an introduction by Jason Aronson. 132 pp. \$5.50. Little, Brown & Co., 34 Beacon St, Boston 6, 1964

An important part of this little volume is its introduction, which affords a good interpretative review of the book and without which workers in the field of mental health might experience difficulty in understanding some of Dr. Dabrowski's theoretical formulations. The essential assumption of his theory is that disintegrative (roughly non-adaptive) symptoms are indices of processes which are necessary for healthy personality development—in fact, that breakdown is essential for buildup.

In discussing this theory, the author touches on an age-old problem, that of gauging the proper dosage of adversity in ego development, but then he sidesteps the issue by allowing instinctual processes to take over. Dr. Dabrowski states that, "The developmental instinct by destroying the existing structure of personality allows the possibility of reconstruction at a higher level," and, "disintegration is a generally positive developmental process."

The theory rests largely on assumptions with very little empirical evidence except for such well-known facts as, "severe environmental stress often may . . . contribute to creativity and growth. . . ." The book does not adequately deal with the problem "because of" vs "in spite of."

The theory has many interesting ramifications, but as Dr. Aronson sums things up: ". . . if the theory of positive disintegration is to develop . . . [then] progressive clarification of its terms, of the breadth of its explanatory power, and of its practical implications must be achieved."

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History of Science

History of Science: The Beginnings of Modern Science from 1450 to 1800. Edited and with a preface by René Taton. Translated by A. J. Pomerans. 667 pp, 91 illus. \$17.50. Basic Books, 404 Park Ave S, New York 16, 1964

When the first volume of this series appeared, it aroused general critical enthusiasm in which the present reviewer was not able to share (*JAMA* 188:191 [April 13] 1964). Essentially the same reaction will greet this second volume, which discusses the beginnings of modern science, from 1450 to 1800.

This era covers such vast changes that only a great master of exposition can make them meaningful and interesting within the compass of a single volume. In the present work, with its multiple authorship, the contributors are all thorough scholars, many of them of great renown. But there simply are too many authors, with too many points of view, too many modes of exposition, too great variation in writing skill, to make a truly helpful volume. The disciplines discussed, including mathematics, astronomy, geology, chemistry, biology, and medicine, with their ramifications, are too vast. Many of the chapters, particularly those dealing with medicine, are too full of names and dates, and lack really adequate exposition of ideas.

The audience is not sufficiently clearly defined. For specialists the book is not adequate. To earnest students in the history of science it will convey a lot of information, but for the general reader (the "intelligent layman"), the level of exposition is too complicated and terse. For the nonprofessional reader nothing can take the place of a book with a single author, a single point of view, and a single level of exposition. What such a book might lack in authority, it could gain in readability and effectiveness.

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