esis, which, in oversimplified form, states that as the individual develops he moves from a global way of experiencing to more analytical approaches. Indicators of differentiation include a tendency for the world to be experienced as analyzed and structured, an articulated body concept and sense of separate identity reflecting a differentiated self, and specialized structured defenses and controls. Field dependence is seen as the perpetual component of the more general cognitive dimension, which is best described as analytical versus global approach, or as the ability to overcome an embedded context.

Most of the book is devoted to a painstaking review of recent investigations dealing with correlates of perceptual tests central to Witkin's work, such as the Rod and Frame Test, the Body Adjustment Test, and the Embedded Figures Test. Skillfully woven into the survey is a series of studies by Witkin and his associates, dealing with three major problems growing out of the general hypothesis: (i) the degree of individual self-consistency in psychological differentiation across a wide variety of perceptual, cognitive and personality variables; (ii) the extent to which early life experiences determine later differentiation; and (iii) the stability of individual patterns of functioning during development and in adulthood.

Several hundred subjects, ranging in age from six to seventeen years, were given the basic perceptual battery, some of them repeatedly over a number of years. The methods of personality assessment ranged from the Rorschach and Draw-A-Person techniques to detailed interviews and family case studies. Striking relationships were found consistently between the perceptual index of field dependency and clinical ratings of differentiation based upon the personality data. Most impressive of all, when one considers the nature of the task, is the high relationship between the perceptual index and ratings of differentiation, based on early childhood experiences and parental attitudes obtained from interviews with the mothers—correlations of .82, .85, and .65 for three groups of boys. The highest relationships were always between clinical ratings and the perceptual index; this suggests the possibility that other subjective factors or unknown variables may influence the outcome.

Although these results will hardly stand unchallenged because of their controversial nature, they cannot be lightly dismissed. Witkin has taken unusual precautions to safeguard against contamination across different techniques of assessment and to check the reliability of his measures. His studies cover a wide age range, include both sexes, and employ multivariate methods to pin down the factorial meaning of concepts. Initial findings have been cross-validated on independent samples to check their stability, and the relevant literature has been painstakingly reviewed to demonstrate the general nature of the phenomena under study. The net result should be a highly significant impact upon current theory and research dealing with the developmental aspects of perception and personality.

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International Summer Course

Fundamental Problems in Statistical Mechanics. Proceedings of the 1961 summer course. Compiled by E. G. D. Cohen. North-Holland, Amsterdam; Interscience (Wiley), New York, 1962. xxi + 249 pp. Illus. $7.50.

This excellent volume provides an account of the lectures given during the NUFFIC (Netherlands Universities Foundation for International Cooperation) Summer Course in Science, which was held at Nijenrode Castle during the summer of 1961. All of the regular lectures, with the exception of G. E. Uhlenbeck's lectures on the theory of condensation are included, as is E. W. Montroll's seminar talk on the integral equations of statistical mechanics.

Most of the lecturers prepared their own notes for publication, but in some cases the published material was put together from notes taken by participants. Cohen, who compiled the volume, asks the reader's indulgence, because English is not the native language of any of the contributors except Montroll. No indulgence is necessary.

Throughout the lectures one finds strong emphasis on the relationship between the fundamental, exact, microscopic, reversible laws and the approximate, macroscopic, irreversible laws. The additional assumptions required to go from the former to the latter are discussed. In the words of N. G. Van Kampen, ". . . there cannot be a rigorous mathematical derivation of the macroscopic equations from the microscopic ones. Some additional information or assumption is indispensable. One cannot escape from this fact by any amount of mathematical funambulism. My policy will be to make these additional assumptions explicit rather than to disguise them."

Although each lecturer's contribution is self-contained, the general introduction, by B. R. A. Nijboer, is quite worthwhile, and it sets the tone for the lectures that follow. The topics covered and the lecturers are fluctuations, stochastic processes, and Brownian motion (H. Wergeland); liquid helium (K. Huang); many particle aspects of the Fermi gas (N. M. Hugenholtz); the Boltzmann equation and its generalization to higher densities (E. G. D. Cohen); master equation and approach to equilibrium for quantum systems (L. Van Hove); fundamental problems in statistical mechanics of irreversible processes (N. G. Van Kampen); statistical considerations on the basis of nonequilibrium thermodynamics (P. Mazur); and some remarks on the integral equations of statistical mechanics (Elliott W. Montroll).

The printing is quite readable in this inexpensive volume. The few misprints and omissions are not serious. There is no general index, but the table of contents is quite detailed. I recommend this work to students and experts alike.

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Disorganized and Abbreviated

Introduction to Electron Microscopy. Saul Wischnitzer. Pergamon, New York, 1962. 143 pp. Illus. $6.50.

This little book is intended to bridge the gap between elementary books prepared for laymen and the more complex treatises written for students and professionals who have a firm background in mathematics and physics. It is concerned with the theoretical and practical aspects of the electron microscope and with its design. Although

numerous diagrams appear in the text, there are but five electron micrographs—one of carbon particles and four of a small hole, which illustrate lens astigmatism.

The chapter headings appear as follows: "I. Introduction, II. Historical review, III. Basic theory of electron microscopy, IV. The electron microscope, Literature cited, Appendices A through J, References, Author index, and Subject index." This is a most unusual, almost bizarre, arrangement.

The numerous appendices are used as a catch-all for odds-and-ends and for somewhat more detailed accounts of points raised in the other chapters. The references and literature cited are comprehensive, useful, and primarily of the review type.

The content of the book is, for the most part, sound, although the treatment is disorganized and the style abbreviated. This impression is reinforced by the location of the appendices, whose contents would, perhaps, be better placed within the appropriate chapters. In addition, some of the material is comprehensible only to those with an intimate knowledge of the operation of the electron microscope, while other parts of the discussion are (hopefully) directed toward the complete novice. This continual change in approach adds to the unevenness caused by the style.

Because the book is neither a practical handbook nor a reference text, its exact purpose is not altogether clear to me; it is, in part, too complex for laymen but too brief and simplified for serious microscopists. However, the *beginning* student of electron microscopy will find it useful, for, despite its lack of organization, the material which it presents is accurate and adequately selected.

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Notes

Ornithology

Birds of the Caribbean (Viking, New York, 1962. 255 pp. $15) is another of the attractive, full-sized (8¼ by 11¼ inches), recent books on birds, which appeal to the eyes and pocketbooks of bird lovers. The book, which the publisher calls a "studio book," makes easy reading, even for untrained bird watchers, and the photographs, in natural color, add much appeal. The author, Robert Porter Allen, formerly research director of the National Audubon Society, has had considerable experience with the birds of the Caribbean area, and he writes with ease and conviction or quotes from the writings of others in a pleasant style.

The first section of the book (pp. 1–17) is of a general nature; the second (pp. 17–206) is devoted to life histories of the species treated; the third (pp. 206–242), an "Identification guide," gives the names, description, and range of each species. The fourth section is an alphabetical list of the photographers that shows the plates for which each photographer is responsible. Incidentally, if the reader is interested in knowing where, or by whom, any of the pictures were taken, he may have to read this section from end to end to obtain the answer, for no explanation accompanies the color plates nor is there any other index to them, a rather unfortunate arrangement.

The considerable variation in the amount of photographic enlargement results in blocks of white paper which detract from the pictures. Some of the finest, which fortunately are enlarged to full-page size, are 30 beautiful photographs by Paul Schwartz. These are very effective. The blue-gray tanager on the dust jacket is one good example.

The arrangement of the plates and of the corresponding text follows that of the American Ornithologists' Union's *Check-list of North American Birds*, beginning with the white-tailed tropic bird and ending with the rufous-collared sparrow. The 98 species illustrated and discussed are well chosen among the several hundred that might have been selected from the birds of the West Indies, Central America, and northern South America, the region which, according to the attractive map on the end papers, can be called the "Caribbean and its Environs."

The book, which will certainly appeal to travelers in the area, was conceived by William C. White, former president of the Alcoa Steamship Company, as a companion for the popular *Flowering Trees of the Caribbean* and was completed despite the greatly reduced passenger revenue in the Caribbean area.

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New Books

General

The ABC's of Astronomy. An illustrated dictionary. Roy A. Gallant. Doubleday, Garden City, N.Y., 1962. 121 pp. Illus. $3.95.

The Art of Benin. Philip J. C. Dark. Chicago Natural History Museum, Chicago, 1962. 77 pp. Illus. Plates. Paper, $2.

Biology for the Modern World. C. H. Waddington. Barnes and Noble, New York, 1962. 131 pp. Illus. $2.

Chemistry for the Modern World. George Porter. Barnes and Noble, New York, 1962. 127 pp. Illus. $2.

Educators Guide to Free Guidance Materials. Mary Horkheimer Saterstrom and Joe A. Steph, Eds. Educators Progress Service, Randolph, Wis., 1962. 268 pp. Paper, $6.50.

The Excitement of Science. John Rader Platt. Houghton Mifflin, Boston, 1962, 182 pp. Paper, $1.50.

The Heritage of Kitty Hawk. Walter T. Bonney. Norton, New York, 1962. 211 pp. Illus. $5.

Ibamba. Wynant Davis Hubbard. New York Graphic Society, Greenwich, Conn., 1962. 346 pp. $6.95.

Man's Discovery of His Past. Literary landmarks in archeology. Robert F. Heizer, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1962. 189 pp. Illus. Paper, $1.95; cloth, $4.50.

Philosophical Issues in Adult Education. Horace M. Kallen. Thomas, Springfield, Ill., 1962. 112 pp. $4.75.

The Public Order of the Oceans. A contemporary international law of the sea. Myres S. McDougal and William T. Burke. Yale Univ. Press, New Haven, Conn., 1962. 1251 pp. $15.

Reason and Chance in Scientific Discovery. R. Taton. Translated by A. J. Pomerans. Science Editions, New York, 1962 (reprint). 171 pp. Illus. Paper, $1.65.

Science and Religion. An interpretation of two communities, Harold K. Schilling. Scribner, New York, 1962. 286 pp. $4.50.

Southeast Asian History. A bibliographic guide. Stephen N. Hay and Margaret H. Case. Praeger, New York, 1962. 150 pp.

Structural Patterns and Proportions in Vergil's Aeneid. A study in mathematical composition. George E. Duckworth. Univ. of Michigan Press, Ann Arbor, 1962. 277 pp. Illus. $7.50.

Studies of War. Nuclear and conventional. P. M. S. Blackett. Hill and Wang, New York, 1962. 250 pp. Illus. $3.95.

The Supreme Court. Palladium of freedom. Alpheus Thomas Mason. Univ. of Michigan Press, Ann Arbor, 1962. 207 pp. $4.95.

The Wealth of India. vol. 6 (L–M), *Raw Materials.* A dictionary of Indian raw materials and industrial products. Council of Scientific and Industrial Research, New Delhi, 1962. 528 pp. Illus.

Weather Forecasting as a Hobby. Robert Wells. Hammond, Maplewood, N.J., 1962. 47 pp. Illus. $1.

The World of Leonardo da Vinci. Man of science, engineer, and dreamer of flight. Ivor B. Hart. Viking Press, New York, 1962. 374 pp. Illus. $7.95.