fish for fish fanciers, baby chicks and chickens, frozen fresh fish, which require periodical icing and much attention, have continued to benefit from reduced, and even second-class, rates.

Business is seriously hurt by these unwarranted charges, since we often have to use Railway Express to get live materials from collecting stations on the long Florida Peninsula to the laboratory for processing, with the result that we incur the same high transportation charges twice. Commonly, the transportation costs are considerably in excess of the invoice value of the materials.

Our experiences with air freight were uneconomical and disastrous. In this service delivery dates could not be planned, because most of the flights are unscheduled and are completely suspended on Saturdays and Sundays, thus reducing the work week in collecting and in the laboratory to three days. Besides, a total air freight embargo on any live materials has eliminated Eastern Airlines, which operates the only route directly north, with connecting flights to the west. As a consequence air freight shipments are transported over a grand detour—e.g., from Tampa to Jacksonville to New York, to reach Chicago, and from Chicago by Railway Express to Champaign, Ill. The charges for this service are, of course, on a mileage basis. One shipment that we entrusted to the "fast service" by air freight took *7 days* to make this distance, and the animals arrived dead of dehydration and malnutrition. We replaced them by private plane and delivered the animals in Chicago within *6 hours*. Larger animals requiring feeding and watering have been shipped exclusively by Railway Express after this experience.

This account of transportation problems in the supply of live materials shows that immediate relief is a necessity.

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Book Reviews

Medicinal Chemistry: Chemistry, Biochemistry, Therapeutic and Pharmacological Action of Natural and Synthetic Drugs, Vol. II. Alfred Burger. New York–London: Interscience, 1951. 506 pp. $10.00.

The first volume of this two-volume text was reviewed in a previous issue (SCIENCE, **114**, 559 [1951]). In this second volume Burger has maintained the same admirable style and organization. Although there is an excellent chapter on the hormones, the book is chiefly concerned with the chemotherapy of diseases caused by pathogens. A chapter of especial merit is the one dealing with the theories of metabolite antagonism.

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The Barker Index of Crystals, Vol. I: ***Crystals of the Tetragonal, Hexagonal, Trigonal and Orthorhombic Systems,*** Part 1: Introduction and Tables; Part 2: Crystal Descriptions. M. W. Porter and R. C. Spiller. Cambridge, Eng.: Heffer, 1952. Part 1, 250 pp., 30s; Part 2, 1027 pp., £4 10s; £6 for both.

The first 120 pages of Part 1 of this giant reference book deal primarily with an introduction to the Barker Index. They give a highly condensed summary of elementary crystallography and of the important types of crystallographic projections—all from the standpoint of an amateur worker in such fields. This is followed by a short description of the Barker protractor and a short discussion of its five scales. This leads to a discussion of the multiple tangent table, followed by a worked-out "identification of an unknown crystal." Detailed consideration is given to symmetry determination, projection, setting and orientation, and the calculation of the classification angles, for the crystal systems: cubic, orthorhombic, tetragonal, hexagonal, and trigonal.

The Barker Index deals with data obtained from single crystals, not with data obtained from powdered crystals, as is the case with the "ASTM, Hanawalt," method of chemical identification. The Barker Index, therefore, requires a pretty accurate knowledge of the orientation of the single crystal with respect to some base line taken from the x-ray diffraction equipment. This has required the assembly, mainly from existing literature, of large quantities of "single crystal" data. These data have been arranged in three tables, as follows: Classification angles for tetragonal, hexagonal, and orthorhombic crystals. Other data, useful in confirming conclusions reached by other methods are tabulated as follows: (1) refractive indices for tetragonal, hexagonal, trigonal, and orthorhombic crystals; (2) densities of tetragonal, hexagonal, trigonal, and orthorhombic crystals; (3) melting points of tetragonal, hexagonal, trigonal, and orthorhombic crystals.

The last half of Part 1 includes two additional tabulations—an alphabetical list of English chemical and mineralogical names, and an alphabetical list of German chemical names as used by Groth. None of the tabulations of classifications angles is made with reference to page numbers. Instead they are tabulated with reference to known quantities, such as Cr, Am, and Bq, which appear systematically in crystallographic calculations.

Part 2 is concerned entirely with crystal descriptions of 2991 compounds, making a volume 7 × 10 × 2½ in. The various crystal systems are separated by a single colored sheet. This part contains data from compounds described in the five volumes of Groth's *Chemische Krystallographie,* together with material from a few other sources, especially Donnay and Mellon's crystallochemical tables. The first 2½ pages are devoted to the scheme of description of different types of crystals, whereby a large amount of data can be compressed into a space only slightly larger than an ordinary library card. Space is also provided for auxiliary data under the headings of "forms," "habits," "physics," "optics," and "transformation." "X-ray ASTM" gives the spacings of the three strongest lines found in powder photographs.

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The Zoology of Tapeworms. Robert A. Wardle and James Archie McLeod. Minneapolis: Univ. Minnesota Press, 1952. (For the University of Manitoba.) 780 pp. and 419 illus. $12.50.

For the first time the extensive literature on cestodes, which has heretofore been published in several languages in numerous books and periodicals, is now available in English in one volume. The book is divided into two parts. Part I has the following chapter headings: "General Features," "Life Cycle," "Biology," "Origin and Evolution," "History," and "Classification." Under these topics the authors acquaint the reader with the general morphology and terminology of cestodes. Their possible origin and evolution from Turbellaria, their development, chemistry, physiology, immunology, and recent attempts in culturing cestodes are discussed. Part II comprises the larger portion of the volume and includes detailed descriptions of all known species, genera, families, and orders of Cestoda, together with keys for their identification. An extensive bibliography is compiled through the year 1950, with some 2310 references that are invaluable to the investigator with meager library facilities.

We do not agree with some of the opinions and interpretations voiced by the authors throughout the text. Only two of these items will be mentioned here because of lack of space. First, that the Tetraphyllidea are more primitive than the Pseudophyllidea is only a matter of opinion; there is just as good evidence that the reverse is true. Second, that there are 17 orders of cestodes is a matter of interpretation of the facts at hand. Few helminthologists will agree on a classification of cestodes. We consider it reactionary to base ordinal characters on that highly variable organ, the scolex. A case in point is that of the order Trypanorhyncha. It was erected by European workers to include cestodes with a scolex possessing bothria and proboscides, at a time when the life cycle was unknown. The authors recognize that it is a highly controversial order and that its only known life cycle is pseudophyllidean in character, yet fail to merge it with the Pseudophyllidea. They do retain in this last-named order a similar worm, *Haplobothrium globuliforme,* which, according to most American parasitologists, is properly placed.

This is a provocative book which should awaken students to the vast array of cestode problems yet unsolved. It should prove useful to zoologists, physiologists, and parasitologists, as well as to physicians and veterinarians.

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Scientific Book Register

A Guide to the History of Science. A first guide for the study of the history of science, with introductory essays on science and tradition. George Sarton. Waltham, Mass.: Chronica Botanica; New York: Stechert-Hafner, 1952. 316 pp. $7.50.

Statistical Theory with Engineering Applications. A. Hald; trans. by G. Seidelin. New York: Wiley; London: Chapman & Hall, 1952. 783 pp. $9.00.

Statistical Tables and Formulas. A. Hald. New York: Wiley; London: Chapman & Hall, 1952. 97 pp. $2.50.

Theory of Superconductivity. M. von Laue; trans. by Lothar Meyer and William Band. New York: Academic Press, 1952. 140 pp. $4.00.

The Apologie and Treatise of Ambroise Paré. Containing the Voyages Made into Divers Places with Many of His Writings upon Surgery. Geoffrey Keynes, Ed. Chicago: Univ. Chicago Press, 1952. 227 pp. $3.50.

Advances in Catalysis and Related Subjects, Vol. IV. W. G. Frankenburg, V. I. Komarewsky, and E. K. Rideal, Eds. New York: Academic Press, 1952. 457 pp. $9.50.

A World Dictionary of Breeds, Types and Varieties of Livestock. I. L. Mason. Farnham Royal, Bucks, Eng.: Commonwealth Agricultural Bureaux, 1951. 272 pp. 30s.

Flora of Guatemala, Part III. Paul C. Standley and Julian A. Steyermark. Chicago: Chicago Natural History Museum, 1952. 432 pp. $4.50.

Bacteria. Stanley Thomas and Thomas H. Grainger. Philadelphia–Toronto: Blakiston, 1952. 623 pp. $5.50.

The Sources and Nature of the Statistics of the United Kingdom, Vol. I. Maurice G. Kendall, Ed. London–Edinburgh: Oliver and Boyd, 1952. (Published for The Royal Statistical Society.) 352 pp. 21s.

Advances in Medicine and Surgery from the Graduate School of Medicine of the University of Pennsylvania. Philadelphia–London: Saunders, 1952. 441 pp. $8.00.

The Living Body: A Text in Human Physiology. 3rd ed. Charles Herbert Best and Norman Burke Taylor. New York: Holt, 1952. 792 pp. $5.50.

Analytical Mechanics for Engineers. 4th ed. Fred B. Seely and Newton E. Ensign. New York: Wiley; London: Chapman & Hall, 1952. 443 pp. $5.50.

Probit Analysis: A Statistical Treatment of the Sigmoid Response Curve. 2nd ed. D. J. Finney. New York–London: Cambridge Univ. Press, 1952. $7.00.

Primer of Electronics and Radiant Energy. 2nd ed. Don Caverly. New York–London: McGraw-Hill, 1952. 343 pp. $5.50.