

a synonym of *Rotularia*] under the gastropod family Vermetidae and labeling the figure as an aberrant turritellid.

Names for taxa of family group level and higher are given in a French vernacular form; this would be a serious disadvantage if the book were to be used in America as a primary text. However, as a supplementary reference work, it seems worthy of commendation.

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Arctic Bibliography. vols. 6 and 7. Prepared for and in cooperation with the Department of Defense, under the direction of the Arctic Institute of North America. Marie Tremaine, Ed. Department of Defense, Washington, D.C., 1957 (order from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.). xiii+1208 pp.; xiii+1071 pp. Maps. \$4.50; \$4.25.

With the publication of the seventh volume (fourth supplement), this excellent, specialized, annotated bibliography now covers 43,464 entries on arctic subjects. The literature is reported up to 1955. The general task of the project was fully explained by the chairman of the directing committee, Henry B. Collins, Jr., some years ago in *Science* [119, 3A (26 March 1954)] after the publication of the basic bibliography [volumes 1-3 (1953) (4478 pages)] containing entries 1 to 20,003 and the subject index.

Some words may be said about volumes 4 and 5, announced by Collins but not reviewed in *Science*. These two volumes cover the literature issued in the years 1950 to 1953, inclusive, and contain the entries Nos. 20,004 to 33,125. They form the first two supplements to the basic bibliography and include also publications issued earlier than 1950 but for various reasons not listed in the three first volumes.

Volume 6, published in 1956, reports the literature on arctic subjects published in 1954, and includes, also, earlier studies dating back to before the 19th century which were omitted previously. It covers entries 33,126 to 38,410. Volume 7, issued in 1957, includes the arctic publications for the year 1955 (entries 38,411 to 43,464) and also reports earlier literature not included in the previous volumes.

The whole bibliography is an extremely impressive example of fine and conscientious teamwork, performed under the direction of Marie Tremaine. She and the members of her staff are to be heartily congratulated.

The four supplements as well as the

three volumes of the basic bibliography enumerate the publications in alphabetical order, by author, including the first and second names of the authors and dates of birth and death. Where a publication has more than one author, careful cross references are given to the name of the first author, the title (abbreviated), and the running entry number. Though the different subjects are mixed, the extended and complete indexes enable the user to find every subject very easily. Titles of publications are given in the original language (languages using letters other than roman have been transliterated) and in English translation. In spite of the innumerable titles in foreign languages that are included, there are practically no mistakes in spelling. In this respect the *Arctic Bibliography* can be cited as a model for similar undertakings. German users will especially appreciate the fact that the nouns in German titles are not "decapitalized," as they often are in such publications. It is really astonishing to find that even words which had to be broken are divided according to the rules of the language in question. References to periodicals and (for separate publications) to editors are given in an extremely clear manner; included are the full title of the periodical, the number of volume and part, the number of pages, plates, figures, and maps, the year (for journals), and the editor's name and the place and date of publication (for separate publications). Misleading abbreviations have been avoided; this facilitates finding the original publication, especially since at least one library in the United States where the publication has been seen by the analyst is mentioned for each report. (These libraries are listed at the beginning of every volume.) The annotations are very extensive and give, generally, a good idea of the subjects treated in the publications.

This bibliography is still incomplete, doubtless because of the great task involved in reporting the literature for such a large geographical area, but each new volume serves to bring it nearer completion. Volume 5 contains a table showing the names and the subjects treated by the members of the staff of the Arctic Bibliography project; in the previous volumes these were mentioned only in the introduction. Starting with volume 6, the index gives the titles only in English, whereas the indexes of the previous volumes gave them in the original language. This change is a contribution to clarity and facilitates use of the index. In the two recent volumes, 6 and 7, the reports are still more extensive than in the previous volumes, and therefore even more useful.

In future volumes perhaps an effort might be made to complete the author citations with respect to first and second

names and to dates of birth and death; these have been left out in many cases in the published volumes. Finally, one might be interested to know the name of the reporter of a publication; he might be cited, by his initials, at the end of the report.

Without any exaggeration, the *Arctic Bibliography* may be called a milestone in its field and may be taken as an excellent example for all similar undertakings. Especially for scientists it is an indispensable reference work, due to its broad basis, and not only for those who are students of the arctic regions. It would be extremely useful if similar projects could be undertaken for other areas, for the antarctic and the tropics in particular.

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Semiconductors and Phosphors. Proceedings of the International Colloquium, 1956. M. Schön and H. Welker, Eds. Interscience, New York; Vieweg and Sohn, Braunschweig, Germany, 1958. viii+864 pp. Illus. \$16.50.

This proceedings volume of the international colloquium held at Garmisch-Partenkirchen in 1956 presents the complete text of the 100 papers contributed by American, Dutch, English, French, German, and Russian researchers. The papers cover a wide field, from general properties of semiconductors and phosphors to specific problems, such as thermoelectric phenomena, incorporation of foreign atoms in phosphors, trapping mechanisms, hole motion, magnetic properties, and energy-transfer problems.

The articles, written either in English, French, or German, offer interesting and stimulating reading and will be highly welcomed by researchers and all other scientists interested in this rapidly expanding field.

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The Green Flash and Other Low Sun Phenomena. D. J. K. O'Connell. (Vatican Observatory publication.) North Holland, Amsterdam; Interscience, New York, 1958. 192 pp. Illus. \$6.

The green flash, or the green ray as it is sometimes called, is a phenomenon resulting from atmospheric refraction. The last bit of the setting sun or the first tiny segment of the rising sun may be a vivid green or at times a bright blue. In presenting an accurate and detailed account

of this interesting phenomenon, O'Connell, director of the Vatican Observatory, has provided an excellent book which will be welcomed by scientists and laymen alike. The author lays to rest, gently and finally, the theory which has been supported by many psychologists, and even by some astronomers, that the phenomenon is purely physiological in origin. Excellent color photographs made at the Vatican Observatory, both at sunset and at sunrise, seem to settle the question beyond doubt.

The reproductions of photographs taken by C. Treusch—80 in color and about 140 in black and white—are especially to be recommended. Only a fraction of them are of the green flash, but all of them concern low sun phenomena, notched and banded suns, and so forth—effects of irregular atmospheric refraction near the horizon. The color photographs of the green flash are particularly impressive when one realizes that, on the average, the phenomenon is visible only a few times a month and then only for a second or so. I have seen the green flash many times in the last 20 years, and I have often tried to photograph it in color, but none of my color prints will match the best of Treusch's.

The green flash is not as well known as it should be. It is not to be found in the indices of the elementary astronomy texts on my library shelves, nor is it to be found under "green flash" or "green ray" in recent editions of the *Encyclopedia Britannica* or *Encyclopedia Americana*, although it is included in the *Great Soviet Encyclopedia*. Sea captains, retired after a half century or more of service, have told me that it was only after retirement that they had heard of the green flash and had observed it.

There is an excellent bibliography of 313 entries, in two sections—"Theory" and "Observations." Each of these sections is arranged alphabetically by author. The next generation will doubtless be better informed on the green flash than this one is.

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Dairy Cattle, Judging and Selection.

William W. Yapp. Wiley, New York; Chapman and Hall, London, 1959. x + 324 pp. Illus. \$5.95.

In this text on the physical characteristics of dairy cattle, the author portrays associations between type of cattle and milk production. Standards of excellence and common defects in dairy cattle are well portrayed by the illustrations.

A considerable portion of the text is devoted to the author's philosophy concerning the importance of type appraisal and the contributions it has made to the

development of the dairy production industry. The techniques of good judging are thoroughly discussed. Procedures for handling the show ring are set forth clearly.

This book will be of interest to the experienced dairyman, the student, and the newcomer to the field.

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New Books

Abelian Varieties. Serg Lang. Interscience, New York, 1959. 268 pp. \$7.25.

Animal Life. Lorus J. Milne and Margery Milne. Prentice-Hall, Englewood Cliffs, N.J., 1959. 382 pp. \$6.95.

Birth of an Island. Millicent E. Selsam. Harper, New York, 1959. 47 pp. \$2.50 (juvenile book).

The Cellular Slime Molds. John Tyler Bonner. Princeton Univ. Press, Princeton, N.J., 1959. 158 pp. \$4.

The College Influence on Student Character. An exploratory study in selected colleges and universities made for the Committee for the Study of Character Development in Education. Edward D. Eddy, Jr. American Council on Education, Washington, D.C., 1959. 197 pp. \$3.

Constitutional Diagrams of Uranium and Thorium Alloys. Frank A. Rough and Arthur A. Bauer. Addison-Wesley, Reading, Mass., 1959. 159 pp. \$5.

The Content and Style of Oral Literature. Clackamas Chinook myths and tales. Melville Jacobs. Univ. of Chicago Press, Chicago, 1959. 293 pp. \$5.

Curare and Curare-Like Agents. D. Bovet, F. Bovet-Nitti, G. B. Marini-Betolo, Eds. Elsevier, Amsterdam, Netherlands, 1959 (order from Van Nostrand, Princeton, N.J.). 489 pp. \$15.75.

Elements of Physical Metallurgy. Albert G. Guy. Addison-Wesley, Reading, Mass., 1959. 544 pp. \$9.50.

Family Worlds. A psychological approach to family life. Robert D. Hess and Gerald Handel. Univ. of Chicago Press, Chicago, 1959. 319 pp. \$5.

The Fearful Choice. A debate on nuclear policy conducted by Philip Toynbee. Wayne State Univ. Press, Detroit, Mich., 1959. 112 pp. \$2.50.

Function of the Human Body. Arthur C. Guyton. Saunders, Philadelphia, Pa., 1959. 595 pp. \$7.50.

The Guidance Function in Education. Percival W. Hutson. Appleton-Century-Crofts, New York, 1958. 697 pp. \$6.

Histochemical Technique. W. G. Bruce Casselman. Methuen, London; Wiley, New York, 1959. 205 pp. \$3.25.

A History of Western Morals. Crane Brinton. Harcourt, Brace, New York, 1959. 512 pp. \$7.50.

Immunity and Virus Infection. Symposium held at Vanderbilt University School of Medicine. Victor Najjar, Ed. Wiley, New York; Chapman & Hall, London, 1959. 270 pp. \$10.50.

An Introduction to Advanced Dynamics. S. W. McCuskey. Addison-Wesley, Reading, Mass., 1959. 271 pp. \$8.50.

Introduction to Nuclear Power Costs. Arnold Rochman. Simmons-Boardman, New York, 1959. 50 pp. \$2.95.

Japan, China, and the West. The economics of competitive coexistence. H. Michael Sapor. National Planning Assoc., Washington, D.C., 1959. 79 pp. \$2.

The Logic of Scientific Discovery. Karl R. Popper. Basic Books, New York, 1959. 480 pp. \$7.50.

Methods Based on the Wiener-Hopf Techniques for the Solution of Partial Differential Equations. B. Noble. Pergamon, New York, 1958. 256 pp. \$10.

Méthodes numériques interpolation—dérivées. J. Kuntzmann. Dunod, Paris, 1959. 269 pp. F. 3600.

Millions of Years Ago. Prehistoric life in North America. Edwin H. Colbert. Crowell, New York, 1959. 153 pp. \$2.75.

Mono- and Sesquiterpenoids. vol. II. P. de Mayo. Interscience, New York, 1959. 327 pp. \$7.50.

A New Design for Living. Ernest Holmes and Willis H. Kinnear. Prentice-Hall, Englewood Cliffs, N.J., 1959. 249 pp. \$3.95.

Obligatory and Facultative Insects in Rose Hips. Their recognition and bionomics. Biological Monogr. No. 26, W. V. Balduf. Univ. of Illinois Press, Urbana, 1959. 194 pp.

1001 Questions Answered about the New Science. David O. Woodbury. Dodd, Mead, New York, 1959. 371 pp. \$6.

The Onset of Stuttering. Research findings and implications. Wendell Johnson et al. Univ. of Minnesota Press, Minneapolis, 1959. 254 pp. \$5.

Orbit. A picture story of force and motion. Hy Ruchlis. Harper, New York, 1958. 147 pp. \$2.75.

Organic Peroxides in Radiobiology. R. Latarjet. Pergamon, New York, 1958. 153 pp. \$9.50.

Ozeane Salzlagertstätten. Grundzuge der Entstehung und Metamorphose ozeaner Salzlagertstätten sowie des Gebirgsverhaltens von Salzgesteinsmassen. Hermann Bochert. Gebrüder Borntraeger, Berlin, 1959. 245 pp. DM. 48.

The Plasma Proteins. Clinical significance. Paul G. Weil. Lippincott, Philadelphia, Pa., 1959. 144 pp. \$3.50.

Readings in General Psychology. Paul Halmos and Alan Iliffe, Eds. Philosophical Library, New York, 1959. 260 pp. \$6.

The Scientific Revolution, Challenge and Promise. Gerald W. Elbers and Paul Duncan, Eds. Published in cooperation with the President's Committee on Scientists and Engineers by Public Affairs Press, Washington, D.C., 1959. 288 pp. \$6.

Seeds and More Seeds. Millicent E. Selsam. Harper, New York, 1959. 62 pp. \$2.50 (juvenile book).

The Silent Language. Edward T. Hall. Doubleday, Garden City, N.Y., 1959. 240 pp. \$3.95.

Wasserbestimmung mit Karl-Fischer-Lösung. Ernst Eberius. Verlag Chemie, Weinheim, 1958. 179 pp. DM. 19.60.

What's Wrong with U.S. Foreign Policy. C. L. Sulzberger. Harcourt, Brace, New York, 1959. 255 pp. \$4.50.

The Yearbook of the Royal Society of London. 1959. Royal Society of London, London, 1959. 287 pp.