Book Reviews

Inheritance in Dogs: With Special Reference to Hunting Breeds. Ojvind Winge; Catherine Roberts, translator. Ithaca, N. Y.: Comstock, 1950. 153 pp. $3.50.

This is an excellent book for the professional geneticist, and for dog breeders with previous education in genetics or advanced biology, with many points of superiority over some of the books on dog breeding. The first 32 pages will be grasped by the lay dog breeder, but, from this reviewer's experience, beyond that he will find the genetics too complicated.

The name suggests a wider coverage of breeds than one finds in reading the book. Only the setter, pointer, cocker spaniel, wire-haired fox terrier, and dachshund breeds are considered, whereas the hunting breeds cover a vastly wider field.

The data were drawn chiefly from European sources, and it is obvious that the author has failed to review many of our American sources, just as we often neglect the European, principally because of language difficulties.

The book is illustrated with five excellent plates, depicting color phases of the various breeds discussed. The translation is outstanding, particularly in the fact that the European breed names have each been explained in parentheses so that we may know the characteristics of these breeds.

The author has designated the genes with letters, not all of which correspond to the letters used in America in describing similar traits, but for use in explanation they serve very well.

Every owner of the above-mentioned breeds would do well to own a copy of this book, and many dog breeders and geneticists will want it for their shelves.

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Principles of Nuclear Chemistry. Russell R. Williams, Jr. New York: Van Nostrand, 1950. 307 pp. $3.75.

This new book, written to meet the needs of a one-semester introductory lecture course on the chemical aspects of radioactivity for senior and graduate students at Notre Dame, is certain to be welcomed by instructors everywhere who wish to teach the elements of this subject. Compressed into some 300 pages the student will find an outline of pure and applied nuclear chemistry clearly and succinctly presented in nine well-organized chapters. The first five of these lay the necessary physical basis for an understanding of radioactivity. A set of numerical exercises serving both to illuminate the text and to encourage reading beyond its pages concludes each of these chapters. A carefully selected supplementary reading list is also appended to every chapter.

In view of the research interests of the author and his colleagues at Notre Dame, it is not surprising that the distinguishing features of the book are its authoritative chapters on the chemical consequences of nuclear reactions, and on the chemical effects of nuclear radiations. The material here discussed approaches the actual frontiers of the science, and the reader's interest cannot fail to quicken with the sense of the richness and variety of chemical phenomena arising from the effects of radioactivity. The last chapter of the book reviews the subject of applied nuclear chemistry, a topic so broad that it could be expanded into a treatise. Here again there has been an excellent selection from a large and rapidly increasing number of very diversified studies ranging through all the important branches of chemistry.

Unquestionably this book will be widely useful. Certain deficiencies of arrangement and presentation will be noted, therefore, that these may be considered in possible future revisions. The absence of a unified discussion, in the early portion of the text, on the interaction of nuclear radiations with matter is perhaps the most evident shortcoming of the book. A treatment of this subject logically precedes any consideration of devices for the detection of unstable nuclides, of absorption methods for decay energy estimation, or of the subject of radiation chemistry. Further, the closely allied topics "Devices for the Production of Unstable Nuclides" and "Nuclear Bombardment Reactions" seem unnaturally divided between Chapters III and V. The discussion of the artificial elements is likewise split. Possibly sufficient material will soon be available to make possible the inclusion of a complete chapter on the synthetic elements, thereby increasing the chemical flavor of the book. Mention of such topics as the chemical separation of nuclear isomers, coincidence counting techniques, high-energy spallation reactions, photographic plate techniques for nuclear reaction studies, and the betatron may not be inappropriate in an introductory text. Similarly, some brief description of health-physics instruments seems desirable, as would a table summarizing the present consensus as regards radiation dosage tolerances. Unfortunately the otherwise quite readable text is marred by numerous (though minor) typographical errors. The statements (p. 120) that "K^{40} emits both positrons and negative beta particles" and (p. 135) that RaE is "a beta-emitter of 22-year half-life" are of course obviously incorrect. A short appendix to the book contains, in addition to listing of the numerical values for the fundamental constants and mass-energy conversion factors, a periodic table of the elements and a very useful nuclide chart.

All things considered, however, the author is to be congratulated on the preparation of a highly teachable introduction upon which the instructor can enlarge