

that some of the clinical cases cited for illustration contain insufficient data to make them entirely convincing, loses some of its force perhaps, when it is recalled that the book is intended primarily for popular instruction, and to that end lapses naturally into the anecdotal style.

The author is delightful in his incorrigible optimism as to the hopefulness of treatment of insanity, crime and feeble-mindedness under more rational conditions of organization and classification, and by more scientific methods than have hitherto existed. The general treatment of insanity he considers under three periods corresponding to the three tenses. The past was the period of mechanical restraint. The present is the period of custodial care. The future will be the period, let us hope, of curative treatment. The present, with all its humanitarian ideals and active therapeutic efforts is still the period of custodial care. We must perhaps admit it.

But the author looks ahead to the time when the state hospitals shall no longer be in the main simply repositories for the mentally infirm. He suggests that these institutions should comprise five definitely organized departments: (1) research, (2) curative, (3) industrial, (4) custodial, (5) hospital. The research and curative departments he would have under one administration consisting of an alienist, a physiologist, a pathologist, and a psychologist, together with field-workers and such other assistants as might be required. The plan as outlined is admirable, and already partially operative in many institutions. But Dr. Smith's forecast culminates in an ultra-optimism. "Might not the per cent. of 'discharged as cured' from our asylums be raised from twenty-five or thirty-three per cent. to eighty or ninety per cent., if all the resources of science, art and humanity were brought into requisition immediately on admission of each person legally committed as insane?" In the author's discussion it might seem that the environmental factors, important as they are unquestionably, are stressed too much, or rather that the endogenic factors are insufficiently stressed.

Excellent is the author's insistence upon the value of the work-cure in mental disease, and of the work-habit as prophylaxis, maintained onward into old age. "Retirement from business at this period, to enjoy the fruits of a life of toil, is to turn one's face towards the cemetery to which he will hasten with ever quickening step."

The nonagenarian physician evidently practices his own gospel, for now at ninety-three comes from his pen a book full of valuable and interesting material and fruitful suggestion, reflecting the youthful spirit of hopefulness and progress, rather than the retrospective sadness of a less efficient old age.

C. B. FARRAR

Beekeeping. By E. F. PHILLIPS, Ph.D. Rural Science Series. New York, Macmillan & Co. Pp. xxii + 457. 190 figs. Price \$2.00.

We are living in an age of applied science; but the student of animal behavior is perhaps little concerned with the possible application of his branch of scientific inquiry. On this account the author's fundamental conception and mode of treatment are of particular interest. Beekeeping is applied animal behavior. As the author suggests, the well-informed beekeeper probably has a wider and more accurate knowledge concerning bees than have many students of animal behavior concerning the species with which they work. The successful beekeeper is, as we are told, the man "who has a knowledge of the activities of bees, whereby he can interpret what he sees in the hives from day to day, and who can mould the instincts of the bees to his convenience and profit." In this volume, therefore, the bee is treated as a living animal and special stress is laid upon its behavior and physiology in so far as investigations have thrown light upon these processes.

The United States Department of Agriculture is singularly fortunate in having as its chief expert in bee culture one so well fitted by the character of his training as Dr. Phillips, who has approached, from the standpoint indicated above, a subject which is perhaps more liable than most branches of agri-

cultural activity to be governed by individual preferences than by methods based on definite scientific principles. This is well illustrated in the case of the wintering of bees, which constitutes one of the most important questions for the practical beekeeper, particularly in the more northerly regions. As a result of the elaborate investigations which the author and his associates have conducted, the activities of the bees in the winter cluster and the factors affecting such activities have been brought out of the darkness, which heretofore, both literally and metaphorically, has hidden them from view, to the light of day so that they can now be described intelligently and the knowledge so acquired can be put to the greatest possible practical use. The fact that the temperature reactions of bees are so strong and so important from the practical standpoint demonstrates the value of the "behavior" point of view.

That a thorough knowledge of the behavior of the bee is essential is indicated by the fact that although bees have been kept by man from time immemorial they have not been domesticated; they have not, as Langstroth maintained, been tamed, but their natural instincts have remained unmodified. Consequently, the beekeeper must direct their instincts along the lines best adapted to his own ends. It is to the credit of American beekeepers that they have been so successful in this line of effort, for although it is undoubtedly true that, up to within recent years, the scientific knowledge of bees has been largely due to the work of European investigators, commercial beekeeping on a large scale is, as the author claims, "an American institution." The development of practical beekeeping began with the invention of the movable frame hive by Langstroth, the father of American beekeeping (1810-1895), and a comparison of the prevailing type of American hive, which is simple and useful for work, with the more elaborate British hive is significant.

All the important lines of work in the management of bees are fundamentally dependent upon a knowledge of their behavior. Honey

production is the beekeeper's object, consequently he must so manipulate his bees that, when the nectar is available near his apiary, the bees may be in a condition to secure the maximum quantity. In this connection he should also possess some knowledge of the nectar-producing plants occurring in his neighborhood and in the localities in which he establishes his "out apiaries," and the period of their flowering, for this reason an annotated list of considerable length of nectar-producing plants is given and constitutes a valuable section of the book.

Ever since Dzierzon announced his theory that the drone is a product of an unfertilized egg, parthenogenesis in the bee has afforded both beekeepers and scientific workers a theme for much disputation. In beekeeping the question is of no little practical significance, especially to the breeder. The conclusion of Dr. Phillips on this point is of value, as he has devoted particular attention to the problem of parthenogenesis for a number of years. He does not feel that Dzierzon's conception that all the eggs in the ovary of the queen are male eggs is correct, but thinks that it is not improbable that the eggs destined to be females, that is, queens or workers according to their post-natal treatment, die for want of fertilization, while eggs destined to be males, not requiring fertilization, are capable of development. In view of what we now know concerning the biochemistry of fertilization the author's suggestion deserves serious thought. In no other insect is the question of sex determination of greater importance since the value of race is as important in beekeeping as in any other form of breeding.

With a few exceptions the existing books on beekeeping are little more than works of reference or books of rules. There was a distinct need for a work that was readable, based on scientific principles and eminently practical. Dr. Phillips has satisfied these requirements to a degree that it would be most difficult to surpass. His work is as admirable in the method of presentation as it is in the well-balanced treatment of all the many aspects of the subject. The illustrations are well chosen,

largely original and advisedly subordinated to the text. The Rural Science Series contains many valuable treatises, and although comparisons *are* invidious, none shows greater evidence of most careful writing in the face of an obvious necessity for compression. Beekeepers, both amateur and commercial, and teachers in agricultural colleges, are under a debt of gratitude to the author of this book; if it does not come to be regarded as the standard handbook on the subject on this continent we shall be greatly surprised.

C. GORDON HEWITT

A VALUABLE UNPUBLISHED WORK ON POMOLOGY

Most horticulturists are doubtless familiar with "A View of the Cultivation of Fruit Trees of America," published in 1817 by William Coxe, of Burlington, N. J., who has been called "The Father of American Pomology," but probably few are aware of the existence of an unpublished book of colored drawings of the fruits that were illustrated in this work by wood cuts. On pages 225-226 of the *Country Gentleman*, of Albany, N. Y., for April 2, 1857, there was published by E[dmund] L[aw] R[ogers], Baltimore, Md., an account of the activities of Mr. Coxe, in which it is stated that he had intended publishing a second edition of the work, accompanied by colored engravings for which natural-size water-color drawings had been prepared by his daughters. The publication of this second edition was prevented by Mr. Coxe's death in 1831. About twenty years ago this article came to the attention of Mr. William A. Taylor, then assistant pomologist of the U. S. Department of Agriculture, and a number of letters were written in an effort to locate the colored drawings, but without success. The matter was then dropped until the spring of 1915 when, in a conversation regarding some old horticultural catalogs, Mr. Taylor related these facts to the writer who suggested that it might still be possible to locate the unpublished colored plates through methods used by genealogical research workers.

The search was begun by looking up at the Library of Congress historical and genealogical works which might give information regarding the descendants of William Coxe, with the result that a list of his children was obtained, with some of their marriages. From this it was learned that Philadelphia and vicinity was at present the most likely locality to search for his descendants. Addresses were obtained of several of the Coxe family in that vicinity and a form letter sent to all of them giving the object of the inquiry, with the result that a chart of this branch of the family, only recently published, was secured by the writer. This gave the names of all descendants to date, but without addresses, although the places of births were usually given. With this clue several city and telephone directories were consulted and addresses of most of the descendants obtained. About twenty-five copies of the form letter were then sent to these addresses with the almost immediate result of six replies giving the address of the probable possessor of the work, followed the next day by a letter from one of the twenty-five addressed acknowledging the possession of the work.

It is with great pleasure that announcement is made of the donation of the unpublished colored drawings of fruits to the Library of the U. S. Department of Agriculture by the grandchildren of Mrs. Elizabeth (Coxe) McMurtrie, a daughter of William Coxe, by whom most of the paintings were made. The drawings are bound and in an excellent state of preservation. The character of the work shows a high degree of skill on the part of the artist in depicting fruits; and the positive identification of all the earlier descriptions and illustrations, some of which have long been in doubt, will now be possible. The work has been placed in a fireproof building and it is expected that the additional safeguard of a fireproof safe for this and similar books will be provided at an early date.

The drawings are accompanied by the bound manuscript upon which the published work was based, to which have been added numerous notes intended for a second edition. Many of