denying the deductibility of such expenses. The Board of Tax Appeals made this decision, October 2, in passing on the appeal of Dr. Cecil M. Jack, of Decatur, Illinois.[2] The decision becomes final at the expiration of six months from its promulgation unless an appeal is taken to the courts before that time. The commissioner did not appeal, however, when the Board of Tax Appeals rendered similar decisions against him in favor of ministers[3] and of chemists,[4] in cases identical in every essential circumstance with the present case. In those decisions the commissioner officially acquiesced, without waiting for six months to expire, and there seems to be no reason why he should follow a different course now. Acquiescence seems more probable, too, since the board, in promulgating its decision in the present case, cited as precedents the very cases in which the commissioner had acquiesced, and repudiated as a precedent a decision of the board[5] by which the commissioner undertook to justify his course. In that case, the board pointed out, it was necessary for the board to uphold the commissioner's denial of the physician's claim of the right to deduct traveling expenses, because the physician had not submitted proofs of the amounts expended. The only discoverable result that would follow an appeal by the commissioner is added expense and trouble to the taxpayer and to the government, an additional case to clog the court calendar, and, pending a decision by the court, many thousands of payments unlawfully exacted of physicians under the guise of taxation, to be added to the tens of thousands of such payments already exacted, all of which the government may be called on to refund.

Since the Commissioner of Internal Revenue first denied to physicians their right to deduct traveling expenses, in 1922, the medical profession has paid probably as much as a half million dollars into the treasury, to avoid unlawful demands by the commissioner, the distraint of property and suits. Subject to certain limitations on the time within which claims for refunds must be filed, all of this money will be repayable to the physician who paid it, if the courts are not called on within six months to reverse the decision of the Board of Tax Appeals and if on appeal they sustain the decision of the board.

Applications for refunds may be filed without waiting for any further official action in the case. Claims for refunds for the tax years 1924 and 1925 must be made within four years from the date of payment; for the tax years 1926 and 1927, within three years, and for the tax year 1928, within two years. Unfortunately, in many individual cases the amounts repayable are probably so small that the physician will not feel justified in going to the trouble and expense of making a claim, and in many cases it will be difficult at this late date to produce adequate legal proof of the exact amounts paid for railroad fares, Pullman accommodations, hotel accommodations, meals and other allowable expenses. Applications for refunds must be made on the special form provided for that purpose,[6] copies of which can be obtained from the local collector of internal revenue. A separate application must be made for each year for which a refund is claimed. Every application must show that it is based on the decision of the Board of Tax Appeals in Jack *vs.* Commissioner of Internal Revenue.[7] Applications must be filed with the collector of internal revenue within whose district the refundable money was paid.—*Journal of the American Medical Association.*

[2] Appeal of Cecil M. Jack, Docket numbers 14995 and 17662, decided, Oct. 2, 1928.

[3] Appeal of Marion D. Shutter, 2 B. T. A. 23.

[4] Appeal of Alexander Silverman, 6 B. T. A. 1328.

[5] Appeal of Everett S. Lain, 3 B. T. A. 1157.

[6] Internal Revenue Service, Form 843.

[7] Appeal of Cecil M. Jack, Docket numbers 14995 and 17662, promulgated, Oct. 2, 1928.

SCIENTIFIC BOOKS

Animal Ecology. By CHARLES ELTON. New York. The Macmillan Company, 1927. Pp. xx, 207, pls. I–VIII, diagrams in text 1–13.

To out-of-doors biologists Elton's book should make a strong appeal. The author makes the point that the discoveries of Darwin, who was a magnificent field naturalist, had the remarkable effect of driving the scientists indoors, where they remained hard at work for fifty years or more "and whence they are now beginning to put cautious heads again into the open air." It is unfortunate, as Elton says, that almost a third of zoology has been so sadly neglected. The present work ought to do much to interest students in this neglected third—ecology—which, as Elton says, is simply another name for scientific natural history.

The author explains he has laid a good deal of emphasis on practical bearings, partly because many of the best observations are made by economic workers, "partly because the principles of animal ecology are seldom if ever mentioned in zoological courses in the universities, in spite of the fact that it is just such knowledge which is required by any one who is brought up against practical problems in the field, after he leaves the university."

One of the difficulties in ecology has been and is the lack of clearly conceived coordinating principles. The employment, in plant ecology, of "succession," "dominance," "reaction" and other concepts has been very

helpful. Elton stresses additional coordinating principles which ought to be useful not only in animal assemblages but also with biotic communities. The animal community, he says, can be best understood on a food-chain, food-cycle basis. Each animal can ingest food of a certain range of size only. This results in a gradation of eaten and eater from small, even microscopic, forms at one end of the food chain through larger and larger species to the largest at the other end of the chain—usually a carnivore. Elton emphasizes the significance of the study of *niches,* too, meaning by the term the status of the animal in the community, principally in relation to food, enemies and activities. The importance of "ecologic niches" has long been recognized in this country, especially by Grinnell[1] and certain of his coworkers, though not cited in this connection by Elton.

Elton believes that in the future at least half of all work in animal ecology will be concerned with the numbers of animals. As he points out, the numbers of animals, their fluctuations and regulation, are all-important in economic considerations. Closely linked with the food-chain, food-cycle, size of food, and niche, is what Elton calls the pyramid of numbers. By this rather telling figure he stresses the fact that the small "key-industry" animals at the base of the food-chain are exceedingly abundant, while the successively larger animals become less and less numerous. Variations in numbers with season, climate and cycle come in for discussion, and reference is made to plagues of mice and lemmings. If the accounts of and references to mouse plagues in the literature generally are as much exaggerated as is Julian Huxley's allusion to the California mouse plague of January–February, 1927, in the introduction to Elton's book (p. xvi), one should discount them considerably if he wishes to view them in proper perspective. This is probably not Huxley's fault, except as he used the lurid pseudo-scientific accounts of the occurrence that apparently went all over this country and crossed the ocean. In this same introduction Huxley attributes the subsidence of rodent plagues to the outbreak of some epidemic, and suggests that the killing of the rodents by man either has no effect on the natural course of events or even delays the crisis and maintains the rodent plague longer than would otherwise be the case. But it seems clear that natural epidemics can not possibly and should not be relied on to regulate the numbers of noxious rodents. Wherever a disease transmissible to live-stock and human beings is involved (as in the California mouse plague cited) such a course would often be dangerous to the public health. Omission to provide for effective control, as in the case of rabbits in the southwestern United States, in England, Australia and elsewhere, has apparently not resulted in effective natural control. Admittedly our regulation of animal populations is, at this stage, highly empiric and faltering; but Huxley's suggestion does not help much. On the other hand Elton and Huxley are probably correct in stating (p. xiv) that the existence of enemies is in a majority of cases a biological necessity to a species, "which without them would commit suicide by eating out its food-supply."

The scope of Elton's book is indicated by the chapter headings, which include "The Distribution of Animal Communities," "Ecological Succession," "Environmental Factors," "The Animal Community," "Parasites," "Time and Animal Communities," "The Numbers of Animals," "Variations in the Numbers of Animals," "Dispersal," "Ecological Methods," "Ecology and Evolution."

In spite of Elton's assertion that "plant ecologists can not afford to ignore animals, while a knowledge of plant succession is essential for animal ecologists" (page 18) he seems to miss the essential unity of the plant-animal community. While it is true that special methods must be developed and applied in animal ecology, nevertheless, an adequate solution of ecological problems can only be attained through attention to the biotic community and not animals or plants alone.

In his assertion that " . . . habits and habitats of animals may form systematic characters quite as important as structural features. . . ." the author strikes a sympathetic chord in the reviewer, who made a similar suggestion in a paper published thirteen years ago.[2]

With Elton's contention that "Ecology is a branch of zoology which is perhaps more able to offer immediate practical help to mankind than any of the others" the reviewer is also in complete agreement.

Elton's work is suggestive and stimulating. The author is to be congratulated on it.

WALTER P. TAYLOR

Les Bases Physiologiques de la Fécondation et de la Parthénogénès. By ALBERT DALCQ, Chargé de Cours at the University of Brussels, with a preface by Professor A. Brachet. Volume XI of the collection, "Les Problemes Biologiques," Les Presses Universitaires de France, 1928. 274 pages.

[1] See Grinnell, *Univ. Calif. Publ. Zool.,* 12(4): 91, March 20, 1914, and Taylor, *Univ. Calif. Publ. Zool.,* 12(15): 473–482, March 20, 1916.

[2] *Proc. Calif. Acad. Sci.,* 4th ser., 5(5): 116–117, December 30, 1915.