At any rate, a better application of the statistical method will be far to seek. *Ardea cinera cinerea* has been sought out and counted in England and Scotland, and to some extent in Ireland, by nearly 500 observers, so thoroughly that a concrete total, viz., 3744 to 3843 pairs, may be considered reliable for England, and equally definite figures for Scotland may be hoped for soon.

The launching of the work is another good thing which we owe to H. F. Witherby of "British Birds" and bird "ringing" fame, who acted on the suggestion of E. M. Nicholson. The latter dealt single-handed with the great body of returns. A great number of lieutenants took charge of their separate counties, and the Misses L. J. Rintoul and E. V. Baxter still carry on in Scotland.

Some 7 introductory pages deal with the history of earlier counts and the methods of the present one. Follows 16 pages of tabular analysis (alphabetically under counties), of existing heronries, with the year's count, information on previous years, foundation (date or "immemorial"), and authorities; 19 pages of similar analysis of extinct heronries, 3 pages of summaries, and a 6 page "Index to Information" including a list of the 255 English and Welsh heronries in order of size. In the third section, of 36 pages, Mr. Nicholson condenses a surprisingly complete discussion of the material under such headings as relations with man; relations with other species (predatory, parasitic, social, and competitive), and such aspects of the vital statistics as fertility, mortality, distribution, changes and ages of sites, foraging ranges, etc. The paper ends with a reference bibliography of 74 titles.

The most notable conclusions are that no serious *general* decrease is in progress, though *local* situations are often serious, and a much greater population would follow reduced human persecution, the worst of which may be laid at the door of the fisherman. Recommendations, in brief, are (1) that if this census is to have real value another should follow about 1940; (2) that scientific economic investigation is acutely needed; and (3) that further protective measures should await its results. These sections have a strangely familiar ring.

It is a pleasant surprise to find a textual section of such interest and charm in such a paper. Part of this is due to the rare quality of Mr. Nicholson's thought and style, part, especially to us, in the pleasant flavor of the mixture of ornithology, history, and romance—the study of a bird whose preservation was a virtue of feudalism and perhaps depended on the sport of falconry, and which to the present moment owes its abundance to the great landowners. Mediaevalism is omnipresent. The reviewer, for example, during some years of interest in conservation, has had occasion to foam at the mouth over many excuses for the destruction of birds, but never yet because they "disturbed the meditations of a religious house, into whose hands the property had passed!"

England, and Mr. Witherby in particular, have a sad habit of getting ahead of us in these matters. There are many birds, and many unit areas upon which we, here in America, greatly need similar work.—T. T. McCabe.

PHILLIPS AND LINCOLN ON THE CONSERVATION OF WATERFOWL.*—This book is addressed primarily to gunners, yet we have read it through with increasing conviction that it embodies fact and interpretation that make it a classic in the general literature of conservation. Indeed, so many widely bearing questions are given sound discussion that we venture to declare that no one henceforth can talk intelligently about any phase of vertebrate conservation until he has read and studied Phillips and Lincoln on the subject.

The present combination of authorship, with the background of each author, explains in part the superior results of their work as set forth in this volume. Phillips has behind him the wide experience of a true sportsman plus the technical knowledge and analytical capacity demonstrated in his monographic "Ducks of the World", while Lincoln brings knowledge gathered during his years of work in field and laboratory and also the results of access to the masses of information gathered under the auspices of the

*American Waterfowl | Their Present Situation and the Outlook | for their future | by | John C. Phillips | and | Frederick C. Lincoln | with illustrations by | Allan Brooks and A. L. Ripley | [design] | Boston and New York | Houghton Mifflin Company | The Riverside Press Cambridge | 1930 [our copy received December 4]. Octavo (160 x 240 mm.), pp. XVI + 312, frontispiece, 7 unnumbered plates, 5 maps, 11 headpieces to chapters.

Biological Survey. In the latter connection, the book is most appropriately dedicated "To Edward W. Nelson Chief of the United States Biological Survey 1916 to 1927 in recognition of his many years of service in the cause of American wild life conservation . . . ".

The subjects treated in the eleven chapters of this book include breeding areas, wintering grounds, migration, drainage and irrigation, shooting as an adverse factor in the wild-fowl supply, natural enemies, oil pollution, poisons and diseases, food plants, and methods of hunting; and a final chapter deals with the outlook for conservation of waterfowl and proposes certain policies. There is also an Appendix listing the game wild-fowl of North America, with their ranges, the statuses of the several species, and a record of their body-weights.

As a practical conservation measure the authors make their strongest plea for the retention of marshlands and lakes affording subsistence and breeding places for waterfowl. They are rightly strong in their condemnation of the "drainage fever", such as has so often resulted in huge losses to the taxpayers and farmers who have been immediately concerned. The Kankakee, Illinois, "drainage folly" is cited, and we could add other examples from our own knowledge of conditions here in California. Many such "reclaimed" areas should be allowed to return to original condition.

A strong economic plea is here made for the "aquatic farming" principle whereby fish, fur-bearing mammals and wild-fowl can be encouraged consistently with the retention of great storage reservoirs, natural or artificial, in the upper parts of drainage basins. All through the book emphasis is laid upon the propriety of conserving fur-bearing mammals on such areas as being wholly compatible with the highest service of the same areas as producers of waterfowl. Some unqualified statements of these biologists, who are in so excellent a position to warrant them, are worth citing here.

"Vermin" is defined (p. 188) as including "all animals that kill other animals that man himself desires to kill." The average sportsman's complaint against "vermin" is not grounded in adequate fact. All carnivorous mammals, save the house cat everywhere and the coyote in a few places, are, from the standpoint of waterfowl conservation, practically harmless, and they are valuable as fur-bearers, control of their numbers being "maintained by trappers who are seeking furs for the market" (p. 190).

As for birds of prey, the authors assert "confidently" (p. 188) that "the idea prevalent in the minds of many sportsmen that hawks and owls are responsible for a heavy mortality among waterfowl is utterly fallacious."

Phillips and Lincoln make a point of defending the private gun club, this despite certain admitted shortcomings, on the ground that such clubs are doing more today toward conserving the waterfowl supply than any other agency. They constitute the most important remaining loafing and feeding grounds. We, ourselves, have heard that claim before, and were dubious of it. But the present analytical statement of the case *for* the private club leaves us convinced! Pioneer opportunities for free shooting of waterfowl have just about come to an end. Practically all shooting territory *not* owned by private clubs is operated on a commercialized public or semi-public basis, with all sorts of abuses resultant upon the endeavor to get the greatest immediate profit out of the investment, with no thought of conserving "principal." The proportion of wild-fowl hit and lost is very much greater today than it ever was before because of inexperienced shooting at long range with repeating guns. A huge waste results from the extra crippling of birds. On the other hand, the private club fosters sportsmanship through well-observed rules concerning guns, days, and various other matters making for preservation of the supply of birds, all in their own long-time interests. The authors are against the so-called free public shooting ground and we find ourselves aligned with them in this after reflecting upon our own recent field observations. But of course, here, we would urge that the inviolable wild life refuge, of the nature of our National Parks, is far the better means of preserving our waterfowl, in the interests of all of the people.

As to modern sportsmen's methods the authors admit that, "when we bring into play live decoys, repeating guns, and unlimited intensive baiting, we have a combination capable of tremendous abuse." Such practice, they freely say, does not accord with good sporting ethics, and of course it is one of the reasons why especially our geese are now disappearing so fast here in California. In general, the

authors appear to be opposed to the baiting method of attracting and holding ducks on shooting grounds. Indeed, they suggest that such procedure may upset the exercise of the migratory instinct to such extent as to operate for disaster to a local duck population irrespective of shooting.

The use of the repeating gun is unequivocally condemned. "The pleasure to be derived from increased skill in the use of the ordinary double gun will far outweigh any dubious thrills which the modern shooter gets from the operation of a machine gun."

There is one contention of the authors that does not appeal to us—indeed which seems not consistent with some of the facts they themselves set forth. They say (p. 239) that "the most important element in securing our future game supply is that great group of enlightened sportsmen whose confidence and cooperation must be retained at all costs;" and elsewhere they speak rather disparagingly of the claims of the field-glass, "sentimental", and theorist type of conservationist, as if it were not *per se* just as worthy an aim to seek out a duck to look at, to admire, to study, as to shoot at. Yet, on another page they stress the need of "an entirely new game policy", of limited shooting for the economically favored few; there is not, and there never can be, enough game birds to go around; equal opportunities cannot be accorded every man desiring to shoot. There *must* be a great reduction in number of shooters. Supplantation of shooters by recreationists with other objectives, seems to us quite as practical a thing, to expect and now to encourage, as the "policy" in question, in properly justifying the conservation of not only game waterfowl but also the rest of our native fauna in so far as the interests of our entire citizenry permit. More and more the influence of the non-shooting public will weigh in these matters; and already they have begun to weigh—to good purpose along certain lines, though admittedly not so well in other directions, just as the authors point out.

The 2000 or so ducks on Lake Merritt contribute to the enjoyment of more people per day who merely look at and admire them, than they would in a year in serving as targets for hunters, with their "economic end" served, one by one, with the killing.

While one after another of the factors discussed by Phillips and Lincoln might thus be debated, with resulting agreement or disagreement with them, we must again declare that their book contains so much of fact and of sound induction that it might well serve as a textbook of general vertebrate conservation. —J. GRINNELL.

MINUTES OF COOPER CLUB MEETINGS

SOUTHERN DIVISION

JULY.—The Southern Division of the Cooper Ornithological Club held its regular monthly meeting on Tuesday evening, July 29, 1930, at the Los Angeles Museum, Exposition Park, Los Angeles. About twenty members and friends were present and President Willett occupied the chair. The minutes of the June meeting of the Southern Division were read and approved.

As no formal program had been planned for the evening, President Willett called for experiences and observations from those present. Dr. Miller was asked about the Asiatic Minas recently reported in the newspapers as having become established here. He told of having them called to his attention and in turn calling them to the attention of the County Horticultural Commissioner, who then went with Dr. Miller to investigate. Dr. Miller identified the birds, and the local reports indicated that at least one brood of young had been raised. Two specimens were collected that day, and the Horticultural Commissioner has reported four more killed since then. It is hoped that if this is not all of them, the remainder will be disposed of shortly. Dr. Miller told of the Mina in the Hawaiian Islands where it had spread Lantana and Guava over the pasture lands of the islands and had been a factor in driving out the native birds. He also stated that it has proven a nuisance where it has been introduced in South Africa.

Mr. Reis told of seeing an albino Light-footed Rail near Balboa. Mr. Willett reported the conditions favorable for birds in the country around Alturas, in the northeastern corner of California, where he spent a few weeks this summer. Dr. Test, of Oberlin, spoke of the change from eastern to western species of birds observed as he drove westward. Mr. Quattlebaum told of the birds he saw on a recent trip via Central America, northern South America, and Cuba. Dr. Miller told of