

Pressure of work has prevented any extended review of the literature which has come to the Editor's table, nor will it be possible to prepare such copy for the September issue. It is hoped that after the new school year begins this phase of the Bulletin may be resumed.

The absence of the Editor for the summer, and until the time for the issue of the September number, will cause a delay of two or three weeks in the appearance of the September number. The Editor begs for so much of the indulgence of the readers of the Bulletin.

The account of the second annual meeting of the Wilson Ornithological Club was crowded out of the March issue, where it should have appeared. It is presented at this late date as a matter of record. The time of the next meeting has not yet been decided upon.

CORRESPONDENCE

Editor, Wilson Bulletin.

DEAR SIR:—An article* in the last volume of your publication contains statements subject to correction. This article is a criticism of a review which the writer published of four papers on field observations upon the feeding of nestling birds, prepared by students of the Iowa Lakeside Laboratory.

The review to which Professor Stephens objects was published in the Auk for July, 1914 (pp. 420-421). It was intentionally made brief and mild in tone. Professor Stephens, however, refers to the "captious reviewer," a trite phrase that slips readily from the pen, but which in the present instance is unjustified. That the reviewer was reluctant to criticize the papers considered is shown by the fact that the earliest one was published two years before the review. The overconfidence exhibited by its writer in recording the identity of items of food fed to nestlings was thought to be only one of the defects to be expected in an early scientific essay. It was hoped that succeeding papers would be more conservative. However, the repetition of the same kind of work made me decide to protest.

* Stephens, T. C., A Rejoinder. Wilson Bull. XXVI, No. 3, Sept. 1914, pp. 157-161.

In my review I made the following remark: "The flaw the reviewer would point out is perhaps due to over-enthusiasm on the part of the observers, or perhaps to failure to realize the difficulty of making exact identifications of insects." Professor Stephens' reply contains nothing to offset this impression. I warrant that if any of the persons concerned in making the studies of the food of nestlings in question will take the trouble to master any group of insects, he will no longer care to risk making specific identifications of small insects that are being fed to nestling birds.

The detailed nature of statements relating to the food given nestling catbirds by their parents is illustrated by the following quotation: "Among the 55 beetles fed were recognized may-beetles, click-beetles, tiger-beetles, water-beetles, and snout beetles of various species. The flies were mostly flesh flies, though house and stable flies were noted.*"

Professor Stephens gives some explanations, which had they been in the original articles reviewed, would have greatly modified the impression produced. For instance he says regarding the observations on the catbird: "Flies swarmed about, . . . and the observer in the blind could see the catbird capture and feed them to the young birds in the nest. A number of these flies were caught and submitted to an entomologist . . . who named the flies as above" (p. 158). On this evidence, however, few would card-index the catbird as an enemy of any particular species among these flies; the chance for error is too great. There may have been a score of species of flies among those the birds were preying upon, and which particular ones were taken, could not have been accurately known. This instance as explained therefore does not constitute a definite record of catbirds feeding the identified species to their young. The paper reviewed, however, unqualifiedly states that among the insects fed were house and stable flies. The single instance of a mosquito being fed to the young by a catbird is made clear by a belated explanation, which should have been in the original article. It appears that a mosquito seen within the blind flew out and was snapped up by the bird. But this does not prepare the way for acceptance of the 65 records for the yellow warbler, as the circumstances could not have been the same. Even though this nest was only two feet away, the part of a mosquito that might protrude from a warbler's bill, in nine cases out of ten, probably would not suffice for certain identification at that distance.

Would Professor Stephens or his students on the basis of the nestling studies reported care formally to add the name of the cat-

* Wilson Bulletin, Vol. XXV, No. 4, Dec. 1913, pp. 179-180.

bird to the list of enemies of the house fly (*Musca domestica*) and the stable fly (*Stomoxys calcitrans*), both members of a family characterized by obscure markings and slight specific differences, and which are much resembled by various flies of at least three other families? Or would they list the yellow warbler as a predator upon mosquitos, on the strength of field observations only, when the number of species of small flies that superficially resemble mosquitos is legion? If so, their idea of scientific accuracy is unusual.

The writer in his original review tried to give a dispassionate criticism of a single unfortunate tendency of papers by less experienced investigators. This was intended only as advice for future caution and the general merit of the contributions was recognized. The more of such intimate studies of birds, the better, provided strict accuracy be kept in view.

Professor Stephens, however, adopts a controversial attitude in his rejoinder, which leads him to attribute to me sentiments that exist only in his mental conception of me. His remarks also contain unjustified conclusions resulting from ignorance, and innuendos, which probably would not have been made had he adopted disputation rather than controversy as his medium. A few examples follow:

1. "The food of nestling birds, a field which seems to be guarded zealously . . . as the peculiar domain of the Biological Survey" (p. 157).

Nothing said in the review cited by Professor Stephens warrants this insinuation, nor does anything that the writer has said elsewhere. The Biological Survey has consistently encouraged and assisted the scientific study of the food of birds, wherever attempted.

2. The proposal "to tie bags over the anal orifices of nestling birds for the purpose of collecting the excreta will be highly amusing to anyone who has noticed young birds in the nest" (p. 160).

The proposal as stated may perhaps be amusing, but so far as I know Professor Stephens is the only one who has made it. The bags used by the writer have enveloped about three-quarters of the whole bodies of nestlings, being tied on over the breast and under the wings. All excrement voided was obtained, and the records of different nestlings kept separate by the aid of different colored tapes used on the bags. After a short time the parent birds did not pay much attention to the bags.

3. "Vigorous, though quibbling criticism" (p. 160).

No criticism can be called quibbling which definitely challenges the accuracy of a scientific article.

4. In two paragraphs, on page 160, Professor Stephens seeks to lessen the effect of my statements that "a great many birds feed

[their young] by regurgitation." He says in part "In our studies on the passerine birds we have succeeded in following the feeding of at least one out of a brood, from the moment it left the egg until it left the nest, in the cases of the yellow warbler, the cat-bird and the meadowlark . . . and in each of these instances there has been no feeding by regurgitation. This is known simply from the fact that the food has been visible in the bird's bill."

The fact stated in the last sentence by no means disproves regurgitation. That food is visible in the bill is no proof that the gullet does not also contain food. The species above mentioned sometimes, at least, feed by regurgitation. In Mrs. Wheelock's article on "Regurgitative feeding of nestlings" in the *Auk* for January, 1905 (pp. 54-70), this capable field observer records more than thirty-five species of birds as feeding their young by regurgitation including all of the species Professor Stephens says were not observed to use this method.

Professor F. E. L. Beal has seen the following species feed their young by regurgitation: Rufous hummingbird, Arkansas goldfinch, California towhee, black-headed grosbeak, and the Eastern robin.

The writer knows from personal experience, that the cardinal, the rose-breasted grosbeak, the Eastern goldfinch, the English sparrow, and the red-eyed vireo feed their young at least in part by this method, the finches almost wholly. This is a longer list of birds than Professor Stephens claims acquaintance with and may show that my definition of limited experience in this field of work is quite different from his own, and that it does not justify the slur he pleases to record on page 160.

5. "The examination of a stomach will give, at best, the story of only three or four hours of the bird's life" (p. 160).

True, but when enough stomachs are collected, all of the hours will be typically represented.

6. "What [food] is unrecognizable cannot be taken into account, except as 'unknown,' or as 'miscellaneous.' If the tables or diagrams do not show this, must we not conclude that the writer has discarded the unidentified material?" (p. 161).

Professor Stephens will find entries under miscellaneous animal and miscellaneous vegetable food in practically every formal report by the Biological Survey upon the food of birds. None of the material is discarded.

7. "Too often the adherent of stomach examination publishes only his percentage results, without the detailed data upon which his percentages are based, which are necessary in a strictly scientific piece of work" (p. 101).

It is impracticable to publish detailed analyses of hundreds and

thousands of bird stomachs, and in fact impossible in Government documents. The data and the specimens upon which they are based, are kept on file in the Biological Survey, for inspection by anyone interested.

8. Relating to field observations, "it yields results with far greater accuracy than its critics are ready to admit" (p. 161).

The writer made no criticism of field observations but only of a certain phase of a few particular pieces of such work. Field work is necessary to round out the study of almost any biological problem. Its necessity, however, is no greater than the necessity that it should be accurate.

9. "It is not particularly reassuring to read the boast of having killed so many thousands of nestling birds in order to determine what their food has been."

Professor Stephens has never yet been compelled to read such a "boast," for the reason that nothing like it has been published.

It ill befits anyone interested in the scientific study of ornithology, and especially is this true of the President of a society whose sole object is the study of birds, to say or do anything that will render the collecting of specimens more difficult than it now is.* Those advocating all-inclusive protection have so far had their way that scientific collecting has been forbidden in some states and so hedged about with restrictions as to be impracticable in several others. The laws of some states are even so worded that no relief can be had when serious losses are suffered because of ravages by birds.

As to the effect of scientific collecting upon the bird population, it is undoubtedly true that more birds have been destroyed by single cold rain, or sleet storms, or other meteoric disturbances, than the total that have been killed by all of the scientific collectors in this country since the beginning.

10. "What is needed above all on the part of iconoclastic reviewers is more certainty and less quibbling, and more hard work in the field and laboratory that there may be developed an appreciation of the difficulties to be encountered in productive effort" (p. 161).

Professor Stephens' controversial attitude is nowhere more manifest than here, and leads him far astray. The writer has spent practically all of the working days of the past ten years and more, in field and laboratory study of the food of birds, a total that many times exceeds that employed to the same end by Professor Stephens and his students.

* In this connection see Grinnell, J., *Conserve the Collector*, Science, N. S. XLI, pp. 229-232, Feb. 12, 1915.

The degree of my certainty regarding questionable identifications in the papers I reviewed in this: I submitted the original statements of the authors reviewed, and my criticisms to my colleagues in economic ornithology and to various entomologists in Washington, and have repeated this process exhibiting Professor Stephens' remarks. Without exception these specialists have been of the opinion that positive identifications could not have been made under the conditions described for the cases mentioned in my review.

In conclusion I may say that my reviews in the *Auk* are initialled because that is the invariable custom in that journal, and not because of any desire for anonymity.

W. L. MCATEE.

SCIENCE, ORNITHOLOGY, AND THE WAR.

Editor of The Wilson Bulletin:

While the daily newspapers, journals, and magazines of every description, as well as other prints—to say not a word of new books on the subject—teem with accounts of how the great conflict in Europe is affecting various interests and industries in this country, there is hardly a paragraph ever published which has anything to say of the influence which this terrible international imbroglio is exerting upon the various sciences, scientific institutions, literature, and upon scientific researchers of every department in nearly all parts of the world.

In so far as Europe is concerned, we hear a great deal in regard to how this stupendous struggle has crushed many trade interests; the enormous number of casualties that has thus far been the result of it; the diseases it has spread; the mental and physical defects which will result from it upon the offspring of generations of people to come, and, indeed, vast and far-reaching effects in many other directions too numerous to mention. All this is being incessantly and voluminously brought before us in the aforesaid manner, with rarely a word as to how science has thus far fared in it all.

The dollar and the base-ball being the two chief concerns in this country demanding the greatest amount of attention and cultivation—at least on the part of nine-tenths of the total population—it becomes a matter of no surprise that between these two engrossing pursuits the public cares not a rap for the fact that, since the first week in August, 1914, until the end of January, 1915, there had not been received at the library of the United States National Museum, and probably at the libraries of other institutions of the kind in this country, a single German or French scientific journal

of any importance devoted to biology. Especially are the elegant publications of this class coming from Germany missed, including those issuing contributions on systematic ornithology and avian anatomy. This is the more distressing and discouraging for the reason that we have so few publications of the kind in this country. In so far as some of the best German zoölogical publications are concerned, it would seem that they may not appear even in Germany until after the war is over. This statement is based upon personal experience, for at the commencement of the trouble in August last, I had an extensive monograph on the genus *Dendrocygna* and its allies, with many colored and plain plates, all up in type for the *Zoölogische Jahrbücher*; and I am now told that I will not see my separata of that production for some time.

In Hungary (Budapest) they have fared a little better; for among other publications, not only will *Aquila* (Vol. XXI) soon appear, but Americans having contributions in that issue are receiving their separata at the rate of *eight at a time*—all that the foreign postal authorities and the censors will pass “in one lot.” This is remarkable when we come to know what they have to contend with in the Royal Hungarian Central Bureau for Ornithology. Not only are the premises and a part of the buildings, as the late Director Otto Herman wrote me, used for the accommodation of the wounded soldiers of the Austrian Army, but some of their scientific staff may have actually been sent to the front to serve as soldiers. Among these I may mention my friend, Dr. Koloman Lambrecht, of the Museum of Budapest, who has just received his degree of Doctor of Philosophy, and who was in the midst of his researches upon fossil birds, when he was selected for military duty. It is impossible to command language or words to express one's views upon such sacrifices as these, especially in the light of the senselessness of the present stupendous and unnecessary struggle, where kaisers and kings, in their war-game amusements, are allowing such material to take the chances of being sacrificed.

In England they are not faring much better in these respects, for not only have upwards of twenty or more zoölogists and botanists, members of the regular staff of the British Museum, gone to the front, but doubtless before this letter is up in type several of them may have been killed in the trenches. And well may we ask: to what end? The same bloody war-game of the crowned heads,—for the true principle of “patriotism” does not enter into it. Doctor Mitchell, Secretary of the London Zoölogical Society, writes me that they will have but very little money to spend in these days for plates or for lengthy contributions in *The Ibis* or in the publications of the Zoölogical Society; and Mr. John Henry Gurney, a

Corresponding Fellow of the A. O. U., in a letter to me under date of January 2, 1915, says: "I have not heard of any naturalists being killed in this terrible war, but have already lost several personal friends.

"I have two sons-in-law at the Front, one of whom is the son of E. G. Mead-Waldo, the well-known Ornithologist, but mercifully they have escaped so far. I have also two nephews out, and my son is with the Red Cross.

"In consequence of the War the sale of my book, "The Gannet," has completely stopped, and the only hope I have for it now is that the United States naturalists may buy some copies of the 140 still remaining unsold."*

It is profoundly to be hoped, quite apart from the casualties that may take place among scientists of all classes in this disastrous war, that no one of the number of the ornithologists of the various countries involved, whose names appear among our Honorary and Corresponding Fellows of the American Ornithologists' Union, will be called upon for army service and perhaps fall victims to the demand for their services in any such capacity. It is all very well if a naturalist be a commissioned officer in the army or navy to meet the duties devolving upon him in times of war, notwithstanding the danger in which his life may be placed or his researches interrupted; but this is vastly different from taking civilians who are men of science, of exceptional and unique value and actively at work upon scientific researches in institutions, out of their positions and making privates in the army of them, carrying them out on the firing line, to run the chance of being shot down alongside of Tom, Dick, or Harry, who, in many instances, may not be worth the cartridge it takes to kill him, and who often is a good riddance to the country that claims him as citizen. The world can not afford to do this; no nation ought to place the lives of such of her men of mark in jeopardy,—to place them where a single bullet, fired by some common soldier, may wipe out a life that it has required generations to produce, and whose works may be one of the torches of an advancing civilization. The very thought of such stupidity and senseless waste is in itself appalling and, to the cultured mind, almost paralyzing.

Quite apart from all this, it may be well to note that this war in Europe is having a very unlooked-for effect upon American science. Before this international catastrophe on the Continent, scien-

* Incidentally I may remark that I hope that those who have not already a copy of Mr. Gurney's valuable classic on the gannet will avail themselves of this opportunity to place one upon their shelves; it is a model volume on the life-history of the species.

tific productions of all kinds, including many in ornithology, were *printed* abroad—usually in Germany; and the plates illustrating them were engraved abroad—usually in Germany; while at the present time, all of such work is being done in our own country. This, in the end, may prove to be a great stimulation to American science, including all the departments of biology. As it now stands there is not money enough in *any* scientific institution in the United States to publish even a small part of the material presented in any particular instance. All of our great scientific institutions are *out of funds* and almost helpless in the matter of passing into print the results of the labors of men and women of science in this country. This is discouraging enough to those who are connected with institutions where the publication of their work is taken as a matter of fact, while it is enough to drive the private researcher out of his laboratory to seek other lines for his energy.

In a second interesting letter received from Mr. Gurney, under date of February 1st, 1915, he sends me some very curious notes on the effect of the heavy gun-firing on certain sea-birds.

“The naval fight in the North Sea on the 24th was audible in this country and Yorkshire.

“The distant concussion from the big guns had a curious effect on Pheasants, which in some woods adjoining the coast are said to be greatly perturbed.

“In the same way thousands of screaming Gulls (*Larus ridibundus*, *L. fuscus*, and *L. argentatus*) were tremendously upset by the so-called bombardment of Yarmouth, which by the way the Germans still persist in calling a fortified town.

“Another strange feature has been the washing up of numerous Guillemots, Razorbills and Scoter Ducks (*Uria troile*, *Alca torda*, *Oidemia nigra*) in a more or less moribund condition. These birds had come in contact with the oily petrol, which appears to be thrown off when a mine is discharged, and which rising to the surface, adheres to their plumage.”

Faithfully yours,

R. W. SHUFELDT.

Washington, D. C., January 17, 1915.