SCIENCE.—SUPPLEMENT.

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THE PRESENT WHOLESALE DESTRUCTION OF BIRD-LIFE IN THE UNITED STATES.

IN the bird-world, as elsewhere, the struggle for existence, even under natural conditions, is a severe one, undue increase being held well in check. Birds, and their eggs and young, are not only the natural prey of many predaceous mammals and reptiles, but also of predaceous birds. Squirrels, spermophiles, and mice, although not in a strict sense rapacious, are among the worst natural enemies of the smaller birds, whose eggs and young they seek and devour with avidity; while many birds not usually classed as predatory, as the jays, crows, grackles, cuckoos, and some others, wage unremitted warfare upon the eggs and young of the weaker species. The elements are also far more destructive of bird-life than is commonly recognized. Late cold storms in spring destroy many of the early migrants, sometimes nearly exterminating certain species over considerable areas where they had become prematurely settled for the season. The unusual southward extension of severe cold waves and heavy snow-falls, such as have marked the present winter, are destructive to the bird-life of the regions thus exceptionally visited. During the migrations, both in the fall and spring, immense numbers of birds are sometimes caught by storms, and blown far out to sea and drowned, or perish in attempts to cross the larger inland lakes. There is abundant evidence to show that the annual destruction of birds by the elements alone must prove a severe check upon their increase. But all this is a part of nature's routine, which has characterized past ages as well as the present, and which, so far as we know, may be only the natural and necessary check upon undue increase. It is only when man comes upon the scene that nature's balance is seriously disturbed.

Man's destructive influence is to some extent unavoidable, but in far greater part selfish and wanton. The removal of forests, the drainage of swamps and marshes, the conversion of wild lands into farms, and the countless changes incident to the settlement of a country, destroy the haunts and the means of subsistence of numerous forms of animal life, and practically result in their extermination over vast areas. The birds, particularly the larger species, suffer in common with vertebrate life in general. Electric-light towers, light-houses, and light-ships are also a fruitful and modern source of disaster to birds, particularly during their migrations, when, in thick weather, thousands upon thousands kill themselves by dashing against these alluring obstructions. Telegraph-wires contribute also largely to the destruction of bird-life. While the destruction by these agencies is greatly to be regretted, it is not directly chargeable to cupidity and heartlessness, as is the far greater slaughter of birds in obedience to the dictates of fashion, presently to be detailed.

The history of this country, as is well known, is the record of unparalleled destruction of the larger forms of animal life. Much of this destruction, it is true, was unavoidable, sooner or later. But it is no less true that the extirpation of our larger game animals has been needlessly hastened by what may be fairly termed a disgraceful greed for slaughter, — in part by 'pot-hunting' on a grand scale, in part for the mere desire to kill something, — the so-called 'love of sport.' The fate of extermination, which, to the shame of our country, has already practically overtaken the bison, and will sooner or later prove the fate of all of our larger game-mammals and not a few of our game-birds, will, if a halt be not speedily called by enlightened public opinion, overtake scores of our song-birds, and the majority of our graceful and harmless, if somewhat less 'beneficial,' sea and shore birds.

The decrease in our song and shore birds is already attracting attention; and the protest against it, which reaches us from many and widely distant parts of the country, is not only painful evidence of this decrease, but gives hope that the wave of destruction, which of late years has moved on in ever-increasing volume, has at last reached its limit of extension, and that its recession will be rapid and permanent. But to secure this result, the friends of the birds — the public at large — must be thoroughly aroused as to the magnitude of the evil, and enlightened as to its causes and the means for its retrenchment. It is therefore the purpose of the present series of papers to throw some light upon the extent, the purposes, and the methods of the present wholesale slaughter of our native birds.

Birds are killed for food, for 'sport,' for natural-

history specimens, to stuff as objects of curiosity or ornament, and for personal decoration. The birds killed for food are, of course, mainly the commonly so-called game-birds, — pigeons, grouse of various kinds, ducks and geese, and the great horde of smaller waders, known as 'peeps,' snipes, plovers, rails, etc. The slaughter of these has been so improvident, and their decrease of late so marked, that they are now more or less cared for by the numerous game-protective associations, but are still, in the main, very inadequately guarded. In addition to the birds commonly recognized as game-birds, many song-birds are hunted for food, notably the reed-bird, or bobolink, the robin, the meadow-lark, the blackbird, and the flicker, and, in some localities, all the larger song-birds. This is particularly the case in portions of the south, where strings of small birds may be seen suspended in the game-stalls. In March of last year, a well-known ornithologist reports finding in the market at Norfolk, Va., hundreds of woodpeckers and song-birds exposed for sale as food, the list of species including not only robins, meadow-larks, and blackbirds, but many kinds of sparrows and thrushes, and even warblers, vireos, and wax-wings. While some of the stalls had each from three hundred to four hundred small birds, others would have but a dozen or two. "Nearly all the venders were colored people, and doubtless most of the birds were captured by the same class." This 'daily exhibition in southern markets' indicates an immense destruction of northern-breeding song-birds which resort to the southern states for a winter home.

As shown in a subsequent paper of this *Supplement*, the eggs of many species of terns, gulls, plovers, and other marsh and shore breeding species, are systematically taken for use as food, the egg-hunting business being prosecuted to such an extent as to prove a serious cause of decrease of the species thus persecuted, while the value as food, of the eggs thus destroyed, is too trivial to be for an instant regarded as of serious importance. The havoc described below by Mr. Sennett as wrought in Texas prevails all along our coast-lines; and many localities might be cited where the destruction is equally sweeping, as on the Pacific coast and at frequent points on the Atlantic coast from Florida to Labrador, — wherever, in fact, the birds occur in sufficient numbers to render such wholesale plundering practicable. The marsh-breeding rails are at some localities subject to similar persecution. At one locality on Long Island, I am informed, a 'bay-man,' who keeps a house of entertainment for sportsmen during 'the season,' supplies his table for weeks at a time with the eggs of the rails that breed numerously in his vicinity, — in strange conflict, too, with his own interests, since, by destroying the eggs of the rails, he 'kills the goose that lays the golden egg' for the rail-shooting season.

In general, the game and quasi-game birds are killed for sport rather than for gain or for their intrinsic value as food: exception, however, is to be made of the 'professional' or 'market' gunners, by whom the ranks of the water-fowl are so fearfully thinned, and who often resort to any wholesale method of slaughter their ingenuity may be able to devise. But the slaughter of our birds in general is doubtless largely due to the mere fascination of 'shooting.' Many song-birds are killed 'for sport' by the 'small boy' and the idler, whose highest ambition in life is to possess a gun, and whose 'game' may be any wild animal that can run or fly, and wears fur or feathers. Some slight depredation on the small fruits of the garden, or on field-crops, is ample pretext for a war of extermination on robins, catbirds and thrashers, jays and chewinks, as well as blackbirds and crows, and the birds so unfortunate as to fall into the category of hawks and owls, notwithstanding the fact that every one of these species is in reality a friend. Yet the slaughter is winked at, if not actually encouraged, by those who are most injured by it; while the 'general public' of the districts where such practices prevail are either too ignorant of the real harm done, or too apathetic, to raise any serious protest.

Among the important agencies in bird-destruction is the 'bad small boy' — and in the ornithological sense his name is legion — of both town and country. Bird-nest robbing is one of the besetting sins — one of the marks of 'natural depravity' — of the average small boy, who fails to appreciate the cruelty of systematically robbing every nest within reach, and of stoning those that are otherwise inaccessible. To him the birds themselves, too, are also a fair target for a stone, a sling, a catapult, or a 'pea-shooter:' to the latter many a sparrow, a thrush, or warbler falls a victim. Says a recent writer on the subject of bird-destruction, "Two ten-year-old lads in that quiet and moral hamlet [Bridgehampton, Long Island] confessed this autumn, that with pea-shooters they had killed during the season fifty robins and other birds which frequent the gardens, orchards, and cemetery. Such boys exist all over the United States, and war on birds as things made to be killed. . . . The pea-shooter gives no sound, and can be carried in the vest-pocket; but so destructive is it in the hands of a skilful child, that the legislatures of some of the western states were obliged to pass laws making

the sale of the thing a misdemeanor, and punishing the possession or use of it."

Perhaps equally, possibly more destructive, and certainly more reprehensible, is the newly-arrived 'foreign-born citizen,' who, to demonstrate to himself that he has really reached the 'land of the free,' equips himself with a cheap shot-gun, some bird-traps, clap-nets, or drugged grain, one or all, and hies himself to the nearest haunt of birds for indiscriminate, often very quiet, slaughter or capture. Of course, only a few of our guests from foreign shores either possess or indulge in this propensity; but in the neighborhood of our larger cities, notably on Long Island, and elsewhere near New York, the destruction of bird-life thus effected, we are credibly informed, is startlingly large.

The destruction of birds by taxidermists, and for alleged 'scientific purposes,' has justly attracted attention, and has unjustly brought into disrepute the legitimate collecting of both eggs and birds for scientific use; but much of this alleged scientific collecting is illegitimate, being really done under false colors, or wrongly attributed to science. Of the birds killed or mounted by taxidermists, some, not unfrequently a large part, are for museums or private cabinets: another large share is put up for parlor or hall ornaments, either as groups or singly. All this, by a little license, may be allowed as legitimate, or at least not seriously reprehensible. But, unfortunately, the average taxidermist has too often an unsavory alliance with the milliner, and, in addition to his legitimate work, is allured into catering on a large scale to the 'hat-trade.' Although a few of them are too high-principled and too much the naturalist at heart, to thus prostitute their calling, taxidermists as a class are at present in deserved disrepute, and are to a large degree responsible for much of the public and mistaken criticism of scientific collecting. This criticism is perhaps more especially directed against the 'egg-collector,' who ranges in calibre and purpose from the schoolboy, who gathers eggs as he does postage-stamps or 'show-cards,' — for the mere purpose of 'making a collection,' — to the intelligent oölogist or ornithologist, who gathers his eggs in sets, prepares them with great care, with the strictest regard to correct identification, and in series sufficient to show the range of variation — often considerable — in eggs of the same species, and takes a few additional sets for exchange. He may have in the aggregate a large collection, numbering hundreds of species, and thousands of specimens; but in general the same species is not laid under serious requisition, and the sets are gathered at considerable intervals of time and from a large area of country. A squad of street-urchins set loose in the suburbs will often destroy as many nests in a single morning's foray as a collector gathering for strictly scientific purposes would take in a whole season, and with far more harmful results, because local and sweeping. Much of the egg-collecting by schoolboys should be stopped, and can be easily checked under proper statutory regulations, as will be explained later in a paper on bird-legislation.

The scientific collector, as already intimated, is charged, in some quarters, with the 'lion's share' of the responsibility for the decrease of our song-birds; with what justice, or rather injustice, may be easily shown, for the necessary statistics are not difficult to obtain. The catalogue of the ornithological department of the national museum numbers rather less than 110,000 bird-skins. This record covers nearly half a century, and the number of specimens is four times greater than that of any other museum in this country; while the aggregate number of all our other public museums would probably not greatly exceed this number. But to make a liberal estimate, with the chance for error on the side of exaggeration, we will allow 300,000 birds for the public museums of North America, one-half of which, or nearly one-half, are of foreign origin, or not North American. To revert to the national museum collection, it should be stated, that, while only part of the specimens are North American, — say about two-thirds, — they represent the work of many individuals, extending over a third of a century, and over the whole continent, from Alaska and Hudson Bay to Mexico and Florida, and from the Atlantic to the Pacific. Furthermore, this number — 110,000, more or less — is not the number now in the national collection, which is far less than this, thousands and thousands of specimens having been distributed in past years to other museums in this country and abroad.

So far the public museums: now in relation to private cabinets of bird-skins. Of these it is safe to say there are hundreds scattered throughout the country, containing from three hundred to five or six hundred specimens each, with a few, easily counted on the fingers of the two hands, if not on a single hand, numbering five or six thousand each, with possibly two approaching ten thousand each. Probably 150,000 would be a liberal estimate for the number of North American bird-skins in private cabinets, but, again to throw the error on the side of exaggeration, let us say 300,000, — not, however, taken in a single year, but the result of all the collecting up to the present time, and covering all parts of the continent. Add this number to the number of birds in our

public museums, less those of foreign origin, and we have, allowing our exaggerated estimates to be true, less than 500,000 as the number of North American birds thus far sacrificed for science. The few thousand that have been sent to other countries in exchange for foreign birds can safely be included under the above estimate, which is at least a third above the actual number.

We have now passed briefly in review all the agencies and objects affecting the decrease of our birds, save one, and that the most important — many times exceeding all the others together, — the most heartless and the least defensible, namely, the sacrifice of birds to fashion, for hat ornamentation and personal decoration. Startling as this assertion may seem, its demonstration is easy.

In this country of 50,000,000 inhabitants, half, or 25,000,000, may be said to belong to what some one has forcibly termed the 'dead-bird wearing gender,' of whom at least 10,000,000 are not only of the bird-wearing age, but — judging from what we see on our streets, in public assemblies and public conveyances — also of bird-wearing proclivities. Different individuals of this class vary greatly in their ideas of style and quantity in the way of what constitutes a proper decoration for that part of the person the Indian delights to ornament with plumes of various kinds of wild fowl. Some are content with a single bird, if a large one, mounted nearly entire: others prefer several small ones, — a group of three or four to half a dozen; or the heads and wings of even a greater number. Others, still, will content themselves with a few wings fancifully dyed and bespangled, or a wreath of grebe 'fur,' usually dyed, and not unfrequently set off with egret-plumes. In the average, however, there must be an incongruous assemblage made up of parts of various birds, or several entire birds, representing at least a number of individuals. But let us say that these 10,000,000 bird-wearers have but a single bird each, that these birds may be 'made over' so as to do service for more than a single season; and still what an annual sacrifice of bird-life is entailed! Can it be placed at less than 5,000,000? — ten times more than the number of specimens extant in all our scientific collections, private and public together, and probably a thousand times greater than the annual destruction of birds (including also eggs) for scientific purposes.

Fortunately, perhaps, the supply of bird-skins for decorative purposes is not all drawn from a single country, the whole world being laid under tribute. The ornithologist recognizes in the heterogeneous groups of birds on women's hats, met with on every hand, a great preponderance of North American species; but with them are many of the common birds of Europe, and a far greater variety from South America, and many from Africa, Australia, New Guinea, and India. But, on the other hand, it is well known that our own birds are exported in immense numbers to Europe; but, whether the exportation exceeds the importation, it is impossible to determine, from lack of proper statistics.

With the foregoing facts before us in regard to the annual destruction of our birds, it is no longer surprising that many species, and even genera, of birds, are fast disappearing from our midst. Considering that this slaughter has been waged for years, but with rapid increase year by year, is it not rather a wonder that so many birds are still left?

The extent to which this destruction is carried on, and in what ways, in the immediate vicinity of New York, is indicated in a subsequent article of this series, by Mr. Dutcher. But the slaughter extends in greater or less degree throughout the country. The destruction of 40,000 terns in a single season on Cape Cod for exportation, a million rails and reed-birds (bobolinks) killed in a single month near Philadelphia, are facts that may well furnish food for reflection. The swamps and marshes of Florida are well known to have recently become depopulated of their egrets and herons, while the state at large has been for years a favorite slaughter-ground of the milliner's emissaries. The present winter parties organized and equipped in this interest are said to be prosecuting the same wholesale warfare against the birds at various points along the whole gulf-coast.

But why, some may be supposed to ask, should the slaughter be interfered with? Does it not yield profit to many an impecunious idler, who receives so much per head from the 'taxidermist' for the freshly killed bird? Do not their preparation and manufacture into the gaudy or otherwise untasteful hat-gear give employment to many a needy hand, and add materially to the milliner's gains? Why is not their use for personal decoration, *à la sauvage*, as legitimate and defensible as their use for food, with the added advantage of being able to utilize decoratively a great many species otherwise of no commercial value? Why should we be anxious to preserve our birds? Are they, when alive, of any practical value, or do they contribute in any way to our pleasure or well-being?

In regard to the first of these inquiries, the men and boys really get little more in the average for the raw material than enough to pay them for their powder and shot: it is the 'sport' that

affords them their real reward. The middle-men, — the skinners and manufacturers, — and an occasional professional gunner, make most of the profit, which must be more or less considerable to induce them to run the gauntlet of public opinion and the occasional risks of prosecution in their illegal enterprises. The milliner shares, of course, in the profits of the trade in such supplies; but, if birds were not used to such an extent, other and more fitting decorations would be adopted in their place, and their business would not suffer.

Respecting the latter inquiries, birds may be said to have a practical value of high importance and an aesthetic value not easily overestimated. Birds in general are the friends of man, and it is doubtful whether a single species can be named which is not more beneficial than harmful. The great mass of our smaller birds, numbering hundreds of species, are the natural checks upon the undue multiplication of insect-pests. Many of them rarely make use of other than insect-food, while all, as shown by scientific investigations already made, depend largely or wholly, during considerable periods of the year, upon an insect-diet. Even the ill-reputed hawks and owls prey upon field-mice, grasshoppers, and other noxious insects or vermin, some never molesting the farmer's poultry, and others only exceptionally. In the present general summary of the subject, it may be sufficient to say, that, while the beneficial qualities of birds vary widely with the species, none can be set down as proven to be unmitigatedly injurious. With the decrease of birds at any point is noted an increase of insects, especially of kinds injurious to agriculture. The relation of birds to agriculture has been studied as yet but imperfectly; but results could be cited which would go far to substantiate the above statement of their general utility. It is a matter for congratulation, that the investigation of the subject has now been systematically entered upon by the department of agriculture at Washington, under the supervision of experts especially fitted for the work.

Birds, considered aesthetically, are among the most graceful in movement and form, and the most beautiful and attractive in coloration, of nature's many gifts to man. Add to this their vivacity, their melodious voices and unceasing activity, — charms shared in only small degree by any other forms of life, — and can we well say that we are prepared to see them exterminated in behalf of fashion, or to gratify a depraved taste? Says a recent writer, "A garden without flowers, childhood without laughter, an orchard without blossoms, a sky without color, roses without perfume, are the analogues of a country without song-birds. And the United States are going straight and swift into that desert condition."

Indeed, as previously noted, there is already an encouraging recognition of that fact. Here and there bird-protective associations are being formed, and more care is taken to secure proper bird-protective legislation; but the public at large is still too apathetic, or too ignorant of the real state of the case, to insist upon, and support by proper public sentiment, the enforcement of legislative acts already on our statute-books. The American ornithologists' union has moved in the matter by the appointment of a large and active committee on bird-protection, which is at present bending its energies toward the diffusion of information among the people, in the hope of awakening a healthy sentiment on the subject, and is also working to secure not only more effective and intelligent legislation, but the proper enforcement of the laws enacted in behalf of birds. This, too, notwithstanding a recent writer in a popular magazine characterized ornithologists as being among the worst enemies birds have, and to whose egg-collecting and bird-stuffing propensities was principally attributed the woful decrease of our song-birds!

In England the same rage for hat decoration with dead birds has gone so far that anti-plumage-wearing societies have already been established by the more intelligent women of that country; and it has already been suggested, apparently independently of any similar action abroad, by ladies themselves, that the women of this country throw their influence in a similar way against the barbarous custom of using birds for personal decorations. Much could doubtless be done in behalf of the birds in this way; for, once let it come to be considered vulgar and in 'bad form' to thus decorate one's person, and the power of fashion would be a mighty weapon in defence of the birds.

Of all the means that may be devised for checking the present wholesale bird-slaughter, the awakening of a proper public sentiment cannot fail of being the most powerful. Without this, all other means would prove, to a great degree, ineffectual. Laws, however good, cannot be enforced unless backed by public opinion. To arouse this, it seems only necessary to enlighten the community respecting the nature, the enormity, and the leading cause of this great evil. The following articles are intended to amplify and elaborate points merely hinted at in this general statement — to give a bill of particulars for certain special localities, and of certain phases, of this great slaughter of the innocents, and to show the methods adopted by some of the miscreants engaged in it.

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