

HUMAN PREDATION ON BIRDS

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The term "human predation" is used in this paper to cover all the ways in which the human race has made use of birds for its own advantage or gratification. While obviously it is not possible in a few pages to discuss every aspect of an activity that is almost co-eval with the human race, the main forms it has taken will be described.

We are told that when man still retained his pristine sinlessness in the days before Satan corrupted Eve, all created things lived in amity, and only after the Fall did strife and predation between one kind and another begin. Indeed, a case might be made from these circumstances for the *prima facie* sinfulness of man's exploitation of the feathered creation. But this is not an aspect that will be dealt with here, and moral judgments will not be passed.

Nor is it proposed to discuss the secondary effects, important though they are, of other human activities such as cultivation and clearing and the introduction of predatory animals, such as cat and fox, that have eliminated bird populations by rendering the environment unsuitable.⁽¹⁾ The subject for discussion is simply the deliberate destruction or capture of birds by man.

Human predation has taken, broadly, seven forms:

1. "Subsistence" killing for food.
2. Killing for ornament and dress.
3. Killing for commercial gain.
4. Killing for sport.
5. Collecting for scientific or pseudo-scientific purposes.
6. Killing in "self defence."
7. Capture and confinement for the pleasure of man.

These forms will be briefly examined. Obviously each does not exist in isolation; the various forms overlap where the motives are various, as they must be. The hunter seeking his dinner, unless very hungry indeed, probably enjoyed the sport of the chase, and perhaps even looked forward to cutting a

dash with the ladies when he had decorated himself with the plumes of his bag; but his prime motive was a reasonable wish not to starve, a will to subsist. In the same way, the motive of the modern plume-hunter was commercial gain, not personal adornment. Each form of predation must be classified according to the principal motive that prompts it.

1. "SUBSISTENCE" KILLING FOR FOOD

This form of predation has found a place in all primitive economies, but essentially ends with the domestication of animals and the cultivation of plants. However, even in modern times, civilised man has been occasionally compelled to revert to the habits of his ancestors under the pressure of an emergency.⁽²⁾ He too must sometimes kill to eat.

Primitive man, even with his own life at stake, was an inefficient predator by modern standards. The number of birds that he killed was limited not only by the finite capacity of his stomach, but also by the crudity of his weapons. Arrows, clubs, snares, or just the bare hands⁽³⁾, were incapable of making great inroads on bird populations; and in any case, it was no part of the savage's aim to exhaust his supply.⁽⁴⁾

As men became herdsmen and cultivators the need to hunt for food became less. At about this stage, it is probable that the domes-

(2) *Pterodroma solandri* was given its name "Bird of Providence" . . . "by the inhabitants of Norfolk Island in the last decade of the eighteenth century, when they ran out of supplies because bad weather prevented ships from visiting the islands regularly. Had it not been for this bird they would have faced death from starvation. From April to July 1790, more than 170,000 were taken, and each year large numbers were destroyed until the species was exterminated on that island."—W. R. B. Oliver, 1955, "New Zealand Birds" (2nd ed.), p. 161. Also Hindwood, *Emu*, XL, pp. 41-2.

(3) The Australian aborigines' method of taking ducks by swimming underneath them and seizing their feet in the hand is well known.

(4) Wing, Leonard, 1956 (*Natural History of Birds*, Ronald Press, New York, p. 411), considers the Mōa as a possible exception. Buller, W. L. (*A History of the Birds of New Zealand*, 1888, Vol. 1, pp. xviii-xxv) quotes the views of various authorities, some of whom consider that the Mōa became extinct before the evolution of man, and others that it was still alive within the memories of Maoris to whom the white settlers spoke.

tication of the chicken, the turkey, and the duck occurred, and the killing of wild birds became more sport than necessity, and perhaps their feathers were sought for adornment as much as their flesh for food.

2. KILLING FOR ORNAMENT OR DRESS

Man has long believed that fine feathers make fine birds, and the fashion of feather adornment must be as old as human vanity. The Australian aborigine, gumming feathers to his person with mud and blood, shares a taste and a faith with the modern woman wearing a feather hat. The beauty of birds' plumage, appealing to pride and fashion, has been the cause of widespread predation on birds; it has also worked the other way, and brought about a degree of protection. The Aztecs furnish an interesting example of both aspects. Mantles of feather-work were greatly prized in ancient Mexico, and were presented by the sovereign as a mark of honor to the deserving. In fact, feathers were actually used in the payment of taxes⁽⁵⁾; and the plumes of the royal Quetzal were reserved for the use of the king himself, thus protecting the bird from the destroying hands of the common people. Much the same effects followed the practice of the North American Indian who wore the feathers of the eagle, but only as a mark of rank or prowess. The natives of New Guinea decorated themselves with the plumes of Birds of Paradise, the Zulus with ostrich feathers, and the rich yellow of *Drepanis pacifica* was transferred to the robes of the chiefs of the Sandwich islands, and indeed almost led to the extinction of the species.⁽⁶⁾

All these examples, however, are drawn from savage or semi-civilised peoples, and it may be assumed that their predation was proportionate to the inadequacy of their means of taking the birds which bore the coveted plumes—that is to say, small—except perhaps in the rare type of case just mentioned. Predation on the grand scale, preda-

tion that regularly led to the point of extinction of the prey, did not occur until the advent of modern commercial enterprise. The demand for feathers for adornment, more or less haphazardly satisfied by the savage, was met with the efficiency expected of big business, for big business the feather trade quickly became. The appetite grew by what it fed on, until at last its predations reached a scale and character beyond the human capacity for toleration, and the feather trade was suppressed.

The need for food and the desire for adornment have provided a livelihood for large sections of all communities, and man has preyed on birds for many hundreds of years. At the time of the Roman Empire, the rich feasted on peacocks, flamingoes, and cranes. Later, the swan was regarded as a royal dish. Such delicacies being confined to the rich, it may be supposed that good round sums were paid for their procurement. Money was to be made out of trading in birds.

But, as pointed out above, the puny predations of the past were completely excelled by the efficiency and thoroughness of modern methods. With refining of the ancient need for food into luxury and the expansion of the simple desire for adornment into a fashionable mass market, the human predators created and exploited the opportunity for their own enrichment at the expense of many species of bird life.

3. KILLING FOR COMMERCIAL GAIN

It is not possible within the limits of a short paper to survey the whole scope of the food and feather trades. A few examples of their operations and effects must suffice, and the reader who wants more can find them by looking up the references. Naturally the birds exploited were the ornamental and the delicious, and, in a few cases, the useful. Wing⁽⁷⁾ estimates that since the Industrial Revolution "sixty or more island forms have become extinct at the hands of man throughout the world."

One notorious example is the Gare-fowl, or Great Auk (*Alca impennis*), whose memory is kept alive in the name of the journal of the American Ornithologists' Union, "The

(5) Prescott, *The Conquest of Mexico*, Routledge, 1893, p. 21 and note 26. A tribute of "8,000 handfuls of rich scarlet feathers" is referred to. See also "The Tavau or Coll Feather Currency of Santa Cruz Is." E. R. Waite (Rec. S. Aust. Mus. 2, iii, p. 219). Feathers of a scarlet honeyeater (*Myzomela* sp.) used.

(6) Alfred Newton, 1896, *A Dictionary of Birds*, pp. 166-7, and also *P.Z.S.*, 1893, p. 690.

(7) Op. cit., p. 418.

Auk." It was abundant in Newfoundland waters, but English and French ships for long were in the habit of sparing the expense of provisioning at home by slaughtering great numbers of Auks.⁽⁸⁾ "The ruthless trade in its eggs and skins"⁽⁹⁾ compounded the destruction wrought by the sailors, and the last "survivors of the species were caught and killed by expeditions expressly organised with the view of supplying the demands of caterers to the various museums of Europe."⁽¹⁰⁾ Early in the nineteenth century the Great Auk had vanished from the face of the earth.

The fate of the Passenger Pigeon (*Ectopistes migratorius*) is too well known to need recalling in detail. Two hundred years ago its reported numbers tax the power of belief. Alexander Wilson estimated a single flock to consist of 2,230,000,000 birds⁽¹¹⁾ and Stevens asserts that a single nesting area covered 98 square miles.⁽¹²⁾ Numerous flocks were to be found over much of the North American continent. The last known individual of this almost incredible multitude died in the Cincinnati Zoo in 1914.

Human predation is the only cause that can be assigned for its extinction. It has been estimated that 10,000,000 birds per year were marketed from 1866 to 1876. Only those actually marketed are included in this figure. The total annual rate of destruction was much higher; most of the birds taken were breeding birds, for the trappers found them easier to trap at the nest⁽¹³⁾, and so the nestlings perished as well.⁽¹⁴⁾

The hungry and impoverished have often relied on food from the skies to relieve their pangs, and innumerable birds have been killed for food since the Israelites fed on quails in the wilderness⁽¹⁵⁾. Mediterranean peoples, particularly the Italians and the Maltese, have long been and still are bird-catchers and bird-eaters. Vast numbers of small birds

have been taken in nets permanently erected along the migration flyways⁽¹⁶⁾. A single net might be half a mile long, and the catch for a season (2½ months) would amount to perhaps 15,000 birds.⁽¹⁷⁾ In October, 1890, 423,000 birds passed through the customs at Brescia. They were mostly larks, pipits, finches, quails, and even swallows⁽¹⁸⁾; most were valuable to agriculture, but all were acceptable to the food markets of the European capitals from Moscow to London, and all could command a price that was profitable to their captors.⁽¹⁹⁾ In America, ducks were much in demand, and an interesting glimpse of the methods to procure them is given by J. G. Millais. Referring to the American Wigeon or "Baldpate" he writes: "In winter its favorite resorts are the rice-fields of the south, and wild celery beds of the Chesapeake country, where thousands are annually slaughtered by men in 'sink boats' who shoot for the markets. The work of these gunners is most unsportsmanlike, but effective in its destruction. By using a naphtha lamp with a brilliant reflector behind it, the dazed ducks come swimming up alongside, and the shooter can frequently kill twenty or thirty birds at the single discharge of a shoulder gun."⁽²⁰⁾

Closer to home there is the trade in Mutton Birds (*Puffinus tenuirostris*). In earlier days taken for their feathers⁽²¹⁾, as well as robbed of their eggs⁽²²⁾, they are now the raw material of a canning industry centred on Lady Barron and neighboring Bass Strait islands, as all who enjoy "squab in aspic" doubtless know. In the first decade of this century

(16) One of the ways in which birds were enticed into the nets was by the use of live decoys in cages. The decoys were considered more effective if sightless; therefore they were blinded with red-hot wire.—International Convention for the Protection of Birds, 1902, Historical Sketch, p. 91 (publication of the Royal Hungarian Minister of Agriculture, Budapest, 1907.)

(17) Ibid. p. 92. See also D. A. Bannerman, 1953, "The Birds of the British Isles," I. p. 230, and II, p. 35.

(18) 14,000 swallows were taken in eight days at Montegrado, *ibid.* p. 21. For a description of the taking of migrating wood-pigeons by Basques, see D. and E. Lack, 95, pp. 282-3.

(19) Mediterranean peoples seem to be omnivorous where birds are concerned. As shown above, swallows, larks, and robins are sought after; and the Marsh Harrier (*Circus aeruginosus*) is relished by the Maltese. See Bannerman, 1956, *op. cit.*, V, p. 176.

(20) Natural History of the British surface-feeding Ducks, 1902, pp. 55-6.

(21) See below.

(22) Emu, 1913, XII, pp. 271-4.

(8) Newton, *op. cit.*, pp. 220-1.

(9) Newton, 1896, *op. cit.*, pp. 220-1.

(10) *Ibid.* p. 306; see also p. 308 for select bibliography of the Auk and its extermination.

(11) Wing, *op. cit.*, p. 256; Newton, *op. cit.*, p. 696; Smithsonian Report of 1911, pp. 407-424.

(12) Lydekker's Royal Natural History, 1895, Vol. VIII, p. 374-5.

(13) Live pigeons were often used as decoys; hence "stool pigeon."

(14) Emu, 1913, XIII, 51-53.

(15) Numbers, XI, 31-34.

"about 600,000"⁽²³⁾ young birds were taken each year for food. The present destruction is less—and so are the Mutton Birds. Whether they will follow the Auk and the Passenger Pigeon remains to be seen.

At the present time, the status of the Australian Gannet (*Sula serrator*) has caused concern.⁽²⁴⁾ These birds, which nest on Cat Island, are preyed on by fishermen, who use them for crayfish bait. In 1893, 2,400 to 2,600 gannets nested on Cat Island; in 1953, some 50 pairs nested, but every chick was slaughtered⁽²⁵⁾ and further predation was scarcely worth while. It may be added that a warden is now posted on the island during the breeding season, and the gannet population is slowly recovering.

Probably the most extensive predation ever practised on birds by man, and the most profitable, was caused by the irresistible edicts of a fashion which decreed that the well-dressed woman should wear feathers. It is doubtful if those who created the fashion made the first move; a material has to be available before it can be used. It is more likely that the designers were assured by the pioneers of the plumage trade that feathers were to be had in quantity before they committed themselves to the new look in feathers.

That the feather traders played their part on the grand scale may be shown by a few figures taken almost at random from the many that may be consulted. On one day in October, 1913, 1,174 "lots" were offered at auction in London. Some idea of what comprised a lot may be gained from the details given concerning 368 lots which were withdrawn: ". . . nearly 90,000 skins, and, in addition, 2,494 oz. of egret plumes, representing 14,946 birds." Among others, there were "34,000 wing and tail feathers of the hawk, 22,000 skins of kingfishers, 3,000 skins of Golden and other pheasants, 3,000 skins of terns, 1,300 skins of Birds of Paradise . . . and many others."⁽²⁶⁾ Australia alone imported £92,000 worth of plumes in 1912. This is business of a magnitude that anyone might envy.

As was to be expected in a commercial enterprise of this size only the most efficient methods of collecting the plumes were employed. Everyone knows that birds wear their finest plumage in the breeding season, and no feather hunter could afford to miss the opportunity when the plumes were not only at their best, but also easiest to obtain. Nesting birds were destroyed (the young were usually left to starve), and plumes were even torn from the living.⁽²⁷⁾ "In Venezuela alone, in 1898, no fewer than 1,538,738 White Herons were killed."⁽²⁸⁾

J. Lort Stokes describes the harvest of Mutton Bird feathers in Bass Strait. The hunters "build a hedge a little above the beach, sometimes half a mile in length . . . when the birds are about to put to sea, the men station themselves at the extremities, and their prey, not being able to take flight off the ground, run down towards the water until obstructed by the hedge, when they are driven towards the centre, where a hole about five feet deep is prepared to receive them; in this they effectually smother each other . . . the feathers . . . are taken to Launceston for sale. The feathers of twenty birds weigh one pound . . . I saw . . . thirty bags each weighing nearly thirty pounds—the spoil of 18,000 birds!"⁽²⁹⁾

The plume hunters followed their calling wherever birds abounded; Australia, India, China, New Guinea, North America (especially Florida), Venezuela, the Mediterranean countries, the British Isles—all were their hunting grounds; and the feather trade flourished unchecked until the U.S.A. introduced the Tariff Act of 1913. Great Britain was considering similar measures, but passed no legislation until the Importation of Plumage (Prohibition) Act became law in 1921. With the markets of New York and London closed the plumage trade came to an end, having shown the lengths to which the human predation of birds could go if properly stimulated by the profit motive.

4. KILLING FOR SPORT

Consistent with the anthropocentric point of view that everything on the earth is pro-

(23) Lucas & Lesouef, 1911, "The Birds of Australia," p. 55.

(24) Warham, John, 1953, *Emu*, LVIII, pp. 339-40.

(25) *Ibid.*

(26) *Emu*, 1914, XIV, pp. 60-2.

(27) *Ibid.*, 1912, XII, p. 55.

(28) *Ibid.*, 1910, X, pp. 45-8.

(29) J. Lort Stokes, 1846, "Discoveries in Australia," II, p. 452.

vided for the delectation of the human race, sport has been the reason for much human predation on birds: that is to say, where fun, amusement, or diversion is the essential motive, even though the spoils may incidentally adorn the victor's person, fill his cooking pot, or enrich his pocket.

Sport with birds is of great antiquity. There is a fresco in the British Museum of an ancient Egyptian indulging his taste for it in the marshes of the Nile. The presence of his wife and daughter indicate that he was diverting himself, and not just killing for subsistence. The man stands in the bow of his boat, taking ducks and egrets. He knocks them down with a stick as they fly out of the thick papyrus. His skill or his luck must have been considerable, as he holds two dead ducks in his left hand and there are others in the boat.⁽³⁰⁾

As with food and feathers, the scale of sporting predation was relatively small until modern times introduced the highly effective shotgun for procuring and the refrigerator for preserving game.⁽³¹⁾

One of the most widespread of bird sports, extending over Europe, Asia and Africa, was falconry. It scarcely comes within the limits of this paper, as it involved no disturbance of the normal order of nature beyond the participation of man in the natural preying of hawks on their usual victims. The skill and patience needed in the training of a hawk are of the highest order⁽³²⁾, and falconry caused the introduction of one of the earliest known protection laws⁽³³⁾; in the reign of Henry VII the killing of herons by the subjects of the King of England was unlawful except by falcon or longbow.⁽³⁴⁾

Other sports have called for less skill and greater indifference to the victim. "Goose-pulling" was one example. It appears to have

been evolved in the southern States of America.⁽³⁵⁾ For the diversion, fun or amusement of the participants, a goose was suspended by the feet (alive) from a cross-bar so that its head would hang nine or ten feet from the ground, while mounted men at full gallop attempted to pull off the goose's head. Anyone familiar with horsemanship must know that such a feat is not easily achieved, and no doubt the longer the goose kept its head the better the sport.⁽³⁵⁾

The shooting of game birds provides sport for thousands throughout the world, and their demands for guns, ammunition, and other equipment provide a living for other thousands. The birds they shoot each year must be numbered in millions, and the kill can only be regarded as a serious form of predation, and a disastrous one if no biological surplus exists.⁽³⁶⁾

The trap-shooting of pigeons was widely practised until recently, and the controversy over it is still fresh in the memory. It is less well-known, perhaps, that starlings also have been used as living targets by the gunclubs.⁽³⁷⁾ Like the casual week-end shooter, the organised gunners are apparently not always particular what they shoot. One of their officials won a place in the daily press some years ago with the advice, *inter alia*, "shoot anything, that's what we say, shoot anything,"⁽³⁸⁾ and this attitude, widely shared, has caused considerable predation.

In the name of sport some remarkable slaughter has been organised. "Of late years the artificial rearing and driving of birds for shooting purposes has been brought to great perfection. Pheasants, partridges, and grouse have not declined in popularity, and never will as long as they take people out into the open air; but now sportsmen are every year recognising the facility with which mallard may be reared artificially, and induced to fly in certain line over guns. I think that Sir Richard Graham, of Netherby, was the

(30) Cf. the ease with which birds could be killed on Lord Howe and Norfolk Islands in the early days. Hindwood, 1932, *Emu*, XXXII, pp. 22-3.

(31) Even without refrigeration, wounded birds will stay fresh. Liddell, Robert, 1954, "Aegean Greece," p. 179.

(32) Some idea of the value placed on trained falcons is given by Bannerman, *op. cit.*, V, p. 34: "We have it on the authority of Seton Gordon that in the reign of James II no less than £1,000 was given for a pair of falcons."

(33) [Wing, L., *Nat. Hist. of Birds*, p. 411.

(34) "Time" Magazine, Vol. XLIX, p. 22, March 10, 1947 (American ed.).

(35) Although goose-pulling reached the zenith of its popularity many years ago, it was revived in 1947. Public opinion had then turned against it. *Ibid.*

(36) Almost any figure compiled from reports of bags etc. is always far short of the actual total of birds destroyed. The number of mortally wounded cripples that are not retrieved has been variously estimated as from two to seven for every ten birds bagged. Wing, L., 1951, *Practice of Wildlife Conservation*, p. 266.

(37) Sharland & Hindwood, 1941, *Emu*, XL, p. 400.

(38) *Emu*, 1936, XXXV, p. 330.

first to successfully organise these big duck shoots, and he has certainly achieved great skill in placing the birds above the guns at a respectable elevation. Over two thousand mallard were killed at Netherby in two days during this autumn⁽³⁹⁾ and the Mackintosh at Moy has also killed as many as 900 in one day."⁽⁴⁰⁾

This is excellent sport, but for mere numbers is not really in the first rank. At the Marquis del Merito's Laguna de Medina, in Spain, twenty-two guns, shooting from 10 a.m. to 3 p.m., killed 4,800 coots.⁽⁴¹⁾ This is a world's record, as it deserves to be.

5. COLLECTING FOR SCIENTIFIC OR PSEUDO-SCIENTIFIC PURPOSES

Among the many motives for human predation on birds, the rage for "collecting" must take its place. Most sane people to-day are prepared to accept the acquisition by scientific bodies of a reasonable number of study specimens; although enlightened opinion must deplore the avidity for collecting that connived at the extinction of the Auk.⁽⁴²⁾ But pseudo-scientific and private collecting, with either profit or self-gratification as the motive, has certainly caused as much destruction of bird life as proper scientific collecting in the pursuit of knowledge.

The predations of the great ornithologists of another era were substantial. Usually men of means, they could afford to employ collectors whose activities spanned months and even years in time and thousands of miles and whole continents in space. John Gilbert ranged Australia for Gould, Rogers for Mathews, and S. W. Jackson spent months in the field for H. L. White,⁽⁴³⁾ as his journals in *The Emu* testify.⁽⁴⁴⁾ These men and their like killed many birds for their employers whose justification lies in their literature and

whose collections were made available to posterity by bequest to public institutions.⁽⁴⁵⁾

The scale of operation of private collectors is impossible to assess accurately, or indeed at all. The very fact of their collections being private screens their activity from the public eye. It may be assumed, however, that most private collecting is now confined to eggs; and eggging, according to its devotees, can scarcely be classed as predation as all the original owner has to do to restore the status quo is to lay some more. Whether this can go on indefinitely is open to doubt.

An American authority on conservation sums up the situation as follows: "Few egg collections are made any more for scientific purposes; the real motive is the desire for possession, just as the stamp collector desires rare stamps. The pursuit of rarities has placed a fictitious value on the eggs of some birds, and 'postage stamp' egg collecting has been especially hard, along with other pressures, on the ibis, condor, kites, falcons and limpkins."⁽⁴⁶⁾ After the proper allowances are made for local conditions, not much can be added.

6. KILLING IN "SELF-DEFENCE"

Most of the forms of predation so far discussed have been controlled by Government ordinance or discountenanced by public opinion if they have not fallen into natural disuse. The unregulated killing of vast masses of birds is no longer tolerated by civilised peoples, although the noxious idiot with a gun is an all too common product of modern society.

However, extensive predation in the name of self-defence has occurred in the past and continues into the present. In the battle for survival man must defeat his enemies or succumb to them, and birds that destroy his crops and damage his flocks are his enemies. He regards them as vermin, often as outlaws with a price on their heads, and he destroys them in large numbers with trap and gun and poison. The innocent often suffer with the

(39) 1901.

(40) Millais, J. G., op. cit., p. 17.

(41) Sporting and Dramatic News, April 10, 1936.

(42) See above. A suggestion apparently begotten of similar motives has been heard recently to the effect that the South Australian haunts of the near-extinct Night Parrot (*Geopsittacus occidentalis*) should be fired in order that specimens for the benefit of posterity be obtained.

(43) White also employed F. W. Whitlock, J. P. Rogers, H. G. Barnard, and W. R. McLennan. Whittell, H. M. (1954), Lit. of Aust. Birds, p. 752.

(44) *Emu*, 1912, XII, pp. 65-104. This is a fascinating account of the life of a collector in the field.

(45) The American Museum of Nat. Hist. has more than 650,000 skins—Fifty Years Progress of American Ornithology, 1933 (pub. AOU). For comparison, it is interesting to observe that Australian museum collections average about 20,000 skins.

(46) Wing, 1, 1951, Prac. of Wildlife Cons., pp. 312-3.

guilty; poison is non-selective, and the gun is often used with neither discrimination nor knowledge. For example, all members of the hawk tribe have a bad reputation with the ignorant, and all are persecuted for the alleged misdeeds of the few; "any predator which might interfere with man is ruthlessly slaughtered, often without adequate enquiry."⁽⁴⁷⁾

It is said that ducks damage rice-fields, that galahs eat newly-sown wheat, that budgerigahs knock down standing crops, that crows pick out the eyes of sheep, and keas kill them, that eagles prey on lambs, that shags and pelicans steal fish, that starlings spoil fruit; therefore they should all be destroyed, and man preys on bird while edifying his conscience. It is out of place here to pass judgments; it is only necessary for the purposes of this paper to note the facts; and the fact here is that "self-defence" is the reason given for much human predation.

7. CAPTURE AND CONFINEMENT FOR THE PLEASURE OF MAN

The habit of keeping birds in cages dates from a remote period, but bird-keeping or aviculture,⁽⁴⁸⁾ as the term is now understood, for the sake of the pleasure the birds afford their owners and for studying their habits, has flourished only comparatively recently, that is to say, from the 16th century to the present day.⁽⁴⁹⁾ Aviculture is now linked across the world, and counts among its supporters many eminent men. To keep their cages full and the occupants fed new crafts have been developed and old ones modified. In Australia alone, and in one year (1958), 13,000,000 feet of wire, 58,372 square feet of galvanised iron, 79,248 square feet of sheet aluminium, and 1,773 gallons of paint were used in the construction of "budgie cages."⁽⁵⁰⁾ As these figures refer to only one aspect

of the cage-bird trade in only one country they would have to be multiplied a number of times if any idea of the magnitude of the industry on a world-wide basis is to be obtained. The total number of captive birds of all species defies accurate estimate.

Most aviary birds are bred in captivity, but many species need a periodic infusion of vigor from wild-caught stock.⁽⁵¹⁾ Consequently the bird-trapper, with the meat and feather trades closed to him, has little trouble in selling his catch to dealers, who re-sell to bird-keepers, or even direct to the bird-lovers themselves. The mortality rate of wild-caught birds is high,⁽⁵²⁾ but evidently there is enough profit in the survivors to compensate both trapper and dealer for those that die on their hands.

The trade in wild-caught cage-birds amounts to a substantial predation on birds by man, and affects most seriously those species that are rare and for that reason desirable, especially to the "postage stamp" type of collector; and unlike most of the forms of predation referred to in this paper it is not a thing of the past. Commercial trapping and dealing for commercial motives are with us here and now in the present.

CONCLUSION

The long story of man's predation on birds, told here briefly and incompletely, may fittingly be brought to a close with a quotation from a recent book by a very eminent ornithologist: "Vermin denotes a form of life which preys on other life, and is the animal counterpart of weeds . . . Surely man is both vermin and weed . . . 'So unwilling is man to face the fact that he himself is by far the most destructive creature on earth, that almost any other explanation, however fantastic, for the disappearance of that which he professes to wish to preserve is preferred to blaming himself'."⁽⁵³⁾

(47) Meinertzhagen, R., 1959, *Pirates and Predators*, p. 7.

Except the Wedge-tailed Eagle (*Aquila audax*) and the Goshawk (*Accipiter fasciatus*), all members of the hawk tribe are totally protected by law in South Australia.—Ed.

(48) Jean Delacour (*Avicult. Mag.*, 1953, LXIV, p. 56) uses the terms as synonyms.

(49) Seth-Smith, D., *Encyc. Brit.* (XI ed.), III p. 60.

(50) *The Bulletin*, June 10/1959, p. 32.

(51) Groen, H. D., 1958, *Avic. Mag.*, 64, p. 131. See also Duke of Bedford, 1954, *Parrots and Parrot-like Birds*, p. 32 and 37.

(52) It has been estimated at 75%.

(53) Meinertzhagen, R., *op. cit.*, pp. 5-6.