

THE BULLETIN

of the

UNITED STATES GOLF ASSOCIATION GREEN SECTION

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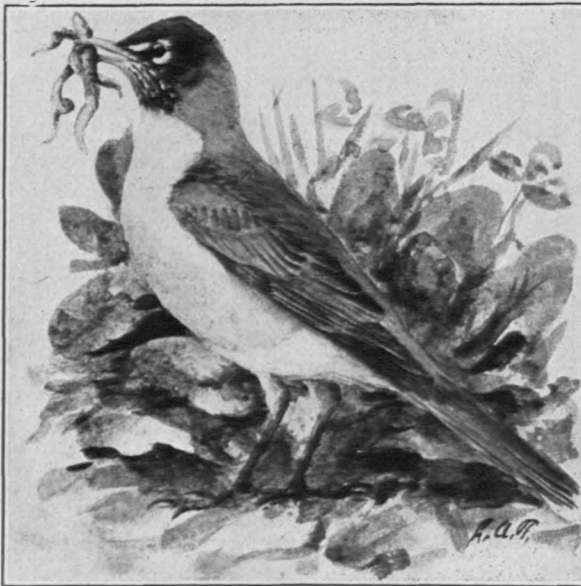
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Birds as an Adjunct to the Golf Course

In devoting this number of the Bulletin to the subject of attracting birds to golf course properties, the editors are prompted by the feeling that if added interest can be awakened in and added support given to the harboring of desirable birds on golf courses, the benefits to be derived therefrom should be far-reaching, affecting not only the greenkeeper and the golf club patron, but all who are in love with nature.

Any organization or publication seeking to improve playing conditions on golf courses is certain to recognize the value of birds. Even



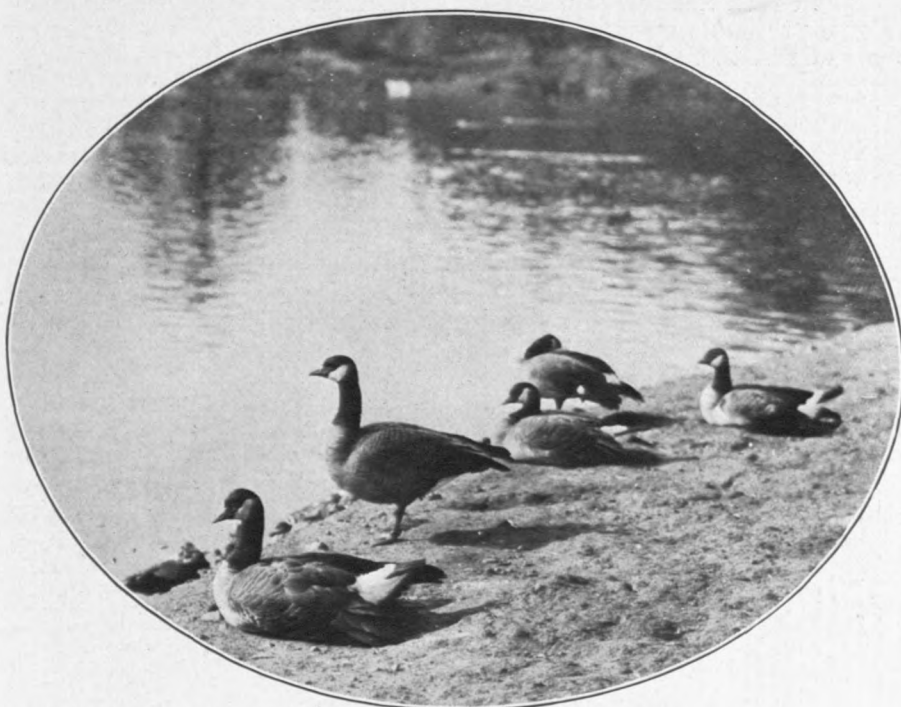
The robin is the best worm-killer of them all

consideration of the subject from the cold dollars-and-cents viewpoint (which is the viewpoint too many green committees are unfortunately forced to take) fully justifies the emphasis that is being given to bird protection on many golf courses. Each year the total expenditure made for poisons to control insect pests and for labor and chemicals for controlling weeds on the golf courses of the country is increasing. As the standards of turf are gradually raised it is indeed

likely that insect damage will become more noticed and objectionable. For the control of insects injurious to turf and other vegetation about the course, clubs may have to choose between such natural insect control agencies as birds and the much more expensive artificial control with chemical poisons. Undoubtedly the best solution will be a combination of both the natural and artificial remedies. To develop an effective insect-fighting and weed-fighting force by encouraging birds on a golf course requires but a slight addition to the yearly budget. It does, however, call for some little effort on the part of one or more club members who may take the leadership in aiding the birds by attending to the few details of providing the necessary encouragement and protection. It usually requires only a little missionary work on the part of a few bird lovers to obtain the cooperation and interest of the entire club membership to the extent of at least giving friendly consideration to the bird life on the club property and to encourage the caddies to have a similar respect.

In addition to their value as insect and weed seed destroyers, birds are an asset to any golf club in many ways, which need not be enumerated to any one interested in the out-of-doors. One of the ad-

vantages that devotees of the game proudly claim for golf when comparing it with the other great games played with balls, such as football, polo, baseball, or tennis, is that in playing golf the player is able to enjoy not only his game but at the same time leisurely to enjoy nature if he chooses. Most of the favorite courses or individual holes are favorites because of an intangible something that can not be expressed in yardage, turf, hazards, or other features that affect merely the playing of the game. They are undoubtedly favorites because of certain happy combinations of natural surroundings with fine playing conditions. One need only ask a golfer why he particularly likes such-and-such a course, or a certain hole on the course, to realize that his choice is influenced by factors that he finds difficult to explain. Undoubtedly the natural wild life plays an important



A visit from a few wild geese will give the old water hazard an entirely different aspect

part in much of this subconscious evaluation. Different players are influenced by different factors; but it is safe to say that a big majority are at some time influenced by the bird life. A large water hazard may be simply a large body of water with infinite possibilities for swallowing balls. That same hazard becomes quite a different body of water to most golfers when a flock of wild mallards uses it for a feeding place. The same may be said of the influence of other birds in other places around the course. On many courses the value of birds is appreciated, and they are constantly encouraged. On most courses they are practically ignored except for the individual admiration of the members. In a few cases they have been misunderstood and treated as pests. On some courses where grubs or worms are plentiful in the turf, birds may make objectionable holes in dig-

ging for these turf destroyers. Indiscriminately shooting the birds in such cases at best shows an absence of intelligent handling of the problem. On one well-known course last year a man was employed full time to walk around the course and shoot all birds on sight. Such ignorance in dealing with turf problems is fortunately becoming rare. It is now generally recognized that where birds are concentrating on greens and making objectionable holes they are doing the club a service in giving warning that grubs are becoming too numerous in that turf and that some measure should be taken against the grubs rather than the birds. There are of course a few exceptional cases where some birds may become nuisances in different ways, including their harm to desirable birds, which call for drastic measures to limit their numbers.

The Green Section has always been on record as an organization friendly to birds on golf courses. Throughout the back volumes of the Bulletin there have been repeated appeals to clubs to encourage



Bird houses are furnished by dealers in a variety of attractive designs

birds. A series of twelve articles, beginning in the first volume, written especially for the Bulletin by W. L. McAtee, who has charge of the division of food habits research in the United States Biological Survey, has undoubtedly served to stimulate much interest in the subject on golf courses. A large number of courses in different parts of the country are already well-established bird sanctuaries and, as a result, have become doubly interesting to many of the players. While anxious to help in every possible way the cause of wild life on courses, the Green Section of necessity must make the bird interest only one of its minor interests. It is indeed gratifying to learn that there has now been established an organization which makes the bird question on golf courses its prime interest. This is the Golf Club Bird Sanctuary Committee of the National Association of Audubon Societies. The committee, whose headquarters are at 1974 Broad-

way, New York City, consists of the following: T. Gilbert Pearson, president of the National Association of Audubon Societies, chairman; Eugene S. Wilson, vice-president of the American Telegraph and Telephone Company, secretary; Robert T. Jones, Jr.; Grantland Rice, sports writer; Bruce Barton, author; Frank M. Chapman, curator of birds at the American Museum of Natural History; and Arthur A. Allen, professor of ornithology at Cornell University.

This committee has adopted as its slogan "Every golf club a bird sanctuary," and has started its campaign by publishing a 64-page pamphlet entitled "Golf Clubs as Bird Sanctuaries," to which further reference is made by Dr. Arthur A. Allen in his article in this number of the Bulletin. Readers of the Bulletin are urged to obtain a copy of the pamphlet and give serious consideration to the bird sanctuary movement. The National Association of Audubon Societies will gladly aid in any way it can clubs seeking advice. Mr. Horace Mitchell, in charge of the game-breeding department of *Field and Stream* magazine, offers in this number of the Bulletin the aid of his organization also to clubs which are interested especially in the encouragement of game birds. Furthermore, the United States Biological Survey, Washington, D. C., is and always has been anxious to help those interested in birds. The names of dealers in devices for attracting birds and of dealers in wild duck and quail food plants can be obtained from the Biological Survey.

The following publications are available and will be of assistance to those wishing to obtain information on birds in relation to golf courses:

BOOKS, PAMPHLETS, AND ARTICLES ON BIRDS

PUBLISHED BY AND OBTAINABLE FROM THE UNITED STATES
DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

HOW TO ATTRACT BIRDS IN THE NORTHEASTERN UNITED STATES. States from Pennsylvania and New Jersey northward. Farmers' Bulletin 621.

HOW TO ATTRACT BIRDS IN THE NORTHWESTERN UNITED STATES. Oregon, Washington, Idaho, and western Montana. Farmers' Bulletin 760.

HOW TO ATTRACT BIRDS IN THE MIDDLE ATLANTIC STATES. North Carolina, Virginia, West Virginia, and Maryland. Farmers' Bulletin 844.

HOW TO ATTRACT BIRDS IN THE EAST CENTRAL STATES. States from Kentucky, Missouri, and eastern Kansas northward. Farmers' Bulletin 912.

COMMUNITY BIRD REFUGES. Of general application. Farmers' Bulletin 1239.

HOMES FOR BIRDS. Relates to bird houses. Farmers' Bulletin 1456.

ELEVEN IMPORTANT WILD-DUCK FOODS. Department Bulletin 205.

PROPAGATION OF WILD-DUCK FOODS. Department Bulletin 465.

PROPAGATION OF UPLAND GAME BIRDS. Contains a chapter on improving coverts for upland game birds. Farmers' Bulletin 1613.

GOURDS FOR BIRD HOUSES AND OTHER PURPOSES. Leaflet 36.

HOW TO MAKE A CAT TRAP. Leaflet 50.

SPARROW TRAPS. Leaflet 61.

PUBLISHED BY AND OBTAINABLE FROM NATIONAL ASSOCIATION OF
AUDUBON SOCIETIES, 1974 BROADWAY, NEW YORK CITY

PUTTING UP BIRD BOXES. B. S. Bowdish. Special Leaflet 18.

HOW TO ATTRACT AND PROTECT WILD BIRDS. Martin Hiesemann.

A LIST OF TREES, SHRUBS, VINES, AND HERBACEOUS PLANTS NATIVE TO NEW ENGLAND BEARING FRUIT OF SEEDS ATTRACTIVE TO BIRDS. F. H. Kennard.

ATTRACTING BIRDS ABOUT THE HOME. H. K. Job.

THE PROPAGATION OF WILD BIRDS. A manual of applied ornithology. H. K. Job.

GOLF CLUBS AS BIRD SANCTUARIES.

ARTICLES BY W. L. MCATEE, U. S. BIOLOGICAL SURVEY,
APPEARING IN PREVIOUS NUMBERS OF THE BULLETIN

ATTRACTING BIRDS TO GOLF COURSES. November, 1921, pages 228-231. At-

tractiveness of golf courses to birds noted and general suggestions given as to improving food and water supply and giving additional protection.

FRIENDLY BIRDS ON THE GOLF COURSE. August, 1922, pages 229-232. Brief accounts of the services of 9 kinds of birds in destroying insects injurious to golf courses.

SHRUBBERY ABOUT GOLF COURSES. December, 1922, pages 338-339. Suggestions as to the extent to which shrubbery can be used about golf courses and notes on the kinds most useful in providing food for birds.

USES OF EVERGREENS ON GOLF COURSES. May, 1923, page 138. Evergreens provide shelter and food for birds. Suggested uses for them on golf courses.

BIRDS OF THE GOLF COURSE, THE KILLDEER. May, 1926, pages 116-117. The killdeer destroys numerous pests of golf courses and should be encouraged whenever possible.

BIRDS OF THE GOLF COURSE, THE ROBIN. July, 1926, pages 162-163. The robin not only feeds extensively upon earthworms, but consumes many insects destructive to grasses.

BIRDS OF THE GOLF COURSE, THE FLICKER. September, 1926, pages 200-202. This bird excels as an ant-eater, but has other pests of the fairway and green on its dietary. Suggestions as to methods of attracting flickers.

BIRDS OF THE GOLF COURSE, THE KINGBIRD. December, 1926, pages 258-259. Attractive characteristic of this species and its valuable food habits commented upon.

BIRDS OF THE GOLF COURSE, THE CHIPPING SPARROW. March, 1927, pages 50-51. A seed-eating bird useful on golf courses; it feeds to a worth-while extent upon insects also.

GOLF CLUBS OWNING LAKES CAN AID WATERFOWL. September, 1927, page 172. Possibility of using water hazards and other bodies of water to attract wild fowl; sources of information mentioned.

BIRDS OF THE GOLF COURSE, THE HORNED LARK. November, 1928, pages 232-233. This hardy relative of the skylark prefers open grasslands like golf courses and is there a useful and charming visitor.

PREVENTING BIRDS FROM DAMAGING GREENS. September, 1929, pages 154-155. Birds digging holes in greens are searching for insects; if the latter are killed by direct insecticidal measures, excavating by birds will cease.

MISCELLANEOUS

WILD BIRD GUESTS. E. H. Baynes. E. P. Dutton & Co., 681 Fifth Ave., New York, N. Y. 1915.

HOW TO ATTRACT THE BIRDS. Neltje Blanchan. Doubleday, Page & Co., New York, N. Y. 1903.

PERMANENT BIRD HOUSES. Gladstone Califf. The Bruce Publishing Co., Milwaukee, Wis. 1925.

BIRD HOUSES AND NESTING BOXES. E. H. Forbush. Circular 47, Massachusetts State Board of Agriculture, Boston. 1915.

OUTDOOR BIRD STUDY (HOW TO ATTRACT BIRDS). E. H. Forbush. Circular 12, Massachusetts State Department of Agriculture, Boston. 1919.

HOW TO ATTRACT WILD BIRDS ABOUT THE HOME. N. M. Ladd. Greenwich Bird Protective Society, Greenwich, Conn. 1915.

HOW TO MAKE FRIENDS WITH BIRDS. N. M. Ladd. Doubleday, Page & Co., New York, N. Y. 1916.

FOOD FOR GAME BIRDS AND WILD DUCKS. C. S. Landis. The Shooters' Guide, Hercules Powder Co., Wilmington, Del. 1925.

OUR NATIVE BIRDS, HOW TO PROTECT THEM AND ATTRACT THEM TO OUR HOMES. D. Lange. Macmillan Co., New York, N. Y. 1899.

SANCTUARIES FOR BIRDS AND HOW TO MAKE THEM. H. J. Massingham. G. Bell and Sons, Ltd., London, England. 1924.

PRACTICAL METHODS FOR ATTRACTING WILD BIRDS. Eleanor Mellen. New England Nurseries Co., Bedford, Mass. 1915.

ATTRACTING BIRDS WITH FOOD AND WATER. R. O. Merriman. M. B. L. 20, Department of Interior, Ottawa, Canada. 1923.

HOW TO HAVE BIRD NEIGHBORS. S. Louise Patteson. D. C. Heath & Co., Boston. 1917.

BIRD HOUSES BOYS CAN BUILD. A. F. Siepert. Manual Arts Press, Peoria, Ill. 1916.

HAND CRAFT BIRD HOUSES. F. I. Solar. The Bruce Publishing Co., Milwaukee, Wis. 1923.

PLANTING FOR THE BIRDS. Dayton Stoner. Service Bul. IX (13), University of Iowa, Iowa City, Iowa. 1925.

METHODS OF ATTRACTING BIRDS. G. H. Trafton. Houghton, Mifflin & Co., New York, N. Y. 1910.

BIRD FRIENDS. G. H. Trafton. Houghton, Mifflin & Co., New York, N. Y. 1916.

PLANTING TO ATTRACT BIRDS. Munder-Thomsen Press, Baltimore. 1915.

Wild Life at Pine Valley

By Morris L. Parrish

As a rule few members of a golf club have learned to appreciate the beauty of the wild life that loves to linger in the seclusion of the out-of-bounds or water hazards that the players like to avoid. The appeal of native vegetation is perhaps felt by more individuals than is the appeal of wild bird life, since it seems to be the particular care of the feathered tribe to shun the visitations of the curious. Most golf courses, with their combination of wooded areas, open spaces, and water hazards, afford what is apparently an ideal setting for the attraction of a wide variety of bird life. I have come to take a particular interest in the native birds that visit or make their homes on the property of the Pine Valley Golf Club. Doubtless all of our



On the Pine Valley golf course. Here the combination of tall trees, dense underbrush, open spaces, and abundance of water provides an ideal natural setting for a bird sanctuary

players are familiar with the robins that stalk around over putting greens and fairways in their search for earthworms, or the noisy and conspicuous blue jay, or the crows that occasionally drop down to forage on the turf, or the flocks of purple martins that fly into and around the box near the fourth hole. But how many of them are aware that within the confines of our course may also be found the catbird, the brown thrasher, song sparrows, chewinks, crested flycatchers, the tufted titmouse, wrens, kingfishers, buzzards, and hawks? Bluebirds have this year made their reappearance for the first time since they were driven out by the starlings several years ago. There are also a few quail. On our water hazards there are swans and mallard ducks which breed annually, and Canadian geese. Certainly a greater abundance and variety of this wild life would make its home with us were efforts made to provide food for the birds, especially over the winter, and to establish a bird sanctuary.

There are a number of cottages built on or adjacent to the golf course, and most of these have martin houses. There are also other bird houses near the cottages, but none in the distant parts of the grounds.

The quantities of insects and weed seeds disposed of by birds on a golf course is not appreciated by many, and greenkeepers, for their own good, would do well to harbor these beneficial and interesting creatures.

With the desirable birds there are, of course, also those that are not wanted, particularly the starlings and English sparrows. These I endeavor to destroy as much as possible around my own residence on the course, where I live the year round. This season at my place we were entirely free of starlings, my gardener having shot them during the winter whenever they appeared, and this fall, after the departure of the martins he will again shoot them should they come. The effect of shooting upon the abundance of English sparrows, however, seems to be wholly negative, as they quickly reappear in as great numbers as ever. There are a number of evergreen trees near our club house and the fifth tee, where the sparrows gather in large numbers. I arranged with a company which specializes in exterminating rats and other vermin with poison gas, to come down and try to rid this grove of evergreens of the sparrows. We selected a night in winter and had the club house vacated for the occasion; the men were on hand with their apparatus, but not a sparrow could be found in the neighborhood; this happened on two occasions.

In concluding, I want to say that if golf clubs wish to attract desirable birds to their golf courses, and place martin houses and other bird boxes around for that purpose, a certain amount of attention should be given to keep sparrows and starlings from inhabiting them.

The Golf Club as a Bird Sanctuary

By Arthur A. Allen

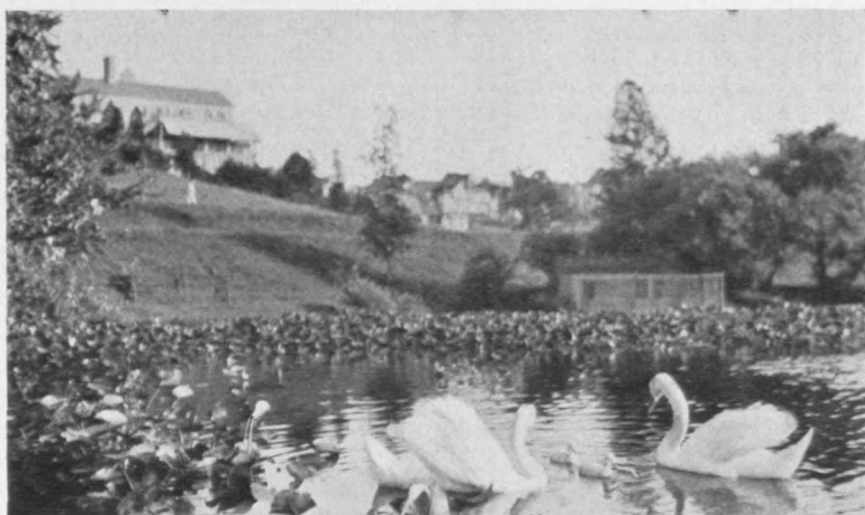
National Association of Audubon Societies

The majority of golfers may not realize that their clubs are ideally situated for giving sanctuary to birds without the slightest inconvenience to the game. It is a mistaken notion that a bird sanctuary must be a large area covered with a tangle of bushes and vines—a real jungle. The places in this country which are richest in bird life are those that combine open areas with clumps of shrubbery or single bushes. The edges of woodlands shelter far more birds than the center of the woods, and pasture lots dotted with thorn apples, dogwoods, and mulberries support still greater numbers. The golf club that has a small wood lot or group of trees where elderberries and dogwoods are encouraged to grow, or permits a few thorn apples or flowering crabs to remain at appropriate places, or has a few mulberry or hackberry trees about the borders, can be an ideal bird sanctuary provided there is water within flying distance for the birds and either dead trees or bird houses for species of birds that naturally nest in cavities. Clubs lacking in any of these features can, with comparatively little expense, provide substitutes that will be equally attractive, and thus in a fairly short time build up a bird population that rivals that of any bird sanctuary in the country.

There are many kinds of birds that frequent golf courses. Some range from coast to coast and from Maine to Florida. Others are

restricted to the East or West or to the North or South. One will not see ground doves and mockingbirds on our northern courses, nor bobolinks and cardinals in California, nor lark sparrows and dickcissels in New England; but everywhere there are robins and bluebirds, meadowlarks and horned larks, vesper and savanna sparrows, mourning doves and killdeers. They are not always identically the same varieties, but to all intents and purposes they are the same, pleasing our eyes with their grace and beauty and cheering our souls with their melodies. The methods which one would use in New York or New England to increase their numbers are the same as he would use in Florida or in California, depending on local conditions of food, water, and shelter.

Some species find food on the green and nesting places in the rough—open-country birds, like the killdeers, larks, and vesper sparrows. To them the abundant insect life or weed seeds provide sufficient food, and the tangled grass of the rough safe nesting places



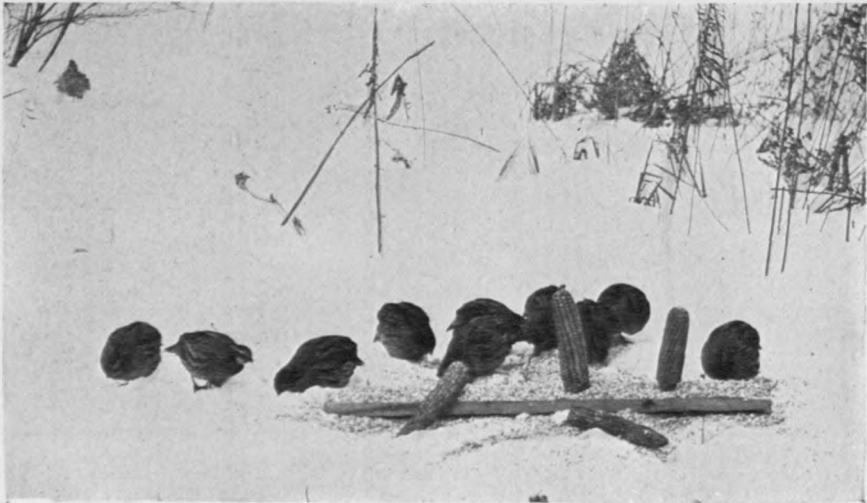
This water hazard at the Scarsdale Golf Club, Hartsdale, N. Y., has been transformed into a beauty spot by the use of aquatic plants and a family of swans

if enemies are not too numerous. Little has to be done to increase their numbers except to give them protection from careless caddies and careless workmen when cutting the areas around their nests. The addition of drinking and bathing places to those links which have no water hazards will serve to increase the numbers of birds.

Another group of birds find much of their food on or over the green, but depend for nesting sites upon trees, bushes, or bird houses. This group includes such familiar birds as the robin, the bluebird, the grackle, the flicker, the purple martin, the tree swallow, and the kingbird, which are so often seen about the trees. It should also include the cardinals and mockingbirds in the South, the catbirds and thrashers in the North, and the blue jays, the thrushes, the orioles, the wrens, the chickadees, the woodpeckers, and many others if shrubbery is provided about the club house or the outer borders of the rough. These birds, numbering among them some of our most

attractive song birds, can be very materially increased by a well-defined feeding and planting plan which will provide them with food and nesting places. The erecting of nesting boxes for the hole-nesting species, and the addition of bathing and drinking places, are necessary on many golf courses. The creation of a feeling of security over all the course by decreasing the natural enemies of birds, especially cats, and forbidding all guns and sling shots, is highly desirable. It is remarkable what a few Audubon bird-sanctuary signs, to which I shall allude later, will do toward creating the very desirable atmosphere. The signs not only encourage greater protection of birds but also induce greater respect for club property from neighbors and from the caddies.

During the winter months, when bird food is naturally scarce, some clubs make a practice of regularly feeding the winter birds. Those like the woodpeckers, nuthatches, chickadees, and creepers, that naturally feed on hibernating insects, take very kindly to beef suet. Those like the song sparrows, tree sparrows, and juncos, that usually feed on weed seeds, are provided with bread or chick feed and sunflower seed. Those like the robins and waxwings, that depend



The quail is a ground feeder, and when the deep snow comes he huddles together with his friends and waits for it to melt, often starving to death. Winter feeding is sometimes absolutely necessary to preserve quails on a golf course

on wild fruit for a living during the winter, are given apples or raisins until the thorn apples, crabs, and mountain ash trees come into bearing.

The Golf Club Bird-Sanctuary Committee of the National Association of Audubon Societies has just published a 64-page, beautifully illustrated booklet entitled "Golf Clubs as Bird Sanctuaries" to assist clubs in attracting and holding desirable wild birds. The booklet will be sent gratis to officers of golf clubs upon request sent to the National Association of Audubon Societies, 1974 Broadway, New York City. The benefits to be derived from birds by golf clubs are pointed out in the booklet by Mr. W. L. McAtee, of the United States Biological Survey. The booklet also shows how many of these beautiful and valuable birds can be materially increased in number by

the proper placing of nesting boxes, the planting of fruit-bearing trees and shrubs, or the addition of bird baths where other water is not available. The suggestion is made at the end of the booklet that each golf club appoint a bird-sanctuary committee of its own to further the project of making the golf course more attractive to birds, and that such committees get in touch with the National Association of Audubon societies.

Dealers in bird-attracting devices, and nurserymen who can supply stock of trees and shrubs attractive to birds, have been asked to make special prices to golf clubs, and a list of these dealers can likewise be secured from the National Association of Audubon Societies.



Flickers are very desirable birds on golf courses because of their fondness for ants. Their natural abode is in the hollow of dead trees. Where these have been removed, pieces of hollow trunks, fitted with top and bottom, fastened to poles or trees, will serve at little expense for their shelter and the rearing of their young

The Association has issued also an attractive poster on heavy cardboard, 14 by 22 inches in size, entitled "Build Bird Houses for These Valuable Birds;" this is available to golf clubs for their bulletin boards or caddie houses. The poster shows in color six of the more attractive birds that can be increased in number about golf clubs by the proper placing of nesting boxes. Directions for building bird houses, and photographs of houses actually in use by birds, add to the value and usefulness of the card.

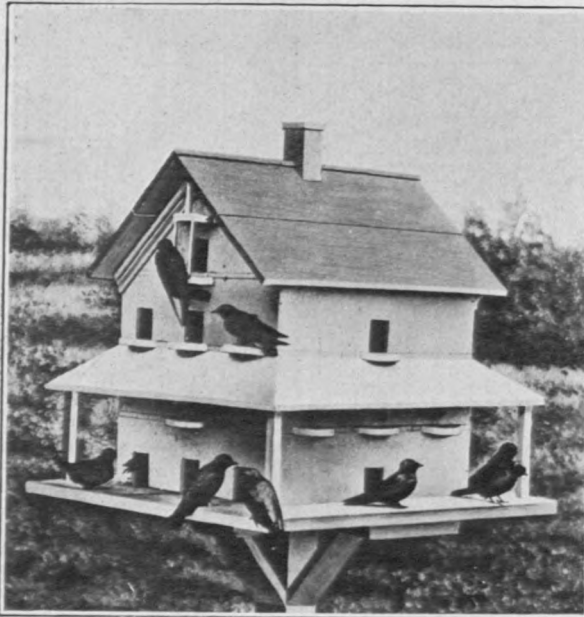
The Golf Club Bird-Sanctuary Committee of the National Association of Audubon Societies announces that while its project has been inaugurated this year in the State of New York only, for the sake of convenience, its assistance and cooperation are offered to clubs anywhere in the United States and Canada.

Golf Courses as Bird Havens, and Their Improvement for This Purpose

By W. L. McAtee

United States Biological Survey

There are many community golf courses, and most of those established by clubs are so surrounded by residences of members as to become virtually community institutions. Golfers as a class are broadly interested in the out-of-doors, including its animal inhabitants, and most of them no doubt will be glad to cooperate in the preservation, encouragement, and increase of useful birds. In fact, considering the well-known utility of birds in destroying insect and other pests, golf clubs will only be consulting their own interests in preserving and propagating these natural enemies of the foes of their greens and fairways.



These beautiful and beneficial purple martins are quite at home in their new house

Golf courses, without special modification, present several features that are attractive to birds. The broad expanses of short grass on the fairways furnish excellent feeding grounds for robins, meadowlarks, starlings, flickers, and killdeers. The longer grasses and weeds of the rough, and scattered clumps of trees and shrubbery open to full light, support an abundant insect population, an important source of food for our feathered friends. Many birds find nesting sites also in the arborescent growths present and sally forth for food

over the grassed areas, where they are often joined by numbers of those aerial feeders, the swallows and swifts, which find on these unobstructed reaches happy hunting grounds.

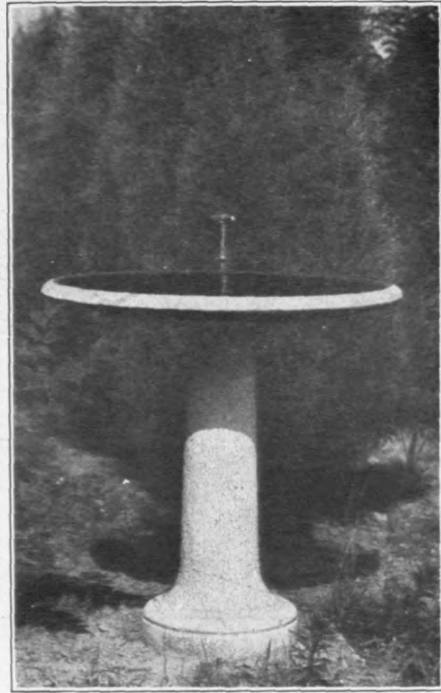
Such are the impressions recalled of a season's observations on a golf course well situated for birds. There are courses not so fortunate, but all have the fundamentals of valuable bird refuges. Protected to a considerable extent from trespass, and relatively free from the natural enemies of birds, golf courses already have much of the safety required for sanctuaries. Birds promptly respond to protection; but it should be as complete as possible. So far as food is concerned, insects are plentiful on most golf courses, but it would help the birds and ornament the courses if shrubbery on the grounds were selected chiefly from species producing fruits fed upon by birds.

Most golf courses, again, have water hazards at which birds can drink and bathe; but where these are absent or are far apart, bird fountains could easily be attached to hydrant supply pipes. These not only would be a boon to birds on hot summer days, but if placed in view of rest benches would be a source of interest and entertainment to members and visitors.

Protection, food, water—these are the things that usually are present in some degree and which may very easily be supplemented; but nesting sites, especially for some of the most useful birds, are scarce or lacking on most golf courses. Trees and shrubbery (the latter best if in tangled masses) will accommodate many birds; but the birds that nest in cavities can hardly find a home on improved lands, especially where tree-surgeons have been employed. Fortunately these birds will occupy artificial cavities or nest boxes.

In most cases nest boxes must be supplied if we would enliven and benefit our golf courses with such beautiful and useful birds as the purple martin, bluebird, house wren, tree swallow, flicker, whitebreasted nuthatch, and chickadee. At least twice as many other kinds of small birds have been known to occupy nest boxes. Placing nest boxes is work which can well be done in winter, a season during which, at least on northern courses, employees are but little occupied, and when members may welcome something to do out of doors. Names of dealers in bird boxes, bird baths, and the like, and bulletins treating all phases of bird attraction methods, as well as advice in special cases, may be obtained by application to the Biological Survey, United States Department of Agriculture, Washington, D. C.

The following list contains the names of plants producing fleshy fruits which provide attractive food for desirable wild birds. Barberries (*Berberis*) and currants (*Ribes*), although providing fruits which are highly attractive to certain kinds of birds, are omitted from the list, since certain species of these two plants occasion great damage to agriculture and forestry in serving as alternate hosts of rusts which attack and destroy wheat and white pine. An extensive campaign is, in fact, being carried on by the United States Department of Agriculture to destroy these dangerous plants in certain sections of the country, and to plant them might therefore be a hazardous procedure. The list is taken from Farmers' Bulletin 1239 of the United States Department of Agriculture.



A bird bath, half screened by a clump of evergreens or shrubs, is a thing of beauty. Here the birds find a choice rendezvous

Plants bearing fleshy fruits eaten by birds		Number of species of birds known to eat the fruit	Kinds of birds among those desirable to attract, that are most fond of the fruit
Common name	Scientific name		
Juniper; red cedar....	Juniperus	39	Yellow-shafted flicker, starling, evening grosbeak, pine grosbeak, purple finch, cedar waxwing, myrtle warbler, mockingbird, robin, eastern bluebird.
Greenshield	Smilax	39	Cardinal, mockingbird, brown thrasher, catbird, hermit thrush, robin.
Bayberry	Myrica	73	Bob-white, downy woodpecker, yellow-shafted flicker, eastern phoebe, starling, meadowlark, chickadee, tree swallow, white-eyed vireo, myrtle warbler, brown thrasher, catbird, Carolina wren, black-capped chickadee, hermit thrush, eastern bluebird.
Hackberry	Celtis	40	Yellow-bellied sapsucker, yellow-shafted flicker, starling, cardinal, cedar waxwing, mockingbird, brown thrasher, robin, eastern bluebird.
Mulberry	Morus	52	Yellow-bellied cuckoo, red-headed woodpecker, red-bellied woodpecker, downy woodpecker, kingbird, starling, Baltimore oriole, orchard oriole, cardinal, purple finch, scarlet tanager, cedar waxwing, red-eyed vireo, yellow warbler, mockingbird, catbird, wood thrush, robin.
Pokeberry	Phytolacca	49	Mourning dove, yellow-shafted flicker, kingbird, starling, cardinal, mockingbird, catbird, hermit thrush, gray-cheeked thrush, olive-backed thrush, robin, eastern bluebird.
Spicebush	Benzoin	17	Kingbird, red-eyed vireo, wood thrush, veery.
Sassafras	Sassafras	18	Bob-white, kingbird, red-eyed vireo, catbird, veery, robin.
Strawberry	Fragaria	46	Chickadee, catbird, brown thrasher, wood thrush, robin.
Raspberry; blackberry..	Rubus	118	Ruffed grouse, bob-white, red-headed woodpecker, yellow-shafted flicker, kingbird, starling, Baltimore oriole, orchard oriole, pine grosbeak, song sparrow, fox sparrow, white-throated sparrow, chickadee, California towhee, spurred towhee, cardinal, rose-breasted grosbeak, black-headed grosbeak, cedar waxwing, red-eyed vireo, mockingbird, catbird, brown thrasher, tufted titmouse, wren-tit, olive-backed thrush, wood thrush, robin, eastern bluebird.
Rose	Rosa	25	Ruffed grouse, sharp-tailed grouse, prairie chicken, bob-white.
Mountain ash	Sorbus	14	Red-headed woodpecker, Baltimore oriole, evening grosbeak, pine grosbeak, cedar waxwing, Bohemian waxwing, catbird, brown thrasher, robin.
Chokeberry	Aronia	13	Meadowlark, brown thrasher.
Red haw	Crataegus	33	Ruffed grouse, pine grosbeak, purple finch, robin.
Dwarf apples	Malus		Ruffed grouse, ringneck pheasant, red crossbill, pine grosbeak, purple finch, cedar waxwing, mockingbird, robin.
Juneberry	Amelanchier	40	Yellow-shafted flicker, Baltimore oriole, cedar waxwing, catbird, hermit thrush, veery, robin.
Wild cherry	Prunus	74	Ruffed grouse, bob-white, mourning dove, red-headed woodpecker, yellow-shafted flicker, kingbird, starling, Bullock oriole, Baltimore oriole, orchard oriole, evening grosbeak, purple finch, rose-breasted grosbeak, black-headed grosbeak, Louisiana tanager, red-eyed vireo, cedar waxwing, mockingbird, catbird, brown thrasher, olive-backed thrush, wood thrush, robin, eastern bluebird.
			Ruffed grouse, bob-white, valley quail, downy woodpecker, red-bellied woodpecker, red-shafted flicker, yellow-shafted flicker, phoebe, starling, goldfinch, golden-crowned sparrow, chickadee, white-eyed vireo, Audubon warbler, mockingbird, catbird, California thrasher, brown thrasher, Carolina wren, black-capped chickadee, Carolina chickadee, wren-tit, hermit thrush, robin, eastern bluebird.
Sumac	Rhus	93	

Plants bearing fleshy fruits eaten by birds		Number of species of birds known to eat the fruit	Kinds of birds among those desirable to attract, that are most fond of the fruit	
Common name	Scientific name			
Pepperberry	<i>Schinus</i>	11	Cedar waxwing, plainoepela, hermit thrush, varied thrush, robin.	
Holly	<i>Ilex</i>	45	Ruffed grouse, bob-white, valley quail, yellow-bellied sapsucker, yellow-shafted flicker, cedar waxwing, mockingbird, catbird, brown thrasher, hermit thrush, robin, eastern bluebird.	
Supple-jack	<i>Berchemia</i>	13	Mockingbird, robin.	
Blackthorn	<i>Rhamnus</i>	16	Mockingbird, catbird, brown thrasher, robin.	
Wild grape	<i>Vitis</i>	77	Ruffed grouse, bob-white, pileated woodpecker, red-bellied woodpecker, red-shafted flicker, yellow-shafted flicker, kingbird, starling, cardinal, cedar waxwing, mockingbird, catbird, brown thrasher, wood thrush, veery, robin, western bluebird, eastern bluebird.	
Virginia creeper	<i>Parthenocissus</i>	39	Red-headed woodpecker, red-bellied woodpecker, yellow-bellied sapsucker, yellow-shafted flicker, starling, evening grosbeak, purple finch, scarlet tanager, red-eyed vireo, mockingbird, brown thrasher, tufted titmouse, hermit thrush, olive-backed thrush, gray-cheeked thrush, robin, eastern bluebird.	
Buffaloberry	<i>Shepherdia</i>	16	Sharp-tailed grouse, pine grosbeak.	
Silverberry, Russian olive, etc.	<i>Elaeagnus</i>		Sharp-tailed grouse, prairie chicken, cedar waxwing, catbird, robin.	
Wild sarsaparilla	<i>Aralia</i>	14	Bob-white, robin.	
Dogwood	<i>Cornus</i>	86	Ruffed grouse, bob-white, downy woodpecker, yellow-shafted flicker, red-shafted flicker, kingbird, starling, evening grosbeak, pine grosbeak, purple finch, white-throated sparrow, song sparrow, cardinal, cedar waxwing, warbling vireo, red-eyed vireo, catbird, brown thrasher, hermit thrush, olive-backed thrush, gray-cheeked thrush, wood thrush, robin, eastern bluebird.	
Sour gum	<i>Nyssa</i>	36	Yellow-shafted flicker, starling, purple finch, cedar waxwing, gray-cheeked thrush, olive-backed thrush, robin.	
Crowberry	<i>Empetrum</i>	16	Pine grosbeak, snowflake.	
Barberry	<i>Arctostaphylos</i>	16	Ruffed grouse, dusky grouse, valley quail, mountain quail, fox sparrow, wren-tit.	
Huckleberry	<i>Gaylussacia</i>	35	Pine grosbeak, chewink, robin.	
Blueberry	<i>Vaccinium</i>	67	Ruffed grouse, valley quail, kingbird, orchard oriole, pine grosbeak, chewink, cedar waxwing, catbird, brown thrasher, black-capped chickadee, tufted titmouse, hermit thrush, robin, eastern bluebird.	
Mexican mulberry	<i>Callicarpa</i>	10	Mockingbird, brown thrasher.	
Partridge berry	<i>Mitchella</i>	10	Ruffed grouse.	
Elderberry	<i>Sambucus</i>	106	Valley quail, red-headed woodpecker, yellow-shafted flicker, eastern kingbird, Arkansas kingbird, black phoebe, starling, California towhee, white-crowned sparrow, rose-breasted grosbeak, black-headed grosbeak, phainopepla, red-eyed vireo, mockingbird, catbird, brown thrasher, California thrasher, wren-tit, olive-backed thrush, robin, western bluebird, eastern bluebird.	
Snowberry	<i>Symphoricarpos</i>	25	Sharp-tailed grouse, evening grosbeak, pine grosbeak, varied thrush.	
Black haw	<i>Viburnum</i>	28	Ruffed grouse, yellow-billed cuckoo, yellow-shafted flicker, starling, purple finch, rose-breasted grosbeak, cedar waxwing, catbird, brown thrasher, robin, eastern bluebird.	
Honeysuckle	<i>Lonicera</i>	15	Bob-white, pine grosbeak, white-throated sparrow, catbird, brown thrasher, hermit thrush, robin.	

More Birds for the Golf Course

By Horace Mitchell

Game-Breeding Editor, FIELD AND STREAM Magazine

The duffer is heartened and the expert is thrilled at the presence of birds on the course. Song birds, game birds, and ornamental fowl strutting their colorful magnificence over the links serve to break the deadly, nerve-straining concentration that ruins so many strokes. Furthermore, the landscape is lonely and uninteresting when it is devoid of birds.

It is easy to attract and hold many species of wild fowl on the grounds of the country club. From the smallest humming bird to the peacock, hardy species will remain where they find feed, water, and shelter. The last item includes protection from natural enemies, as well as cover that shields the birds from the elements. These general requirements apply to all species, although in varying extent, depending upon which birds are desired.



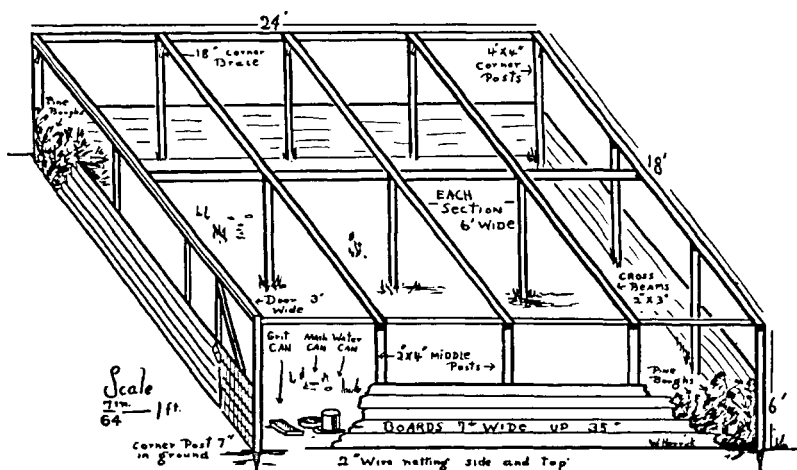
Adult breeding stock of wild turkeys in their summer pen. The wooden frames are roosting places

No great expense is necessary to transform the average course into a paradise for the birds. Merely leaving a good portion of the rough to attend to itself will ordinarily produce a good bit of both feed and cover. With the usual workmen delegated at times to set traps for house cats, and to catch the mink in any brook that may be on the place, or attend to the elimination of special enemies when needed, the protection end can be cared for.

Should the club wish to do so, there is almost no limit to what may be done toward increasing the wild birds. Game breeding may be carried on; ornamental birds may be reared and released on the grounds to care for themselves, furnish good shooting for members, and wander into the adjoining country for the benefit of the State at large.

The matter of feed is very important. No wild birds will linger where there is nothing to eat. Planting grasses, grains, shrubs, and

trees with edible seeds assists the natural increase on land left to itself. Practically all species of the plant life that thrives in the climate where the club is located will produce some sort of seed that is eaten by birds. The tone of the grounds may be natural and only native plants set out, or artificial and landscape gardening and foreign specimens used. Available open fields outside the fairways may be left uncut. They will thus afford nesting places for all birds which conduct their housekeeping at the ground level. It would be well to discourage members from tramping through this grass until after the young birds are able to fly. Some may say that this makes the fields unsightly; but these same people will be immensely pleased at walking through that same uncut field during August and seeing coveys of quail burst into the air before them, or, as they wander past the tangle of grass, along paths kept clipped, to hear the songs of the sparrows and the melodious whistling of quail. A further objection to leaving large areas of grass unmowed is that it constitutes a fire menace. This is true, especially during dry seasons. Yet it may be overcome by mowing wide paths through the field or by cutting the grass in a wide swath around the entire area.



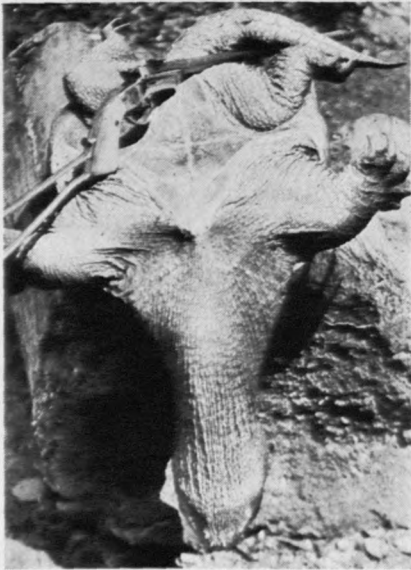
Plan for ring-necked pheasants' pen

By allowing the grass to grow, the seeds mature on the stalks and provide feed abundantly. For this same reason, and also for the reason that too formal a landscape offers little shelter, it is not advisable to indulge in wholesale trimming and pruning or excessive clearing of brush. Many country estates have been made completely pleasing to aesthetic tastes but have thereby been ruined for the birds. If some degree of formality is wanted, let it be balanced against some natural growth that will bring the beauty and cheeriness of birds. Instead of a bare expanse of green fields, let there be groves of trees and clumps of shrubbery, perhaps augmented by rustic seats in the shade for the comfort of the players. A moment's relaxation during a game is often worth strokes.

Golf courses throughout the country present wonderful opportunities for really worth-while work in conservation. Their land is patrolled by workmen constantly, natural enemies and poaching may be controlled, and the effects of carelessness by single property

owners with no time for such matters will be partially offset. Though feed and cover be perfect, no birds will linger where they find vermin numerous or where they are attacked by gunning in the breeding season. In this sense vermin includes all species of birds, animals, and reptiles that prey upon the more desirable species. Certain hawks and owls, crows, red squirrels, foxes, rats, weasels, skunks, mink, house cats, large frogs and snakes, and fish are among them. It is absolutely wrong to forbid all shooting and trapping on a game preserve. Without control, the vermin will flock to areas abounding in birds. Breeding stock, young, and eggs will fall into the maw of the bird destroyers, and the sanctuary will amount to nothing more than a wonderful feeding ground for these plunderers.

I do not advise extermination of all vermin throughout the country. Many of the malefactors listed possess admirable habits. Skunks live to a considerable extent on beetles, grubs and mice. Foxes give much good sport. House cats have a certain section of our approval as rodent killers and pets. Crows discourage hawks and owls from too extensive depredations, and for this reason alone are of much benefit to the bird lover. Control of vermin is the work of preventing these marauders from becoming too numerous and offensive.



One of the least suspected enemies of birds is the turtle, which destroys quantities of their eggs

Pole traps at least ten feet high will catch hawks and owls. These operate with a steel trap hooked under a nail at the top of the pole. Hawks and owls like to roost on some high vantage point to survey the surrounding ground before making a dive for their prey. The poles are bolted to posts set firmly in the ground and may be taken indoors when not in use. One or two good crow-shoots by members each year will keep the pests down to reasonable proportions. The birds decoy easily to stuffed owls, and the gunners can do immense good and have unbounded fun when the flocks gather to torment their ancient enemy.

House cats are the worst bird destroyers in the world. Contemptuous of man, through their long familiarity with him, they are able to do far more damage to the birds than is any wild animal. All over the country sportsmen wonder why game is so scarce, why it does not increase, when food and cover are plentiful. The majority of such conditions are caused by house cats, and the only cure is to eliminate the animal. This is a further argument in support of the growing sentiment toward laws requiring all house cats to be licensed, just as dogs are licensed. That would limit the number of cats in the community, and the problem would be more easily solved. However, with or without a license, a cat killing birds should be shot—exactly as if she were killing the domestic poultry belonging

to a single property owner rather than the birds owned by the people of the State. Rule that all cats entering the premises of the club do so at their own risk and use a gun on the felines that disregard the warning, and you will have an increased number of song and game birds and wild rabbits on your course. Shooting vermin may be done in the early morning before many members have reached the club. Thieving animals are especially active soon after dawn. Such early-rising members as the club possesses may be warned of the shooting.

Golf courses are of considerable benefit to the birds. The short grass of the fairways makes a safe promenade for the broods of your pheasants and quail when the taller grass is wet. Each bird is an almost insatiable consumer of obnoxious insects that live by destroying greens and grass. The more birds you have, the less money you will be compelled to spend for sprays and other means of exterminating the pests.

Water hazards may be made more attractive, and the mosquitoes that breed in them oftentimes will thus be put to practical use by waterfowl. Wood ducks and mandarin ducks, swans, mallards, a whole army of gloriously colorful specimens, may be maintained at little expense, and the sale of surplus stock can be turned to a profit. The wild water birds may be attracted to the larger ponds and lakes by judicious sowing of the foods they need—wild rice, wild celery, duck potato, and other plants.

All this is only a hint at the extensive subject, details of which differ with individual conditions. I am glad to place at the disposal of all country clubs the services of the game-breeding department of *Field and Stream* magazine. As editor of that department, I shall be delighted to answer any questions at any time. If personal inspection is desired, I shall be glad to visit clubs at no more charge than my expenses from Kittery Point, Maine, or New York City, and return. Such assistance should be arranged for somewhat in advance. Whenever I can combine several places in one trip I shall be glad to do so in order that the individual clubs may be placed at only the minimum of expense.

Much can be done for birds. They will return a thousandfold any effort made in their behalf. Without birds the country is a lonesome place.

Motion Pictures of Golf Course Birds

The golf club bird sanctuary committee of the National Association of Audubon Societies announces the preparation of a motion picture film on the subject of birds of golf courses, containing "beautiful golfing views and fascinating close-ups of birds at work gathering food on the green or feeding hungry youngsters." The picture is put out on 16 mm. film, which is used in the small projectors now readily available to nearly every golf club. The photographing was done by Dr. A. A. Allen, professor of ornithology at Cornell University. The picture will be loaned free to members of any golf club whose requests are endorsed by the president of their club. Requests for the use of this film should be addressed to Dr. T. Gilbert Pearson, President, National Association of Audubon Societies, 1974 Broadway, New York City.

The installation of bird houses in a chestnut orchard in Maryland increased the number of broods of birds from 7 to 25 broods to the acre during the period 1926 to 1929. At the end of this period the average infestation of weevil larvae to the nut was between 2 and 3 larvae in this Maryland orchard, while a count made in a Virginia orchard that had not been provided with bird houses showed an infestation of between 14 and 15 larvae to the nut. This is but a single instance of the control of destructive insects by birds.

Stray cats are a serious menace to song birds, insectivorous birds, game birds, rabbits, squirrels, poultry, and other desirable forms of small animal life. Being largely nocturnal in habit, the cats are seldom seen and thus are generally more numerous than is realized. More than 50 stray cats were caught in a single trap in the suburbs of an eastern city during the course of 18 months. A simple cat trap is a box with an end trap door released by a treadle inside the box. Directions for making such a trap are contained in Leaflet 50 of the United States Department of Agriculture, entitled "How to Make a Cat Trap." The leaflet also contains instructions for baiting the trap and killing the animal that is caught.

The graceful Arctic terns, some of which breed close to the North Pole and spend their winters not far from the South Pole, are without doubt the champion "globe trotters" and "daylight savers" of the bird world. Some individuals must make an annual round trip of about 22,000 miles from their breeding grounds to their winter quarters and return. They also probably enjoy more hours of daylight than any other creature living. Before they reach their breeding grounds in the Arctic the midnight sun has already appeared; during their sojourn in the Antarctic daylight is continuous.

Individual birds of this species, according to Frederick C. Lincoln, of the Biological Survey, make the longest flights known to science. An Arctic tern banded as a chick on the coast of Labrador was found about three months later near La Rochelle, France. Another fledgling banded at the same point was found on the beach at Margate, about 15 miles southwest of Port Shepstone, Natal, South Africa, about three months after being banded, during which time it had flown not less than 8,000 miles.

If the neighborhood is so full of English sparrows that the bird becomes a pest, it is comparatively a simple matter to trap them. Leaflet 61-L, just issued by the United States Department of Agriculture, gives simple plans for building several styles of sparrow traps. The Tesch nest-box trap is an ingenious contrivance designed to catch one bird after another. After a bird enters, the trap dumps the bird into a close-woven sack and sets itself for the next visitor. Other effective styles include a hand-operated nest trap, a sieve trap, and a funnel trap made from small-mesh poultry wire. The leaflet is free to anyone requesting a copy.

In the month ending December 15, 1928, about 80,000 foreign wild birds were brought into the United States at the ports of New York and Philadelphia.

Bird banding in the United States dates from the time of Audubon, who about 1803 marked a brood of phœbes with silver wire and was rewarded the following season when two of the banded birds returned to nest in the same vicinity. Since then more than 400,000 birds have been banded in the United States and Canada by co-operators of the Biological Survey. Under the migratory bird treaty act, anyone who bands birds must have a Federal permit.

STATEMENT REQUIRED BY POSTAL LAWS AND REGULATIONS OF THE OWNERSHIP AND MANAGEMENT (AS OF OCTOBER 1, 1930) OF THE BULLETIN OF THE UNITED STATES GOLF ASSOCIATION GREEN SECTION, PUBLISHED MONTHLY AT WASHINGTON, D. C.

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QUESTIONS AND ANSWERS

All questions sent to the Green Section will be answered in a letter to the writer as promptly as possible. The more interesting of these questions, with concise answers, will appear in this column. If your experience leads you to disagree with any answer given in this column, it is your privilege and duty to write to the Green Section.

While most of the answers are of general application, please bear in mind that each recommendation is intended specifically for the locality designated at the end of the question.

Adaptability of bent grass for Texas conditions.—Do you think Seaside creeping bent or any other of the bent grasses would be suitable for putting greens under our conditions? (Texas)

ANSWER.—There is a common opinion that Seaside creeping bent, some of which is sold under the name Cocos bent, is extremely drought-resistant and suitable throughout the South. Observations we have made to date would indicate that this grass is no more suitable for extreme southern conditions and no more drought-resistant than colonial bent, of which German mixed bent mostly consists, or some other strains of creeping bent, such as the Washington and Metropolitan strains. Seaside creeping bent seed is produced commercially in the Coos Bay region of Oregon, and has been extensively planted on California golf courses. The admirable results obtained there have led to the widespread opinion that it is more suitable than other bents for southern conditions. The other bents, however, grow equally as well in California as Seaside creeping bent; and although parts of California may be of a more southern latitude than the chief bent districts of the East, it is well known that other crops also can be grown in California which are not adapted to similar latitudes in the East. In Texas bent grass would, of course, have to be grown where water is available. Under your conditions it might be well to try out bent grass on lawns, tees, or parts of

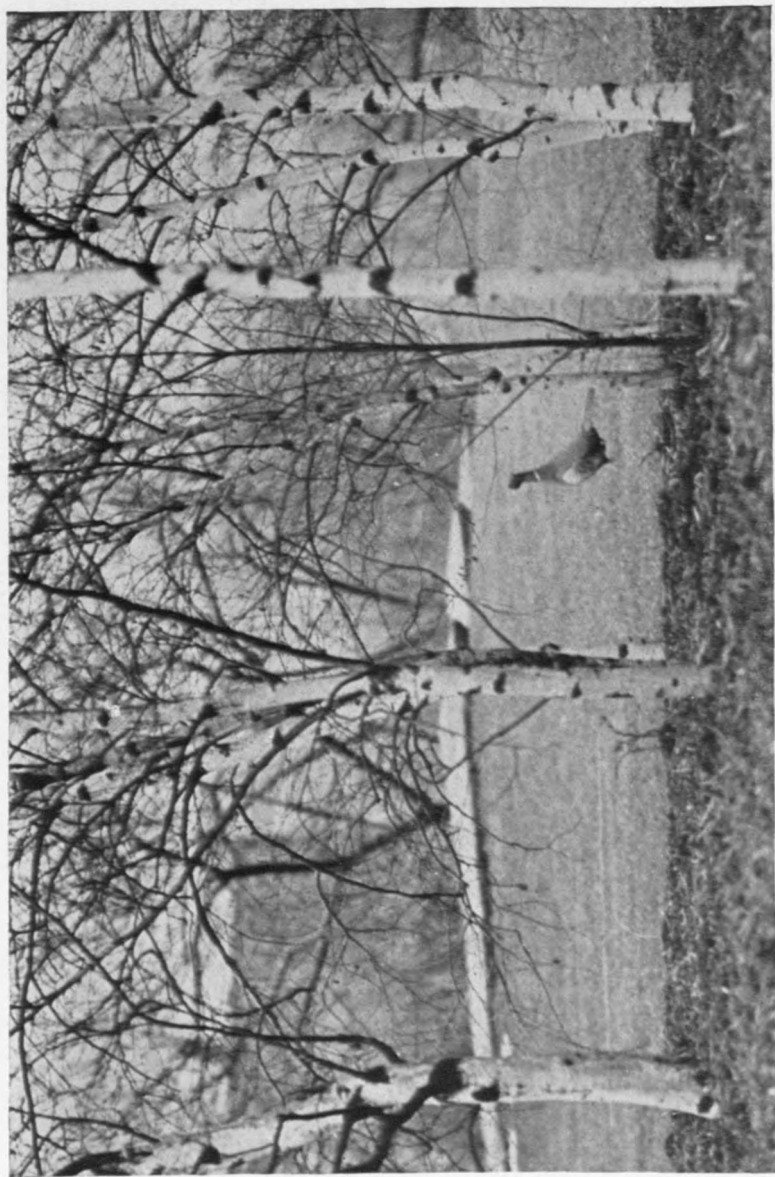
fairways where irrigation by hose is possible, before trying it on putting greens. German mixed bent seed is probably the most economical bent seed to buy for your purpose and is as likely as any of the bents to stand southern conditions. Plantings should be made in early September. Bent grass usually ceases to grow in the winter and goes slightly off color, but will respond promptly with any warm spell. It should not winterkill in Texas.

Turf for tennis courts.—The turf for tennis courts commonly in use here seems to consist mostly of creeping bent and red fescue with some Kentucky bluegrass, colonial bent, and redtop. This is not entirely satisfactory in that it presents a patchy appearance and not the most desirable playing surface. Is there a more sturdy grass available for the purpose? Is any special treatment necessary in maintaining tennis court turf? (Connecticut)

ANSWER.—Very little research work has been done on turf for tennis courts, but some conclusions may be drawn from experience in connection with golf course putting greens. Experience seems to indicate that the best turf for tennis courts consists of colonial bent and red fescue, either the New Zealand or the European red fescue. The addition of some Kentucky bluegrass seems desirable from time to time on account of its more upright and stubby growth. It is true that this mixture is apt to present a patchy appearance. A turf of more uniform appearance may be produced by planting creeping bent by the stolon method, as is often done on putting greens. The Washington or Metropolitan strains of creeping bent are the best for the purpose. Creeping bent, however, does not seem to stand the wear to which tennis courts are subjected as well as a turf of mixed grasses does. Where creeping bent courts have only light play or where the players are willing to show some consideration with regard to worn spots, particularly along service lines, either the Washington or the Metropolitan strain is entirely practical. The fundamentals of growing closely clipped turf are practically the same on tennis courts as on golf courses. An important difference, however, is that on tennis courts it is desirable to keep the turf a little drier than on putting greens, so the grass will be less succulent and tougher. From a playing standpoint also a drier surface is to be preferred so that it will produce a better bounce to the ball than is desirable on a putting green, where one of the important things is to have the ground soft enough to hold a ball which is pitched to the green. The methods of top-dressing and fertilizing are practically the same for tennis courts as for putting greens.

Efficiency of arsenate of lead in the control of weeds.—What results may be expected from the use of arsenate of lead in the control of weeds on putting greens, particularly in the control of crab grass? (Ohio)

ANSWER.—Arsenate of lead has proved satisfactory in the control of certain weeds such as chickweed and others of that thickly matted type. In a few cases it has been effective in reducing crab grass but in most cases it has been ineffective against this weed. Since the weeds which it controls can usually be very easily checked by cheaper chemicals the use of arsenate of lead is not recommended simply for the control of weeds.



Courtesy of National Association of Audubon Societies

A Club Member of Distinction

Pheasants are quick to avail themselves of protection. Thus on shooting days they often parade up and down the greens on golf courses where bird sanctuaries are maintained, to the distraction of passing gunners. The brilliant plumage of the male and his distinguished bearing are an attraction on any course.



Those who love Nature can never be dull. They may have other temptations; but at least they will run no risk of being beguiled, by ennui, idleness, or want of occupation, "to buy the merry madness of an hour with the long penitence of after-time." The love of Nature, again, helps us greatly to keep ourselves free from those mean and petty cares which interfere so much with calm and peace of mind. It turns "every ordinary walk into a morning or evening sacrifice," and brightens life until it becomes almost like a fairy tale.

John Lubbock

