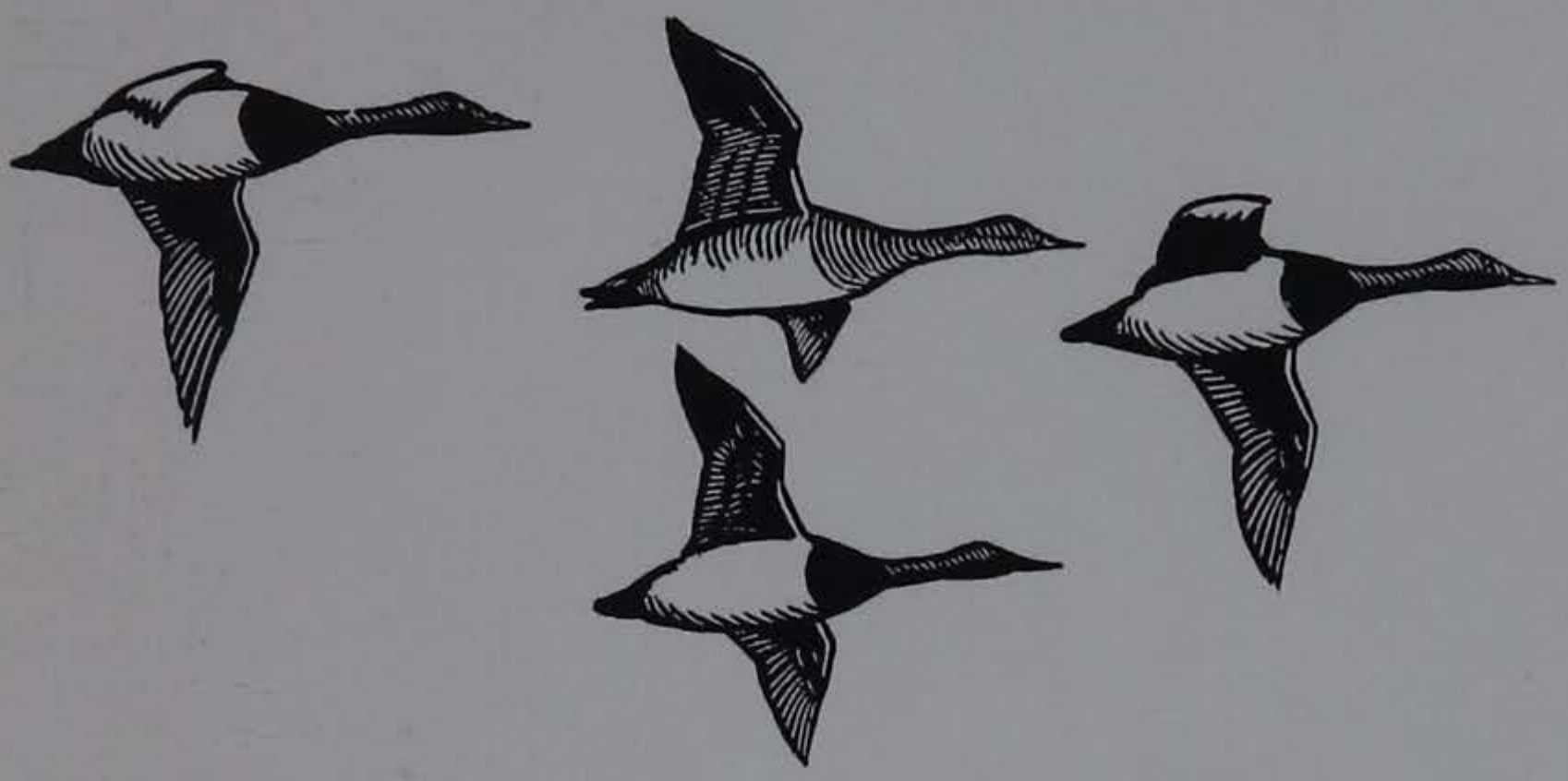
WATERFOWL IN IOWA

STATE CONSERVATION COMMISSION

STATE OF IOWA
1977



WATERFOWL IN IOWA

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FOREWORD

Since the origin of man the migratory flight of waterfowl has fired his imagination. Undoubtedly the hungry caveman, as he watched wave after wave of ducks and geese pass overhead, felt a thrill, and his dull brain questioned, "Whither and why?" The same age-old attraction each spring and fall turns thousands of faces skyward when flocks of Canada geese fly over.

In historic times Iowa was the nesting ground of countless flocks of ducks, geese, and swans. Much of the marshland that was their home has been tiled and has disappeared under the corn planter. However, this state is still the summer home of many species, and restoration of various areas is annually increasing the number. Iowa is more important as a cafeteria for the ducks on their semi-annual flights than as a nesting ground, and multitudes of them stop in this state to feed and grow fat on waste grain.

The interest in waterfowl may be observed each spring during the blue and snow goose flight along the Missouri River, where thousands of spectators gather to watch the flight. There are many bird study clubs in the state with large memberships, as well as hundreds of unaffiliated ornithologists who spend much of their leisure time observing birds. Iowa also has some 40,000 duck hunters whose blinds each fall dot our lakes and streams.

There is a definite need in this state for an inexpensive book on waterfowl with accurate color plates showing plumages of ducks, not only in the full or spring plumage as is generally shown in bird books, but also in the eclipse plumages of fall. The latter are particularly important for duck hunters. In recent years because of the necessity of preserving certain species of ducks, every hunter has had to learn exactly the species he viewed over his gun barrel. Unquestionably, future laws will continue to make this identification necessary.

I feel that the State Conservation Commission is fortunate in being able to publish WATERFOWL IN IOWA, and I am sure this book will receive a hearty welcome from all Iowans interested in preservation and perpetuation of our ducks, geese, and swans.

FRED T. SCHWOB, *Director*
State Conservation Commission
1943

PREFACE

WATERFOWL IN IOWA is not intended as a scientific treatise nor as an exhaustive study of these birds. The information given is pointed toward their identification and understanding. We have endeavored to avoid the terminology of science and have used terms most readily understood by sportsmen and bird students. These brief life histories place emphasis on habitat, behavior, field marks, and appearance in hand.

Included in the text are all species of waterfowl that to our knowledge have occurred, or might occur, in this state. None of these birds is extinct; however, several are extremely rare, and only by the combined efforts of conservationists, bird students, and sportsmen can they be saved the fate of the Laborador duck.

The manuscript and paintings were prepared in the Museum Division of the Iowa State Department of History and Archives, Des Moines, Iowa. The department's collection of motion pictures, slides, bird skins, and mounted specimens was of major importance in development of the text and preparation of the plates.

The authors wish to take this opportunity to thank Mr. Ora Williams, Curator of the Iowa State Department of History and Archives, for permission to carry on this work, and for his excellent counsel and advice, and Miss Mabel M. Hoeye, departmental secretary, for aid in typing and correcting the manuscript. The authors also wish to thank: Mr. Fred T. Schwob, Director; Mr. Bruce F. Stiles, Chief, Division of Fish and Game; Mr. Kenneth M. Krezek, Chief, Division of Administration; and Mr. James R. Harlan, Superintendent of Public Relations, of the State Conservation Commission; and the members of the Commission who made possible the publication of this book, Mr. R. E. Garberson (deceased), Sibley, Mr. E. G. Ganitz, Lansing, Mr. J. D. Lowe, Algona, Mr. F. W. Mattes, Odebolt, Mrs. Addison Parker, Des Moines, Mr. F. J. Poyneer, Cedar Rapids, Mr. R. E. Stewart, Ottumwa, and Mr. A. S. Workman, Glenwood; also Mr. Sherman W. Needham, Superintendent of State Printing, Mr. C. B. Akers, Auditor of State, Mr. Wayne M. Ropes, Secretary of State, Mr. John M. Rankin, Attorney General, Mr. Tom W. Purcell, Hampton, and Mr. Walter Sharp, Burlington, members of the State Printing Board, for their help and cooperation; Mr. Stanley C. Ball, Curator of the Peabody Museum of Natural History, New Haven Connecticut, Mr. James Moffitt, Curator of The California Academy of Sciences, San Francisco, California, and Mr. H. M. Laing, Comox, British Columbia, for their kindness in securing specimens from their respective areas for comparison; Professor H. R. Dill and Mr. Walter C. Thietje of the Museum of Natural History, State University of Iowa, for advice and direction during previous study in preparation and collection of museum specimens and for aid in securing many of the specimens used in the preparation of this manuscript; Dr. Carl J. Drake and Dr. George O. Hendrickson, Iowa State College, for encouragement and services; Mr. F. H. Davis, Game Management Agent for the U.S. Fish and Wildlife Service, for friendly counsel and information supplied; Mr. Philip A. DuMont of the U.S. Fish and Wildlife Service for many helpful suggestions and criticisms; Dr. F. L. R. Roberts of Spirit Lake, for many fine suggestions and information useful in the preparation of this work; and the many museums, collectors, sportsmen, and bird students who have contributed data and specimens of much value in the study of waterfowl. The

artist and authors are particularly grateful to Mr. Jay N. Darling, who carefully checked the color plates and gave many helpful criticisms and suggestions during the preparation of the plates.

The following works were used as references and in checking data in the preparation of this book:

R. M. Anderson's *Birds of Iowa,* 1907, A. C. Bent's *Life Histories of North American Waterfowl,* Part I—1923, Part II—1925, P. A. DuMont's *Revised List of Birds of Iowa,* 1934, and *Birds of Polk County, Iowa,* 1931, H. K. Job's *Among the Waterfowl,* 1902, W. B. Leffingwell's *Wild Fowl Shooting,* 1888, T. H. Manning's *Blue and Lesser Snow Geese on Southampton and Baffin Islands,* The Auk, 59, A. C. Martin's and F. M. Uhler's *Food of Game Ducks in the United States and Canada,* 1939, W. L. McAttee's *Local Names of Migratory Game Birds,* 1923, R. T. Peterson's *A Field Guide to the Birds,* 1934, and *A Field Guide to Western Birds,* 1941, L. J. Bennett's *The Blue-wing Teal,* 1938, C. A. Reed's *North American Bird's Eggs,* 1904, T. S. Roberts' *Birds of Minnesota,* 1936, J. D. Soper's *The Blue Goose,* 1930, G. M. Sutton's *The Blue Goose and Lesser Snow Goose on Southampton Island, Hudson Bay,* The Auk, 48, Vol. 61, 1944, Vol. 62, 1945, Vol. 63, 1946, and Vol. 64, 1947, Supplements to the American Ornithologists' Union Check-List of North American Birds, and F. H. Kortright's *Ducks, Geese and Swans of North America,* 1942.

Were it not for the splendid help of the artist, Mr. Maynard F. Reece, and Mr. James R. Harlan of the State Conservation Commission, this volume would probably never have been completed.

PREFACE TO FIFTH EDITION

To the outdoor lovers—the conservationists, hunters, and bird students—whose continued support has made possible this fifth edition of WATERFOWL IN IOWA, the authors and artist wish to express their thanks.

This edition is essentially the same as the first four, but the material has been brought up to date and names and scientific nomenclature have been changed to conform to the most recent revisions of the Check-List of the American Ornithologists Union. New references used in preparing this edition are: *Distribution in States and Counties of Waterfowl Species Harvested During 1961-70 Seasons,* by Samuel M. Carney, Michael F. Sorensen, and Elwood M. Martin, published by the U.S. Fish and Wildlife Service, 1975; *An Annotated List of the Birds of Iowa,* by Woodward H. Brown, Iowa State Journal of Science, 1971; and *Ducks, Geese and Swans of North America,* by Frank C. Bellrose, 1976.

The authors also wish to express their gratitude to Fred A. Priewert, Director of the State Conservation Commission, Bob Barratt, Superintendent of Wildlife of the Commission, Roger Sparks and Larry Pool of the Commission's Information and Education Section, and other members of the Commission staff; to the many sportsmen and bird students who have contributed records and specimens; and to our daughter, Jean Strueber, who checked and corrected the manuscript of this edition.

Des Moines, Iowa
1977

LIST OF ILLUSTRATIONS

Note: The original Maynard Reece paintings and illustrations used in this book were completed in 1942.

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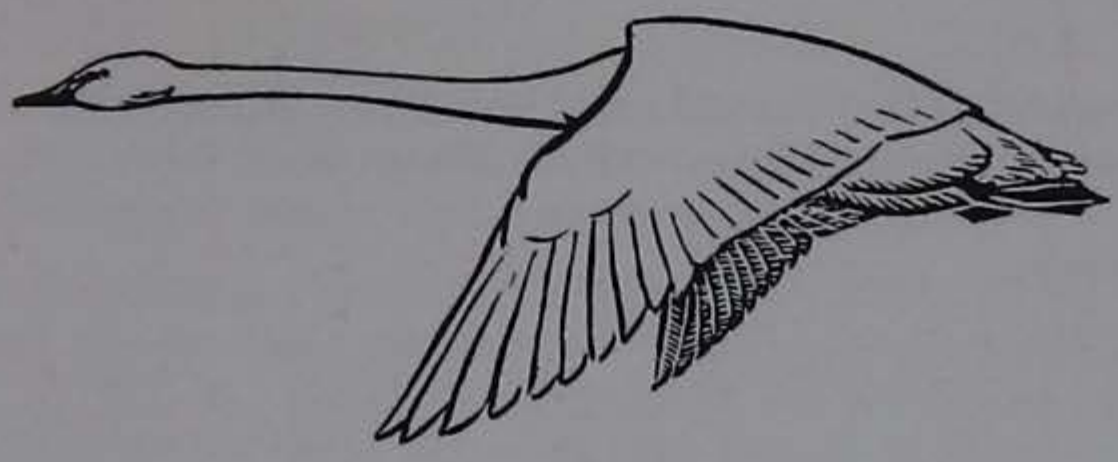


CHAPTER I–SWANS

WHISTLING SWAN

Cygnus columbianus columbianus (*ORD*)

PLATE ON PAGE 7

Other names:
swan, wild swan

Length: 54 to 58 inches
Weight: 12 to 18 pounds

DESCRIPTION: *Adult male and female*—Largest of the waterfowl now found in Iowa. Entire body white. Head sometimes rust stained. Bill black, usually with an oblong yellow spot near base in front of eye. (Yellow spot is lacking in some birds.) Nostril nearer to tip of bill than to eye. Iris brown. Feet black.

Juvenile—Body plumage mottled with light gray. Head and neck mostly light gray; head sometimes tinged with rust. Bill dark gray mottled with flesh color; yellow spot on base of bill lacking. Feet grayish, sometimes mottled with flesh color.

FIELD MARKS: A large bird, conspicuously larger than any of the geese. Pure white; does not have black primaries as does the snow goose. In flight and on land, its large size and very long neck are outstanding. Seen on lakes and marshes, in small flocks or sometimes single birds. Cannot easily be mistaken for any other waterfowl except the trumpeter swan, which is greatly reduced in numbers and no longer occurs in Iowa. Swans arise from the water with difficulty but are graceful in flight and attain an estimated speed of 50 miles per hour. They often feed by tipping up, reaching for food on the bottom with their long necks. Swans are the only white waterfowl having black feet, noticeable as the birds swim or tip up for food.

CALL: Wow-ow-ou, similar to the baying of a small hound; call does not in any way resemble the whistle implied by the bird's name.

MIGRATIONS: Uncommon but regular migrants during the spring, usually not arriving until April. Swans fly in small companies, seldom

associating with other waterfowl. The birds ordinarily fly at high altitudes and many of them pass over without being seen. During the fall, usually in November, small flocks of scattered individuals are found, most of them juvenile birds.

BREEDING: *Range*—North of the Arctic Circle or the near Arctic; south along the west side of Hudson Bay, rarely as far as York Factory. *Nest*—Composed of grasses and moss; in secluded spots on the borders of small lakes, or on islands. *Eggs*—4 or 5, larger than those of any geese; dull white becoming much stained as incubation progresses; hatch in 35 to 40 days. *Downy young*—White; bill, legs, and feet flesh color.

WINTER RANGE: East coast populations along Chesapeake Bay and Currituck Sound, others in the Central Valley of California.

FOOD: Mainly roots, leaves, and seeds of water plants obtained from the bottoms of marshes and small lakes; occasionally some animal matter such as frogs, minnows, and shellfish.

IOWA STATUS: The whistling swan is far from common, but few years pass without several being seen. They are found along the larger rivers, but also have a particular fondness for certain lakes and marshes, often remaining in suitable places for several days. Swans are protected by law, yet each year some are shot, either through ignorance or in disregard of the law. There is no reason to mistake them for any other bird. Whistling swans are migrants only and there are no authentic nesting records for Iowa.

TRUMPETER SWAN

Cygnus buccinator RICHARDSON

PLATE ON PAGE 7

Length: 60 to 70 inches Weight: 20 to 30 pounds

DESCRIPTION: *Adult male and female*—Largest of all North American waterfowl. Pure white with black bill and feet. Nostril is located midway between tip of bill and eye.

Juvenile—Body plumage white mottled with light gray. Head and neck usually light gray. Bill black, mixed with flesh color. Feet dull yellow tinged with gray or olive.

FIELD MARKS: Probably indistinguishable from the whistling swan except in the hand. The trumpeter swan lacks the yellow spot in front of the eye, but occasionally whistling swans also fail to show this mark. The only true method of distinguishing between the two species lies in differences in the curvature of the windpipe and can be determined only by postmortem examination. All measurements vary and cannot be relied upon. Trumpeter swans are now found only in limited areas and refuges, mostly well away from civilization. For field identification purposes, the main difference

between the two species is in their breeding range; the whistling swan nests in the Arctic regions and the trumpeter swan in western United States, Alaska and British Columbia.

CALL: Loud trumpeting, similar to the sound of a French horn.

BREEDING: *Range*—Yellowstone Park, western Montana, British Columbia, and Alaska. Successful breeding colonies have been established by birds transplanted from the Red Rock Lakes Refuge in southwestern Montana to Malheur Refuge in Oregon, Ruby Lake Refuge in Nevada, and Lacreek Refuge in South Dakota. Formerly nested as far east as James Bay and south as far as Iowa and Nebraska. *Nest*—Composed of grasses and down, on large tussocks in marsh areas. *Eggs*—4 to 6, dull white becoming much nest-stained. *Downy young*—Probably resemble those of the whistling swan.

WINTER RANGE: Has mostly forsaken its former migratory habit and is a winter resident of much of its breeding range, moving only from one locality to another.

FOOD: Probably the same as whistling swans, chiefly vegetable matter supplemented by some animal food such as insects and snails.

IOWA STATUS: Extinct in Iowa, but formerly a nesting bird and probably the only swan ever to nest in the state. The last nest here was probably one reported by J. W. Preston; it was in a slough near Little Twin Lake in Hancock County in 1883, in an area that had been used by swans for many years. The birds were positively identified as trumpeter swans. (R. M. Anderson, 1907, reporting a 1904 letter from Preston in A. C. Bent's *Life Histories of North American Wild Fowl.*) A specimen taken in Sac County is listed by DuMont in *Revised List of Birds of Iowa.*

PLATE I

LESSER SNOW GOOSE
(BLUE PHASE)
ADULT

LESSER SNOW GOOSE
(BLUE PHASE)
IMMATURE

LESSER SNOW GOOSE
(INTERMEDIATE
PLUMAGE)

LESSER SNOW GOOSE
(BLUE PHASE)
JUVENILE

LESSER SNOW GOOSE
(WHITE PHASE)
ADULT

LESSER SNOW GOOSE
(WHITE PHASE)
JUVENILE

WHITE-FRONTED GOOSE
JUVENILE

CANADA GOOSE

LESSER CANADA
GOOSE

RICHARDSON'S
GOOSE

WHITE-FRONTED GOOSE
ADULT

WHISTLING SWAN
ADULT

WHISTLING SWAN
JUVENILE

TRUMPETER SWAN
ADULT


Maynard F. Reece

CHAPTER II–GEESE

GIANT CANADA GOOSE

Branta canadensis maxima DELACOUR

Length: 36 to 43 inches Weight: 9 to 15 pounds

DESCRIPTION: Largest of the wild geese. Plumage is similar to the interior Canada goose, possibly somewhat lighter overall. Occasionally has tan markings on the sides of the head.

FIELD MARKS: Difficult if not impossible to distinguish from the interior Canada goose in the field, though its greater length and weight probably will serve to distinguish between the two if the birds are in the hand.

Four races of Canada geese are known to occur in Iowa and it is possible that others occur here also. Harold C. Hanson, in 1968, reported that six and possibly seven races of Canada geese occur at Squaw Creek National Wildlife Refuge in northwest Missouri. Differences, however, often are so small that any attempt to differentiate between them in the field is probably futile. (An exception is the smallest race of Canadas occurring here, the Richardson's goose.) If lesser snow geese are available for comparison, it may be possible to identify the lesser Canada by comparing the two. Because the giant Canada is a much more rare bird than the interior Canada, it is probably safest to assume that any large Canada is an interior rather than a giant Canada unless the bird can be measured.

CALL: Ha-lonk, ha-lonk.

MIGRATIONS: Probably the same as the interior Canada.

BREEDING: *Range*—Most giant Canadas that occur in Iowa breed from southwestern Manitoba east to James Bay, especially between Lake Winnipeg and Lake Winnipegosis in Manitoba. *Nest, eggs, and downy young*—Similar to those of the interior Canada.

WINTER RANGE: The same as the interior Canada, except that a large part of the known giant Canadas winter at Rochester, Minnesota.

FOOD: Similar to that of other Canada geese.

IOWA STATUS: The giant Canada is probably the goose that formerly nested in Iowa. For many years it was believed to be extinct, but in 1962 Hanson discovered that a large flock wintering in Rochester, Minnesota, was made up of giant Canadas.

Giant Canadas have proved easy to manage and have been used for experimental stocking and breeding. In Iowa, the State Conservation Commission maintains captive breeding flocks, along with free flying birds, at Kettleson's Hogsback in Dickinson County, at Smith's Slough, across the road from Dewey's Pasture in Clay County, and at Rice Lake in Winnebago and Worth Counties. In all of these places, the young have been allowed to migrate. A nesting flock is well establshed at Ingham Lake in Emmet County; all of these birds are now free flying and none are captive. Recently the Commission attempted to establish giant Canadas in southern Iowa at the Colyn area in Lucas County. Some young birds were produced in 1976, but it is not yet known whether a successful breeding flock can be established.

Except for the Colyn site, hunting of all Canada geese is prohibited in areas approximately ten miles square around the places in which the Commission is attempting to establish breeding flocks, to avoid killing all the progeny the first year and allow some of them to migrate. As the nesting flocks have become established, the Commission reports some harvest of giant Canadas each year. It appears that the giant Canada goose is becoming reestablished as a nesting bird in Iowa and may become once more an important game bird here.

INTERIOR CANADA GOOSE

Branta canadensis interior TODD

PLATE ON PAGE 7

Other names:
honker, Canadian goose,
Canadian, wild goose

Length: 32½ to 36 inches
Weight: 7 to 9¼ pounds

DESCRIPTION: Head and neck black with a white patch on each side of head, joining under chin. General body plumage light grayish-brown or tawny, darker brown on back. Tail black. Rump and under tail coverts white. Iris brown. Bill and feet black. All plumages of the Canada goose are similar; old males are often light on the under parts and females occasionally show a few white feathers mixed with the black of the neck or at the base of the neck. Wing quills dark slate, almost black, often shading into deep brown as plumage becomes old and worn. Molting is in midsummer; new plumage, acquired gradually, is usually nearly complete by late September and early October. The flightless period is during August, when the wing quills are shed.

FIELD MARKS: Frequently flies in large flocks, usually in typical V-formation, often led by an old bird. For a bird of such size, it is extremely fast, traveling about 40 miles an hour, and often up to 60 miles an hour. It has considerable difficulty in rising from land or water, taxiing for some distance before gaining full flight. Canada geese are very wary, seldom allowing close approach, nor do they land without first searching the vicinity thoroughly, alighting well away from any shrubbery that might conceal an enemy. Their flight is accompanied by much honking, which can be heard before their faint V-formation is seen in the distance. The black neck and white throat patch make the Canada group easy to identify. When the birds take off, the dark tail and white rump are easily seen.

CALL: Ha-lonk, ha-lonk.

MIGRATIONS: Canada geese are comparatively early migrants, often arriving the first part of March, with the migration at its height from the middle of March to the first part of April. Although classed as common, Canada geese do not compare in numbers with snow geese. Canadas usually stay in flocks by themselves or with other geese of the Canada group; if alighting in areas where snow geese are numerous, they stay well to the side of the flock. The fall migration occurs in late September, October, and November.

BREEDING: *Range*—Northern America south of the barren grounds; those that migrate through Iowa nest on the west coast of Hudson Bay from James Bay to north of Churchill, and westward to Lake Winnipeg. *Nest*—A pile of weeds or grasses, usually on the shores of lakes or ponds, often on small islands or tussocks, or even muskrat houses. Well-lined with down after the eggs are laid. Breeds in early spring, often by early May. *Eggs*—4 to 7; creamy white becoming much stained as incubation progresses; hatch in about 28 days. Both male and female birds guard the nest, but the gander usually wards off any enemies. *Downy young*—Yellowish-olive above, yellowish on neck, buff on under parts. Leave the nest and go to water almost immediately after hatching.

WINTER RANGE: Most interior Canadas that migrate through Iowa winter at Horseshoe Lake in southern Illinois and at Swan Lake in central Missouri; a few winter in southern Iowa and in Arkansas and Louisiana.

FOOD: Grain, grasses, green parts of other plants, and small quantities of animal matter. Usually feed by grazing, clipping the grass with their sharp mandibles, but at times will tip up, obtaining food from the bottom of marshes and lakes.

IOWA STATUS: At one time the Canada goose was probably the most important game bird among the geese, but as changes have occurred in the fall migration of the snow goose, the Canada has become of less importance as a game bird. The Canada is extremely wary and much time and patience are necessary to secure one of these noble birds—hence few are taken except by experienced goose hunters. The exception to this is shooting in controlled areas near refuges, none of them in Iowa, where novices sometimes have good luck taking Canada geese. During migrations Canadas are common along both of the larger rivers of the state as well as inland. Occasionally

they winter or remain in well-secluded areas as long as open water is available.

According to Bellrose, the number of Canada geese has increased dramatically during the last 30 years, and there are probably more of them now than when the white man first settled in this country. Long-time Iowa observers agree. Bellrose thinks the upsurge in goose populations is mostly caused by changes in agricultural practices and manipulation of federal refuges, where large fields are planted for the benefit of wintering geese. The geese have proved to be adaptable. As wild habitat has diminished, as more waste grain has become available in cultivated fields, and as more fields have been planted especially for their benefit, the geese have changed their feeding habits and are now consuming more grain and less wild food than in the past.

LESSER CANADA GOOSE

Branta canadensis parvipes (BRANDT)

PLATE ON PAGE 7

Other names:
Hutchins's goose (by error),
Canada goose, brant, short-neck,
short-necked goose

Length: 25 to 31 inches
Weight: 4 to 6 pounds

DESCRIPTION: Plumage of males, females and young similar, like that of the interior Canada goose, though lesser Canadas are usually browner than the larger Canada geese. Molts and plumage phases the same as other Canada geese. Throat patch is often divided by fine black lines and there is frequently a slight ring at the base of the neck. Bill black, about one and one-half inches long. Size about the same as a snow goose.

FIELD MARKS: Practically indistinguishable from its larger cousins; habits are similar. When found in company, lesser Canadas can be distinguished by their smaller size and darker coloration.

CALL: Honking similar to other Canada geese, higher in pitch.

MIGRATIONS: Arrives during March, feeding in suitable areas for a short time before moving on. During the fall, occurs from late September through November, whenever there are other Canada geese. During migrations the lesser Canada is often seen in company with other geese—larger Canadas, Richardson's, and white-fronts.

BREEDING: *Range*—Barren grounds in the Arctic, considerably farther north than larger Canada geese; those that migrate through Iowa nest on the northwest coast of Hudson Bay and on the coastal tundra west of Hudson Bay. *Nest*—Similar to those of other Canada geese, in suitable localities on the barren grounds. *Eggs*—5 or 6, white, often stained with buff, *Downy young*—Similar to other Canada geese.

WINTER RANGE: Southern United States as far south as Mexico. Some lesser Canadas that migrate through Iowa may winter as far north as southern Illinois and central Missouri.

FOOD: Grass, grain, weed seeds, occasionally small amounts of animal matter. Prefers to feed in open or harvested fields, shallow lakes, on sand bars; obtains food by grazing and sometimes by tipping up in the water.

IOWA STATUS: While this goose is by no means a common or abundant migrant, enough of them come through the state to form a good percentage of the Canada group. They are seldom identified correctly by sportsmen or bird students; smaller individuals are usually classed as Richardson's geese. Books written on early-day wildfowl shooting speak of the Richardson's goose as weighing up to six pounds or more, but because the lesser Canada was formerly classed with the Richardson's goose, many of the larger birds were probably lesser Canadas.

RICHARDSON'S GOOSE

Branta canadensis hutchinsii (RICHARDSON)

PLATE ON PAGE 7

Other names: Hutchins's goose, hutch, hutch goose, cackling goose, brant, little goose

Length: 23 to 25 inches
Weight: 3 to 4 pounds

DESCRIPTION: Marked exactly like other Canada geese, but much smaller. Plumages of both sexes identical; males may be slightly larger. In August the adult birds have a single, annual, complete postnuptial molt during which the quills of the wings are shed. At this time the birds are flightless.

FIELD MARKS: A small-sized goose; gives the impression of being long-necked. Flies in the traditional V-formation with slow and labored wing-beats. Flight speed of this goose has been estimated at 40 to 50 miles an hour, about equal to the snow goose.

CALL: Lo-unk, lo-unk; or lo-ank, lo-ank. Higher pitched than the call of other Canadas, somewhat resembling that of the white-front.

MIGRATIONS: Chiefly through the western United States and the Mississippi Valley. Fall migrations are from the middle to latter part of October or early November; spring migrations are later than most other geese, usually not before mid-March and continuing to mid-April.

BREEDING: *Range*—Arctic regions of North America, mainly in the barren grounds. *Nest*—Built on the ground, lined with down. *Eggs*—White, 4 to 6. Incubation period the same as other Canada geese. *Downy young*—Similar to other Canada geese, but smaller.

WINTER RANGE: Chiefly in the western United States and the lower Mississippi Valley.

FOOD: Primarily vegetation such as tender grasses, water plants, and small grain; some mollusks and insects.

IOWA STATUS: Although the Richardson's goose was formerly a rare migrant, small flocks are now seen regularly during both fall and spring migrations. Usually they will be in flocks by themselves, and though they light near big flocks of Canadas and snows, they usually keep to themselves at the edge of the big flock rather than mixing with other geese.

WHITE-FRONTED GOOSE

Anser albifrons frontalis BAIRD

PLATE ON PAGE 7

Other names: speckled brant, gray brant, specklebelly, gray wavey, white-front, laughing goose

Length: 27½ to 30 inches
Weight: 4 to 6 pounds

DESCRIPTION: *Adult male and female*—About the size of the snow goose but slightly slimmer in build. Brownish-gray plumage, lighter on the under parts where it is heavily blotched with black. Side feathers edged with white or gray. Feathers at base of bill white. Bill marked with orange, yellow, and white. Iris brown. Feet orange. White-fronts have only one molt, at the close of the breeding season, usually complete by early fall. The flightless period is during July and August.

Juvenile—Similar to adult, but the heavy blotching on the breast and white at base of bill are lacking. A plain, dull-colored bird with dull orange or yellow feet and bill.

FIELD MARKS: A medium-sized goose that flies in rather compact, irregularly formed flocks with no apparent leadership; much "laughing" and gabbling can be heard for a considerable distance. Often seen with other geese such as snows. They are wary, however, and in flocks are found at the edge of the concentration, seldom mingling with the others. In flight they appear small. The wing-beat is not as slow and laborious as that of most geese and the body contour is more streamlined than that of the snow. When seen from below, the blotching on the under parts is often diagnostic. As with other geese, their flight speed is about 50 miles per hour. They take off by taxiing for a distance but rise from the water more easily than do Canada geese. White-fronts are the only wild geese that have orange or yellow feet.

CALL: Wah, wahaa, usually uttered two or three times.

MIGRATIONS: Usually a little later than snow geese; though a few may be found during the height of snow goose flights, most arrive between the middle of March and the first part of April. A few occur in Iowa during the fall but they are not as common as during the spring and only a few find their way into the sportsman's game bag. The fall flight occurs from mid-

October to the first part of November. During migrations they are found in small flocks, seldom more than 25 to 30 individuals. In central Nebraska the white-fronted goose is the most common species found along the Platte River.

BREEDING: *Range*—Nearly circumpolar on the Arctic coasts, from northeastern Siberia to the Mackenzie and south to the Yukon Valley. *Nest*—Lined with grasses and moss, and, as the number of eggs increases, down is added. *Eggs*—4 to 7, creamy white becoming stained; incubation period about 28 days. *Downy young*—Resemble young Canada geese but are darker, a dull olive or buff-olive with bright yellow under parts.

WINTER RANGE: Mainly along the Gulf Coast of Louisiana and Texas, southern California, and rarely as far north as southern Illinois.

FOOD: Grasses, grains, seeds, and almost any other vegetable matter that suits their fancy; also a small amount of insects and other animal matter.

IOWA STATUS: The white-fronted goose is not uncommon in Iowa; single birds and small flocks are seen during spring migrations, the greatest abundance being along the Missouri River with smaller numbers in the central part of the state and on the Mississippi. Some years few white-fronts are seen in the fall; other years they are taken in numbers.

ROSS' GOOSE

Anser rossii CASSIN

Length: 21 to 26 inches Weight: 3¼ to 4 pounds

DESCRIPTION: *Adult male and female*—Resemble the white phase of the snow goose except for smaller size. Iris brown. The bill is shorter (1.6 inches compared with 2.2 inches in the lesser snow goose) and in adults will have warty protuberances at the base. Bill color is slightly different—gray-lavender with a turquoise or greenish cast on the sides and warty part; center ridge and lower mandible deep pink; nail white. Grinning patch less prominent than on the snow goose. The longest feather of the three composing the spurious wing (on the bend of the wing) is dark gray in the Ross' goose; all three feathers are plain gray in the snow.

Juvenile—Similar to juveniles of the white phase of the snow goose except for smaller size, shorter bill, and somewhat lighter gray plumage; shoulder white (on the juvenile snow it is gray); longest feather of the spurious wing dark gray against a background of pale gray primary coverts. No horny protuberances on bill.

Hybrids—As Ross' geese have begun to use flyways in the central part of the country during recent years and to share nesting grounds with snow geese, the two species have begun to interbreed. Occasionally observers see, or hunters take, birds that are intermediate in size—smaller than a snow goose but larger than a Ross' goose. Sometimes these birds will have a bill

resembling the Ross' goose more than the snow. Although white hybrids have been reported, it is possible that the Ross' goose is also hybridizing with the blue phase of the snow goose. Among some observers, the hybridization of Ross' geese with snows raises the question whether Ross' geese using flyways in the central part of the country will survive as a separate species; it is considered possible that, by interbreeding, they may become part of the great body of snow geese, no longer distinguishable as a species.

FIELD MARKS: Difficult to distinguish in the field unless seen side by side with snow geese of ordinary size, in which case the Ross' goose's distinctly smaller size and smaller bill are sometimes diagnostic.

CALL: A weak, grunting noise.

MIGRATIONS: The traditional migration of the Ross' goose goes from its breeding grounds southwestward to wintering grounds along the Pacific Coast, chiefly in central California. During recent years, however, increasing numbers have been observed in flocks of snow geese in the central part of the country and wintering with these birds.

BREEDING: *Range*—Mostly central Arctic Canada; a few breed on Southhampton Island and the McConnell River on the west coast of Hudson Bay. *Nest*—Moss, dead leaves, twigs, grass; lined with down, largely after the last egg is laid. Sites near rocks or patches of birch. *Eggs*—Average about 4 per nest, up to 6; white; hatch in about 22 days. *Downy young*—Resemble the white phase of the snow goose, but smaller and somewhat more gray; head bright canary yellow with small blackish spot in front of each eye; bill black with flesh-colored tip.

WINTER RANGE: Most Ross' geese winter in central California, but those that migrate with lesser snow geese through the central part of the country winter with them.

FOOD: Similar to snow geese.

IOWA STATUS: Although all but one of the reports of Ross' geese seen, trapped, or shot have occurred during the fall migration, it is likely that some Ross' geese are among the large flocks of snow geese during the spring migration. Ross' geese were reported in Clinton County in 1945 and in Greene County in 1954. There are sight records of Ross' geese at Forney Lake in Fremont County in 1962, at Union Slough National Wildlife Refuge in Kossuth County in 1964, and one adult and two immatures were observed at DeSoto National Wildlife Refuge in Harrison County in 1967. An adult and two immatures were trapped at DeSoto Refuge in 1966; one of the immatures had been banded in Northwest Territories. Another immature, shot at Rockwell City in Calhoun County in 1965, had been banded in Saskatchewan. Two specimens have been collected: an adult female, taken at Forney Lake in 1972, is now a specimen in the collections of the State Conservation Commission; another adult female, shot by Carl Matherly of Des Moines near Riverton in Fremont County on November 24, 1971, is preserved in the collection of the State Historical Museum. A crippled bird was found at Forney Lake in 1967, an immature was shot at Forney Lake in 1973, an immature of undetermined sex was picked up in the refuge there

after the end of the hunting season in 1973, and another immature was taken there in 1974. Three Ross' geese were shot at the public shooting grounds at Riverton in 1974; two of these were adult females. Also in 1974, a Ross' goose was confiscated near Blencoe. In 1976, an immature bird was taken at Forney Lake. An adult female, taken at Forney Lake in 1972 and now in the possession of Don Priebe, a conservation officer, may be a hybrid between Ross' goose and lesser snow goose. The lone spring specimen was found dead in April, 1977, at Riverton.

LESSER SNOW GOOSE

(Also includes blue phase, formerly Blue Goose)

Anser caerulescens caerulescens (LINNAEUS)

PLATE ON PAGE 7

Other names, white phase: brant, white brant, snow, white wavey, California goose.
Other names, blue phase: blue goose, brant, blue wavey, white-head, white-headed goose, brant goose, blue, white-headed brant, blue brant.

Length: 25 to 31 inches
Weight: 4½ to 6 pounds

DESCRIPTION: At one time, the lesser snow goose and its blue phase were regarded as separate species, the lesser snow goose and the blue goose. They are now considered to be a single species. Because of differences between the two color phases and the distinction that still exists in the minds of many observers, separate descriptions for the color phases are given.

Adult male and female, white phase—Sexes identical except that males are sometimes larger. Primaries black. Rest of plumage white, often stained rusty on under parts and the head. Bill and feet pinkish-lavender; black on sides of bill gives an open or grinning effect. Molt begins in July; wing quills are shed during late July and early August. The new plumage is carried until the following summer.

Juvenile, white phase—White, heavily mottled with gray, brownish-gray, or brown; in some cases the greater part of the plumage is made up of these colors. Often rust stained. Bill and feet gray. During the first winter, plumage is partly mottled as the birds proceed toward adult plumage, which is not gained until at least the second season.

Adult male and female, blue phase—Sexes practically identical, male often slightly larger. Head and neck white, often stained rusty. Back and sides blue-gray, in some cases with a slight brownish tinge. Tail and rump light gray. Under tail coverts white. Wings light gray; primaries black. Scapulars, often hanging down, slate-colored edged with light gray or white.

Under parts (and sometimes other parts of the body) usually heavily tinged with rust, though some birds may show little or no rusty stain. Bill and feet pinkish-lavender, bill with black sides giving an open or grinning effect. In no other bird of the waterfowl family is there as much plumage variation as among blue phase snow geese. Some have white on the under parts, some show considerable white on the back, and some are almost all white with the exception of the wings, which remain typical of the blue phase. Molt is during July and August; wing quills are shed in late July or early August. New mature plumage is usually complete before the fall migration starts.

Juvenile, blue phase—Uniform slate-gray, darker on the back, with a brownish cast or edging. Under parts gray, lighter on the belly. Wings light gray with black primaries. Chin white. Bill and feet plain gray. This plumage is molted during the first winter, with white feathers appearing on the head but not running down on the neck as in adults. Adult plumage is probably not gained until the third year. Individual birds show considerable variation in their progress toward mature plumage.

Hybrids—At the time the snow goose and blue goose were regarded as separate species, it was contended, and observations on some of the nesting grounds confirmed, that the two do interbreed. Some blue phase snow geese show considerable white in their body plumage, and some that were regarded as true hybrids have white mixed in the wing plumage also. Further study has indicated that blue and snow geese are indeed one species and that birds formerly considered to be hybrids are, instead, intermediate in plumage between the color phases.

FIELD MARKS: A small to medium-sized goose, occurring in large flocks that sometimes number into the hundreds of thousands; usually both color phases. They fly in long, waving lines—from which comes their name "wavey". Flight speed averages 40 to 55 miles per hour. They often perform aerial maneuvers, such as side-slipping to lose altitude, and frequently change positions in the flock. It has been assumed that large flocks are led by old ganders, but observers have seen the leaders change frequently and at times the flocks appear to have several birds in the lead. While in flight they are very noisy, calling and gabbling almost continually among themselves. Snow geese prefer to feed in grain fields, on marshlands, and on open pastures, particularly if these places are partly flooded with shallow water, and often go to large sand bars to obtain gravel and to roost. Though they are not nearly as wary as the Canada goose, a large flock can seldom be approached easily.

The white phase of the snow goose is identified by its white plumage and black wing tips, easily seen even at a distance. It, and the smaller Ross' goose, are the only geese in Iowa that have such plumage. In the field the snow goose and Ross' goose are difficult to distinguish, though any noticeably smaller white goose is probably a Ross' goose. The snow goose's black-tipped wings make it easy to distinguish from swans, as does its smaller size.

In the blue phase, the white of the head, in contrast to the gray underparts, makes for easy identification even at a distance.

CALL: Au-unk, au-unk; and kuk, kuk, kuk.

MIGRATIONS: Snow geese leave their wintering grounds the latter part of February, arriving at Squaw Creek Refuge near Mound City in northwest Missouri by the last of the month or the first of March, then pushing up into Iowa whenever open water and weather conditions allow. Peak of the migration along the Missouri is about the middle of March. In the central part of the state, the birds usually arrive somewhat later than the main flight along the Missouri and linger a little longer, sometimes until mid-April. (For a more complete discussion of the spring migration, see Chapter IX.)

In the fall, snow geese leave their nesting grounds during September and early October and arrive at their wintering grounds about a month later. Small flocks will arrive in Iowa as early as mid-September, with the main part of the flight about the middle of October; some birds remain in western Iowa until late December.

BREEDING: *Range*—Arctic coast of Alaska and Canada to Baffin Island and Southampton Island and along the west side of Hudson Bay. *Nest*—On the open tundra bordering rivers and bays; composed of grasses and other vegetation, well lined with down. *Eggs*—Usually 5 or 6, white; those of the white phase are sometimes creamy and stained; those of the blue phase are white at first and develop a slightly bluish cast, minutely pitted or granulated. Nesting is underway by the latter part of June; incubation period is about 22 days. *Downy young*—White phase, olive-buff mixed with pale yellow on throat and cheeks; under parts pale buff mixed with pale yellow. Blue phase, olive-green, darkest on upper parts, with a small white spot on the chin; yellowish under parts.

WINTER RANGE: More than two-thirds of all snow geese, those that nest in the central Arctic regions and migrate through the central part of the country, winter in southern Louisiana and Texas along the Gulf of Mexico. During recent years they have mostly abandoned their former wintering grounds on the coastal marshes of these states and have, instead, been wintering in rice field areas just north of the marshes. Some flocks, numbering several thousand, have spent most or all of the winter in Kansas, Oklahoma, Nebraska, western Missouri, and southwest Iowa. Other snow geese, especially those that nest in western Arctic Canada and Alaska, winter in the Central Valley of California.

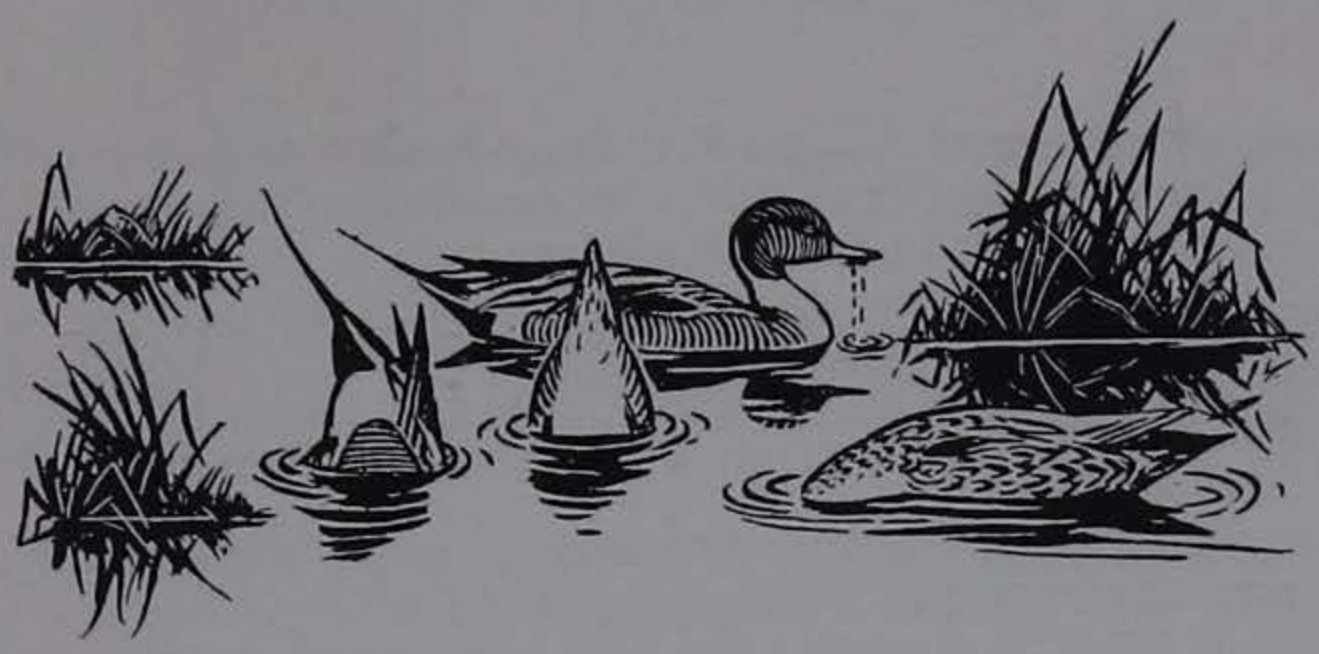
FOOD: Mostly grain, weed seeds, and grasses. If available, sprouting grain and corn form a large part of their diet.

IOWA STATUS: The snow goose is the most abundant goose migrating through Iowa. In the spring, flocks numbering as high as 15,000 to 20,000 are commonly seen; some concentrations may cover 15 to 20 acres. Although it was once believed that the snow goose was a rare bird and the migration up the Missouri was of rather recent occurrence, old residents of the area knew of the flight long before bird watchers and sportsmen did. Small numbers also migrate up the Mississippi and during recent years good-sized flocks have been seen in central Iowa.

Some birds in small flocks may remain around Iowa streams, ponds, and

marshes as late as the middle of May. In the past some observers thought they nested here. These, however, are probably young birds or birds so weakened they cannot keep up with the regular migration.

In the fall, most snow geese formerly passed over Iowa at heights from 800 to 1,500 feet in an almost nonstop flight from their breeding grounds to their wintering grounds, but in recent years more and more geese have been stopping in all parts of the state. Hunting for them is often very successful along the Missouri River and in the Riverton area, with fair numbers being taken in the central part of the state and even as far east as the Mississippi River.



CHAPTER III–SURFACE FEEDING DUCKS

MALLARD

Anas platyrhynchos platyrhynchos LINNAEUS

PLATE ON PAGE 25

Other names: French duck, greenhead, green-headed mallard, red-legged mallard, wild duck, cornfield mallard, northern mallard, gray mallard

Length: 22 to 24 inches
Weight: 2½ to 3½ pounds

DESCRIPTION: *Adult male*—Head rich green separated from maroon breast by distinct white band. Under parts and sides gray, finely marked. Back gray mixed with brown. Upper and under tail coverts black with greenish iridescence, upper tail coverts forming distinct curl in adult birds. Speculum metallic blue edged on both sides with white. Iris brown. Bill yellow to olive-green. Feet orange to reddish-orange.

Male in eclipse plumage—Resembles the female but considerably darker; head mixed with black and green. Gray feathers of adult plumage are partly retained in some cases, and some individuals show little or no eclipse plumage. Eclipse plumage is worn from June to October with adult plumage being regained during October and November and most males in full plumage by the end of November. Wing quills are shed in late July or early August and birds are comparatively flightless for a short time.

Juvenile male—Similar to the eclipse male, but retains this plumage later than do adult birds and generally shows brown mixed with the green on the head. Sides, under parts and breast mottled with brown until December, sometimes until spring. Curl of upper tail coverts lacking.

Female—Entire body plumage, except wings, brown mottled with tan and buff. Wings gray; speculum iridescent blue edged with white on both sides. Bill orange mixed with black. Iris brown. Feet orange to orange-red.

Females can always be distinguished from juvenile or eclipse plumage males by bill coloration, and from their darker relatives, the black ducks, by the distinct white edging on the speculum.

FIELD MARKS: A large-sized duck found in all types of habitats, varying from marshlands to open streams and small lakes, but preferring marshlands. It often feeds in grain fields, particularly during late fall and early spring.

Mallards are wary, circling several times before alighting; in areas much shot-over, they will feed during early and late hours of the day, avoiding dangerous areas in daylight. They often congregate in large flocks, usually in company with black ducks and pintails, but the larger part of such flocks is generally mallards.

Flight speed of the mallard is between 45 and 60 miles an hour, but because of the duck's large size, it appears much slower. Mallards rise from the water with no difficulty, jumping several feet into the air before gaining full speed, often uttering quacks of alarm. They procure their food by tipping up in shallow water and by shoveling up seeds and animal matter on shore.

CALL: A quack as in the common barnyard duck (male: ack, ack; female: quack, quaack).

MIGRATIONS: Spring migration starts with breaking up of the ice, the main flight arriving in early March. Most birds are already paired by this time. In fall starts migrating in September and early October, reaching its greatest concentration from the first to the fifteenth of November, lingering in many localities where suitable food and shelter can be found until driven out by snow or cold weather.

BREEDING: *Range*—Northern part of the northern hemisphere; in America, mainly west of Hudson Bay and the Great Lakes, south to central or southern Iowa, southern Illinois, and lower California. *Nest*—Near a shallow pond or marsh, well hidden in vegetation; a hollow on dry ground, lined with grasses and weeds and filled with down. *Eggs*—6 to 12; buff to olive-green; laid during May or June; hatch in 27 to 29 days. Where mallards are numerous, two females will often use the same nest, so that some nests may contain as many as 23 eggs. *Downy young*—Dark olive-brown upper parts; yellowish under parts; yellow spots on body at rump and wings; dark stripe through eye.

WINTER RANGE: Practically all of North America south of Canada where suitable habitat can be found; needs only an available supply of food and water. During recent years when use of mechanical corn pickers has become almost universal, considerable grain has been left in fields and mallards, feeding on this grain, have wintered in large numbers where formerly they were found only occasionally.

FOOD: Principally grain, seeds, roots, and other parts of water plants; also snails, insects, and larvae of mosquitoes and other aquatic animal life. Mallards prefer a vegetable diet and it is surprising the amount of corn or smartweed seeds they can consume. Often they gorge until a distinct bulge can be seen in the necks of flying birds.

IOWA STATUS: The mallard is one of the most common spring and fall migrants and perhaps the most important wild duck to the sportsman. It nests in the northern part of Iowa and a few are found nesting in the central and southern parts of the state. In winter, large numbers remain on lakes and rivers in all parts of the state as long as weather conditions are favorable, with flocks sometimes as large as 40,000 to 225,000 in the Forney Lake area in Fremont County if there is open water.

Sportsmen commonly believe there are several species of mallards, calling them the big northern mallards, grass mallards, cornfield mallards, and red-legged mallards. Actually they are all one species. Variations in size and coloration relate to the age of the birds and their condition. Those taken in the early part of the season, which are small with light orange feet, are probably young birds or birds raised locally.

Beginning in 1970, the State Conservation Commission has attempted to establish mallards as nesting birds in parts of southern Iowa where they were not commonly nesting birds, first at the Rathbun impoundment on the Chariton River, and later on farm ponds. The birds used for this experimental stocking were obtained from the McGraw Wildlife Foundation in Dundee, Illinois. Some of these mallards are half wild strain mallard and half game farm birds, the others three-fourths wild strain. Unlike wild mallards, these birds are accustomed to confinement. Adult hens of the McGraw strain were stocked, the hope being that wild drakes would mate with them and that young hens from their progeny, which would be free to migrate, would return to the area to nest. After evaluation of two years of the program at Rathbun, the program has been expanded to farm ponds, where mallards had seldom nested in the past. The McGraw Foundation has cooperated in funding, and more birds, both adults and four-week-old ducklings, are being released. Young produced in the program have been banded and also marked with plastic nasal saddles. Although only one of the banded hens has been taken in traps in southern Iowa, free flying mallards are breeding in the areas involved in the experiment, and there is evidence that the program is working.

BLACK DUCK

Anas rubripes BREWSTER

PLATE ON PAGE 25

Other names: black mallard, dusky duck, black, common black duck, red-legged black duck

Length: 19½ to 24 inches
Weight: 1¾ to 4 pounds

DESCRIPTION: *Adult male*—Dark dusky brown in general body plumage; head light gray to pinkish-buff, finely speckled with black. Speculum bluish-purple, bordered in front and behind with indistinct black bars and often tipped on the outside edge with a fine white border. Iris brown. Bill yellow to olive. Feet coral-red to brownish-red. Males can be

PLATE II

PINTAIL
MALE DURING AUTUMN MOLT

PINTAIL
MALE SHOWING RUST STAINS

PINTAIL
ADULT MALE

PINTAIL
JUVENILE MALE

PINTAIL
FEMALE

MALLARD
ADULT MALE

MALLARD
MALE IN ECLIPSE PLUMAGE

MALLARD
FEMALE

BLACK DUCK
ADULT MALE

BLACK DUCK
JUVENILE

distinguished from juveniles and females by a buffy U-shaped marking on the center of the feathers on sides and chest.

Male in eclipse plumage—Resembles adult plumage except that feathers of sides and chest are plainly dusky, lacking the central U-shaped markings of breeding plumage. Birds are found in this plumage from June to September. Wing quills are shed in July or August, and birds are flightless for a short time. Adult plumage is showing by early September and full plumage is usually complete by the first of November.

Juvenile males—Similar to adult except that feathers of sides and chest are widely margined with buff and usually lack the central buff marking. Head and neck are darker in color, bill more olive-green. Feet reddish-brown.

Female—Similar to male except that feathers of sides and chest show a distinct V-shaped central buffy marking. Bill greenish to olive-yellow, often having a dusky blotch on the upper mandible. Very old birds often have a plain yellow bill. Feet brownish to brownish-red; there is a great variation in foot color of the female black duck.

FIELD MARKS: Usually found in company with mallards and are easy to distinguish from them by the black duck's dark coloration. Black ducks are found in any habitat frequented by mallards, particularly flooded fields, marshes, ponds, or fields with a considerable amount of waste grain. In flight, the white or silvery under surface of the wings is a distinctive and easily noticed field mark. Black ducks are wary, even more so than mallards, having little trust of any suspicious object. General habits are similar to the mallard.

CALL: A quack, similar to that of the mallard.

MIGRATIONS: Black ducks are not numerous in the spring, but a few pairs are usually seen among large concentrations of mallards or other surface feeders during March. Fall flights appear in Iowa during early October, the flight thinning out about the first of November. Many of the birds taken at this time are juveniles or adults in partial plumage. There is another influx the latter part of November and a few will remain as long as mallards and other surface feeding ducks do, sometimes until late December.

BREEDING: *Range*—Eastern North America as far south as Ohio, northern Illinois, Wisconsin, and Minnesota, west to North Dakota, and north to York Factory on Hudson Bay and Laborador. *Nest*—Similar to that of the mallard, usually built near a lake or stream, well concealed in surrounding vegetation and constructed of grasses and heavily lined with down. *Eggs*—6 to 12, similar to mallard, varying from dull white to pale greenish. Incubation period, 26 to 28 days. *Downy young*—Resemble young mallards but are less yellow on under parts.

WINTER RANGE: Eastern North America along the coast, west to Iowa and Nebraska, but rarely west of the Mississippi Valley.

FOOD: Grain, seeds of aquatic plants, bulbs, and roots; also a few snails, insects and larvae; particularly fond of smartweed seeds. At times

black ducks feed in corn fields, gorging on waste grain. Their superior size and the fine quality of their flesh make them excellent table birds.

IOWA STATUS: Formerly classed as an uncommon migrant, but black ducks have become more common in recent years and good flights of mallards will usually have a few scattered black ducks. There are few breeding records in Iowa—one nest on Trumbull Lake in Clay County in 1933, and downy young reported on the Mississippi River bottoms. Occasionally black ducks have been seen in northwest Iowa during the summer, but whether they actually nest is unknown.

GADWALL

Anas strepera LINNAEUS

PLATE ON PAGE 31

Other names: gray duck, gray wigeon, redwing

Length: Males 20 to 22 inches; females 18 to 21 inches
Weight: Males 2 to 2½ pounds; females 1½ to 2 pounds

DESCRIPTION: *Adult male*—The dullest-colored male of any species of surface-feeders; general body plumage gray and grayish-brown heavily mottled, sides dark gray finely penciled with white, under parts white. Under tail coverts black. Head somewhat puffy, giving the appearance of a slight crest, with old birds often having a pinkish or purplish iridescence. Shoulders of the wing rich reddish-brown; speculum half white and half black. Bill dark brown or black; in most cases the lower mandible is yellowish or orange at the base. Feet bright yellow-orange with dusky webs.

Male in eclipse plumage—Similar to adult male except that many mottled brownish-edged feathers are scattered through breast and sides. Eclipse plumage in some birds starts during the last of May and is carried as late as September, sometimes November. Old males are usually in full plumage by the first of November. During August, flight feathers are molted and the birds are flightless for a short time.

Juvenile male—Closely resembles the adult male in eclipse plumage. Juvenile plumage is carried through the fall and most of the winter, usually until early spring, when it is replaced by breeding plumage. Juvenile plumage is much duller than that of the adult bird, showing many mottled brown feathers on the sides. The reddish-brown feathers of the shoulders are not nearly as numerous as in the adult; often there is only a slight tinge of reddish. Speculum similar to that of the adult male, with the black sometimes partly replaced with gray. Bill usually more brown than black with considerable yellow on the lower mandible.

Female—Mottled brown and gray similar to plumage of the female mallard. The bill, however, is yellowish-brown to brownish-orange and speculum white and gray or white and black, varying considerably among individuals. Under parts vary from white to tan; in some cases, mottled.

FIELD MARKS: Resembles a mallard but is considerably smaller, the wings proportionately longer, wingbeats more rapid. White of the speculum shows very plainly in full flight or as the bird springs from the water. At rest on the water gadwalls seem well balanced, riding evenly with the neck extended, somewhat resembling a pintail in this respect. At a distance drakes usually seem an even dark color, particularly near the tail, the neck appearing slender and the head somewhat puffy. Gadwalls leave the water with little or no difficulty, vaulting into the air. In flight the gadwall is fairly swift, from 25 to 65 miles an hour. They are wary, circling an area before alighting and soon becoming suspicious of decoys. Feeding, they associate with other ducks, particularly baldpates and pintails, and prefer marsh habitats and small ponds or lakes. They usually secure their food from the surface of the water, doing less tipping up than other surface-feeding ducks.

CALL: Quack similar to a mallard but more shrill: kack, kack, kack or whack, whack, whack.

MIGRATIONS: A rather late migrant, seldom arriving before the middle of March, with most of the flight arriving the latter part of March to the middle of April. The fall migration is somewhat scattered, the main flight occurring from the middle of October to the tenth of November, though some birds are seen as early as late August.

BREEDING: *Range*—Nearly cosmopolitan in distribution, probably having the widest range of any species of duck. Breeds in many temperate regions of the northern hemisphere, occasionally as far north as Hudson Bay and as far south as the central states. In the United States, nesting is mainly west of the Mississippi River. *Nest*—Located near a pond or marsh, hidden in a clump of grass or weeds or under small bushes; a hollow on dry ground, lined with grass and an abundance of down. *Eggs*—7 to 12, usually white or pale buff. Incubation period about 28 days. Gadwalls are late breeders, not nesting until June or early July. *Downy young*—Pale yellow on under parts, sides, and head, with a dark stripe on the nape of the neck; upper parts brownish-olive.

WINTER RANGE: Southern United States and Mexico, sometimes as far north as southern Illinois.

FOOD: Primarily a vegetable feeder, which makes the gadwall's flesh very palatable. Food consists mainly of water plants, roots, and stems; it feeds on seeds much less than do other surface feeders. Occasionally takes animal food such as snails, water insects, and small crustacea.

IOWA STATUS: A rather uncommon duck in the eastern part of the state, seen only as individuals or in small flocks, never in numbers equaling the baldpate. More common in central and western parts of the state; most abundant in the northern lake region, where it occasionally nests.

EUROPEAN WIGEON

Anas penelope (LINNAEUS)

PLATE ON PAGE 31

The European wigeon is included in this book because it occurs irregularly in Iowa and some of the surrounding states—Nebraska, Missouri, Illinois, and Wisconsin. Sportsmen have told the authors of one specimen shot in Washington County, but no further information is available. A male European wigeon in full plumage was killed in October, 1933, by George Van Wyngarden while hunting ducks at North Twin Lake, Calhoun County; this bird was shot from a flock of four that flew over, and all appeared identical. One was observed in the spring of 1947 at Black Hawk Lake by conservation officer Jerry Kelley, and another was seen in the spring of 1961 near Iowa City. On May 13, 1939, the authors, standing on the Iowa-Minnesota boundary line north of Spriit Lake, observed an adult male in full plumage a short distance north of the state line in Minnesota.

The adult male of this species is easily identified by its rusty red neck and head, crowned with a cream-colored patch, a grayish body shading into pinkish-gray on the breast, and white under parts. Females, however, might be confused with female American wigeons, although the European bird is browner. The main difference is the axillary feathers, which on the American wigeon are white or lightly mottled with gray; those of the European bird are heavily mottled with gray. This marking would be helpful, of course, only if the bird were in the hand. Sportsmen and bird students might watch for this species in order to establish more definite records for Iowa.

AMERICAN WIGEON

Anas americana (GMELIN)

PLATE ON PAGE 31

Other names: wigeon, baldpate, green-headed wigeon, whistler, pearl bill

Length: 18 to 22 inches
Weight: 1½ to 2½ pounds

DESCRIPTION: *Adult male*—Head light gray finely speckled with black, with a rich, greenish iridescent patch running from eye to nape of neck. Top of head creamy white. Bill light gray. Iris brown. Breast, sides, and back dusty rose; back and sides finely barred with black. Under parts white. Under tail coverts black; upper tail coverts gray. Central tail feathers slightly elongated, forming a rather acute point. Shoulders gray or white. Speculum black with distinct greenish iridescence. Feet gray.

Male in eclipse plumage—The eclipse plumage, from June to October, resembles the female or juvenile male. In most cases the cream-colored

PLATE III

WOOD DUCK
MALE IN ECLIPSE PLUMAGE

WOOD DUCK
FEMALE

WOOD DUCK
JUVENILE MALE

WOOD DUCK
ADULT MALE

AMERICAN WIGEON
FEMALE

AMERICAN WIGEON
ADULT MALE

AMERICAN WIGEON
MALE DURING AUTUMN MOLT

EUROPEAN WIGEON
ADULT MALE

GADWALL
FEMALE

GADWALL
MALE DURING AUTUMN MOLT

GADWALL
ADULT MALE


Maynard F. Reece

patch on the top and the green on the sides of the head are entirely lacking, being replaced by mottled gray. Sides and back are heavily mixed with mottled brownish feathers; white shoulders partly replaced by gray. Some birds carry the eclipse plumage until late in the fall, but most regain adult plumage in October and November. Primaries and secondaries are shed in August and the birds are flightless for a short time.

Juvenile male—Usually similar to the female, mainly brown and gray mottled, with white under parts. Head and neck gray, heavily speckled with black. Shoulders gray, often showing traces of white as in the adult. Speculum black with traces of green iridescence. Bill and feet gray. This plumage is carried into December and January, when young birds begin to resemble adult males with exception of the shoulders, which still are mostly gray instead of white as in the adult male.

Female—Head and neck grayish-brown heavily speckled with black. Breast, sides and back mottled with tan, gray, and brown. Under parts white. Shoulders gray. Speculum plain black, often with a grayish cast, in most cases showing some green iridescence. Iris brown. Bill and feet gray.

FIELD MARKS: A medium-sized duck that prefers open marshes, ponds, and lakes. Often found in company with diving ducks, robbing them of vegetation they have brought up from the bottom; at other times it is found in company with other surface-feeding ducks, associating with gadwalls, pintails, wood ducks, and teal. American wigeons are seldom found in large-sized flocks—usually from 6 to 8 to 20 birds at most. In flight, the white shoulders of the males are easy to see, even at great distances. American wigeons are rapid fliers, sometimes reaching speeds as high as 65 miles an hour, but their general speed is much slower. They rise from the water with a spring, jumping several feet into the air and gaining altitude rapidly. They are poor divers, securing food by tipping up in the shallows or by getting what they can steal from diving ducks in deeper water.

CALL: Male a melodious whistle; female a low, guttural croak.

MIGRATIONS: In spring they seldom appear before the middle of March, most of them arriving during the last days of March and the first days of April. Migrate early in the fall, some birds arriving the latter part of August, although most do not come until the middle of October.

BREEDING: *Range*—Northern North America east to Hudson Bay, south to the central states. *Nest*—Built on dry ground, often at a distance from water; composed of grasses and weeds, lined with gray down. The American wigeon is a rather late breeder, nesting during the latter part of June. *Eggs*—9 to 12; cream color varying to nearly white. Incubation period 24 to 25 days. *Downy young*—Dark olive-brown with a spot of buff or olive-buff on wings and sides of the back and rump; lower parts of head and neck buff; top and sides of head streaked with olive-brown.

WINTER RANGE: North America as far north as the central states depending entirely upon weather conditions, but seldom as far north as Missouri. Most winter in the southern states.

FOOD: Almost entirely water plants. American wigeons consume larger quantities of leaves and roots than do most other surface-feeding ducks; seeds, insects, and mollusks make up only a small part of their diet. The large amount of vegetable food eaten by these birds gives a delicate flavor to the flesh. They are held in high esteem by sportsmen.

IOWA STATUS: Although the American wigeon is a common migrant both spring and fall, it does not appear in nearly the numbers that the teal, mallard, and pintail do, and seldom can be classed as abundant. At one time American wigeons probably nested in northern Iowa, but the only recent records are in Kossuth County in 1961 and in Worth County in 1965.

PINTAIL

Anas acuta acuta LINNAEUS

PLATE ON PAGE 25

Other names:
sprig, spike

Length: 22 to 30 inches
Weight: 1 to 2¾ pounds

DESCRIPTION: *Adult male*—Head dark grayish-brown glossed with lavender and green iridescence, darker on the crown and running down the back of the neck to form a rather dark stripe shading into black on the nape. Breast, under parts, and neck white, running well up and forming a stripe on the sides of the head. Sides and back gray, heavily barred with black. Scapular feathers long, black, edged with light gray, occasionally hanging down. Under tail coverts black. Tail black; central tail feathers elongated forming a distinct spike. Wings gray. Speculum iridescent green or bronze, outer edge white, inner edge cinnamon. Bill marked with a dark stripe down the center, pearl white on the sides and the remainder bluish-gray. Iris brown. Feet gray.

Male in eclipse plumage—General body plumage grayish-buff mottled with brown. During this stage males lose most of their beautiful plumage, including the brown coloration of the head and the long spike feathers of the tail. White under parts are replaced by mottled feathers and the only indications of full plumage are a few mixed gray-barred feathers and the iridescent bronze or green speculum. This plumage is worn from June to November, with adult plumage complete the latter part of November or middle of December. The long spike tail is usually the last of the adult plumage to appear. Pintails are flightless for a short time during August when the wing quills are shed.

Juvenile male—Gray mottled with brown and buff running to dark gray on the back. Head and neck gray-brown streaked with brown. The only indication of male sex is the iridescent green or bronze speculum. Through the fall months this plumage undergoes constant change, white feathers appearing on the neck and breast and brown feathers replacing mottled feathers of the head. Adult plumage is not complete until early spring, when young and adult males are practically indistinguishable.

Female—Mottled brown, gray, and buff; darkest on the back, shading to light gray or light mottled tan on the under parts. Head brown or sandy. The main distinguishing mark of female pintails is the dull brownish or grayish-brown speculum with little or no iridescence, edged with tan on the inner border and white on the outer edge. Females lack the long central tail feathers of the male, but these feathers are considerably longer and more acute than in most ducks. Iris brown. Bill and feet blue-gray.

FIELD MARKS: The long, streamlined build of the pintail is distinctive enough to identify it among other ducks. The neck is longer than that of the average duck, the body more slender. It has a more graceful appearance than other birds with which it associates. During spring months the white breast plumage of the males can be seen for a considerable distance. They are often found in large flocks, sometimes numbering well into the hundreds, and at other times in smaller groups or pairs. They are more numerous in spring than in the fall, preferring marshy habitats and flooded fields where they feed by wading in shallow water or by tipping up. They are expert fliers, traveling at rates of 50 to 65 miles per hour. During mating season much of their courtship is performed in the air. The percentage of males to females is high during this season, sometimes as many as eight males to one female. They are cautious birds, seldom trusting decoys and circling several times before alighting.

CALL: Low, mellow whistle; a vibrating rattle or a low, purring quack often heard during the spring flight.

MIGRATIONS: Pintails are among the earliest of waterfowl to migrate in the spring, often arriving in late February. They are generally numerous by the middle of March, most of them having passed through Iowa by the first of April. During the fall months the greatest abundance occurs from the middle of October to the middle of November. During the fall migration pintails are often found in company with mallards, but in spring seem to prefer their own company, forming very large flocks.

BREEDING: *Range*—The pintail is circumpolar, having one of the widest breeding ranges of any North American duck; nests from the northern part of the central states northward. *Nest*—On dry ground, often at some distance from the shores of sloughs and ponds; well underway by the middle of May; skillfully hidden in weeds and grasses or under small shrubs. Composed of dead grasses and lined with down. *Eggs*—6 to 12, pale olive-buff; incubation period 22 to 23 days. Young leave the nest soon after hatching. *Downy young*—Upper parts brown; under parts gray; chest buff. A light stripe runs through the eye with two dark stripes below.

WINTER RANGE: As far east as the Atlantic Coast and in the interior north as far as southern Iowa and southern Illinois; more common in western United States than in the east.

FOOD: Pintails prefer a vegetable diet, feeding largely on seeds, roots, and leaves of water plants, but are also fond of grains such as corn, soybeans, wheat, and during seasons when fields are flooded they spend a good share of their time feeding in such places. Also consume a small amount of animal matter—water insects, crustacea, and larvae.

IOWA STATUS: One of the commonest spring migrants. Common during the fall, but it is not found in nearly the numbers that it is during the spring months. Occasionally nests in northern Iowa and was probably a common breeder in former years. Although the pintail is an important game bird in Iowa, it does not rate as high in the estimation of sportsmen as does the mallard.

AMERICAN GREEN-WINGED TEAL

Anas crecca carolinensis GMELIN

PLATE ON PAGE 41

Other names: green-winged teal, green-wing, teal duck, mud teal, butterball

Length: 13¾ to 14¾ inches
Weight: 10 to 14 ounces

DESCRIPTION: *Adult male*—Head rich rusty-red with a green iridescent patch on the sides running from eye to nape of neck; black feathers of nape elongated suggesting a small crest. Breast light pinkish-tan marked with small round black spots; belly white. Sides and back gray finely barred with black. Wings gray with bright green speculum edged on the inner side with light cinnamon. Iris brown. Bill and feet gray.

Male in eclipse plumage—Similar to the drab plumage of the female. Head is mottled gray mixed with brown; these colors also replace adult feathers of the body plumage. Eclipse plumage is worn from the first of July to October and often into November; by fall the brownish feathers of the head appear, at first scattered, gradually replacing the eclipse plumage. Birds are flightless for a short time during August when wing quills are being shed.

Juvenile male—Often difficult to distinguish from the adult female. Slightly darker in color on the back and lighter below, though occasionally young males have mottled plumage on the under parts. Reddish-brown feathers begin to appear on the head in early fall; adult plumage is almost complete by December.

Female—Mottled brown, gray, and tan, lighter on the under parts, in some cases almost white. Wing markings similar to the male—bright green iridescent speculum edged on the inner side with light cinnamon. During summer and early fall females, juveniles, and males in eclipse plumage are difficult to differentiate. Iris brown. Bill and feet gray.

FIELD MARKS: Their small size and preference for small ponds and marshes, together with a rather dull coloration, make green-wings easy to identify. They often appear in rather large, compact flocks or in groups of from two to eight, and come to decoys readily. Green-wings leave the water easily, quickly gaining full speed. They are thought to be among the fastest of ducks, their small size and rapid wing beats giving the illusion of very high speed. Alighting, they often hit the water at top speed.

Green-wings are often found in company with mallards, pintails, and other surface-feeding ducks. They prefer small ponds and even creeks and puddles. They feed in shallow water by tipping up or by working along the shore or on land, eating any seeds and animal matter available.

CALL: A high-pitched, rapid ack, ack, ack; a low, grunting quack.

MIGRATIONS: An early spring migrant, sometimes arriving the first week in March and reaching greatest abundance from the latter part of March to the first part of April. The main fall migration is about the middle of October but birds may be found in September and a few linger into December. They are usually more numerous in the fall than in the spring.

BREEDING: *Range*—Practically across the North American continent but sparingly in the eastern section; most now nest in northern United States and Canada. Formerly nested much farther south. *Nest*—On borders of lakes or sloughs, well concealed in long grasses and sometimes at considerable distance from water's edge. Composed of grasses and weeds with a layer of down; built in a hollow on dry ground. *Eggs*—8 to 12, occasionally only 6; light olive-buff; hatch in 21 to 23 days. *Downy young*—Brown, darkest on back and crown; under parts light brown to light buff; dark stripe on sides of head.

WINTER RANGE: Southern North America as far south as Mexico and in western United States.

FOOD: Seeds of grasses, sedges, smartweed, and many other plants that grow close to the water. Also large amounts of insects and water animals. Occasionally during spring months green-wings gorge on maggots found on decaying fish, but they prefer a vegetable diet. Although not as popular with sportsmen as the blue-winged teal, they are of fine flavor and welcome additions to the bag.

IOWA STATUS: A common, often abundant, migrant in the fall, sometimes making up a sizable part of migrating ducks during the middle of October. Still common during the spring but do not occur in nearly as large numbers as during the fall. Single individuals have been seen wintering in Iowa, and during open winters small flocks may be found in suitable localities. There are a few recent breeding records, in Greene, Cerro Gordo, Fremont, Emmet, Clay, and Dickinson Counties.

BLUE-WINGED TEAL

Anas discors LINNAEUS

PLATE ON PAGE 41

Other names: blue-wing, teal, teal duck, summer teal

Length: 14½ to 16 inches
Weight: 10 ounces to 1 pound

DESCRIPTION: *Adult male*—Head and neck gray with suggestion of lavender and greenish iridescence. White crescent-shaped mark on each side

of head at base of bill, sometimes extending to nape of neck. Edges of crescent, chin, and crown dark blackish-brown. General body plumage rich reddish-tan, varying to almost cinnamon color, heavily speckled with black. Under tail coverts black with white patch on each side where tail joins body. Back feathers margined and penciled with buff. Shoulders light blue, separated from the green speculum by a distinct white band. Bill black. Iris brown. Feet light orange with dusky webs.

Male in eclipse plumage—Similar to the female, grayish-buff mottled with dark brown. All traces of adult plumage are lost except for the wings, which retain the blue shoulders separated from the green speculum by a band of white. This plumage is assumed in July and August and is worn during the fall and often late into the winter. Full adult plumage is seldom acquired before mid-winter and sometimes is not complete until March. Flight feathers are shed in August. Light orange feet are a sure mark.

Juvenile male—Resembles the female and eclipse male, with a duller speculum than the mature bird; distinguished from the female only by brighter coloration of the wings. Feet olive-gray. Adult plumage is not assumed until the following spring.

Female—Mottled brownish-buff to buff-gray mixed with darker brown, heavily speckled and streaked on the head. Throat buff. Shoulders light blue to blue-gray separated from a greenish-gray iridescent speculum by white feathers mottled with dark grayish-brown. Wings of the female are not nearly as bright as those of the male. Bill grayish-brown to gray. Iris brown. Feet gray to olive-gray.

FIELD MARKS: A small duck found in suitable habitat, ranging from marshes, rivers, and creeks to small roadside ponds and puddles. Prefers shallow water, where it feeds by swimming along the shores with its bill partly submerged, obtaining seeds and water plants and any animal matter that may be present. Also tips up to obtain food from the bottom. Though blue-wings are fast fliers, traveling from 30 to 50 miles an hour and even more when alarmed or going with the wind, their small size gives the illusion of even greater speed. The blue-wing arises from the water with ease, taking off at a low elevation, circling about several times, and alighting with the greatest of confidence. They are very trusting, alighting with any type of decoys and often within a few feet of the sportsman. The white wing bars of the male and bluish shoulders of both sexes are very evident in flight.

CALL: Faint quacks; a rather course grunt; soft peeping notes.

MIGRATIONS: The last ducks to migrate in the spring, though a few can be seen in mid-March. Most of them arrive after the first of April, the flight reaching its height between the fifteenth and the twentieth of the month. It is one of the earliest ducks to leave in the fall, often passing through Iowa about the time of the first frost. Young birds and females have a tendency to migrate in separate flocks. During September, large numbers of blue-wings are found on shallow ponds and marshes, where they linger for a few days in their leisurely migration to the south. Migrations vary from one season to another; some years the birds are all

gone by the first of October; at other times scattered individuals and small groups are found well into November.

BREEDING: *Range*—Central North America and Canada, rarely toward the east and west coasts, occasionally as far north as York Factory on Hudson Bay. *Nest*—On grassy borders of ponds and marshes, often along roadsides or in fields, occasionally at some distance from water. Well hidden and seldom found unless the female is flushed. Built of grasses and weeds in a small hollowed-out place on dry ground, lined with an abundance of down. *Eggs*—8 to 12; vary from light cream color to pale olive; hatch in 21 to 23 days. Young remain in nest only a short time before being led away to a nearby stream or pond by the female. *Downy young*—Olive-brown, darkest on crown and rump; under parts yellow to buff-yellow; sides of head buff-yellow with dusky patch and stripe; back marked with large yellowish spots on sides of rump and at base of wings.

WINTER RANGE: Southern North America and northern South America, often as far south as Brazil and central Chile; not common north of Texas and Louisiana during the winter.

FOOD: Mainly weed seeds and water plants, some insects. During the summer large quantities of insects, their larvae, and small water animals are consumed. Blue-wings are a welcome addition to the sportsman's bag, as in the fall they are rarely out of good condition and usually have a thick layer of fat under the skin.

IOWA STATUS: Of all the ducks migrating through Iowa, the blue-winged teal is probably the most common during April and May and again during August, September, and early October. It is a common nesting species, formerly nesting in practically all parts of the state, and is still found in large numbers in the northern and lake regions. Single pairs may be found nesting in any suitable locality, but cultivation and drainage have destroyed much of their nesting grounds in Iowa.

CINNAMON TEAL

Anas cyanoptera septentrionalium SNYDER AND LUMSDEN

PLATE ON PAGE 41

Length: 16 to 17 inches Weight: ¾ to 1¼ pounds

DESCRIPTION: *Adult male*—Head, neck, and body plumage rich cinnamon-red; darker on crown and back. Blue shoulders separated from metallic green speculum by a bar of white. Bill black. Iris red. Feet dull orange with dusky webs. Cannot easily be mistaken for any other species; coloring of the adult male is distinctive.

Male in eclipse plumage—Body feathers mixed mottled buff and brown, giving the bird a coloration similar to that of the female or the female blue-winged teal. Eclipse plumage begins in June and cinnamon plumage is

regained during September but is usually not complete until October or the first of November. At this stage cinnamon males are apt to be confused with blue-wings, but generally a few cinnamon feathers can be seen and will serve to identify them. Wing feathers are molted in August.

Juvenile male—Closely resembles the female except for the wings, which are more dull in color than those of the adult male but brighter than the female. This plumage is replaced gradually during the winter by reddish feathers on head, neck, and breast; by spring young birds closely resemble the adult male except that under parts still show some dull brown feathers.

Female—Exactly like the female blue-winged teal except that sides of the head are more streaked and under parts have a more rusty tinge. Perhaps the greatest difference lies in bill length, that of the cinnamon female (46 to 50 mm.) being longer than the blue-wing female's bill (42 to 45 mm.).

FIELD MARKS: Because of its rich body coloration in contrast with the blue shoulders of its wings, identification of the adult male cinnamon teal is practically certain. The female, however, cannot be identified for certain without first having the specimen in the hand and comparing measurements. Cinnamons are swift fliers, equaling the speed of the blue-wing, about 40 to 50 miles per hour. The habitat of this bird is the same as that of the blue-wing and where it occurs it is found in company with other teal and surface-feeding ducks.

CALL: A quack given only as an alarm note; also a low, chattering note.

MIGRATIONS: Winter and summer ranges overlap to a great extent and migrations are short. The spring migration begins in March and continues until May. In Iowa cinnamon teal have been seen in October, April, and May, but appear in such small numbers that they are classed as very rare birds here.

BREEDING: *Range*—Western North America; more southerly and westerly than the blue-winged teal. *Nest*—Made of grasses, lined with down; built on ground near ponds and sloughs. *Eggs*—8 to 12; buff to almost white; hatch in 21 to 23 days. *Downy young*—Brown on upper parts, darkest on crown; dark stripe on sides of head. Yellow on under parts; yellow spots at base of wings and on sides of rump.

FOOD: Seeds, parts of water plants, insects, and other animal matter the birds are able to shovel up in shallow water. In feeding habits, the cinnamon teal more resembles the shoveler than the blue-winged teal.

IOWA STATUS: A rare straggler in Iowa, though there are numerous records, some confirmed by specimens. Many observers have reported seeing it, some rather regularly. Most of these observations have been in the western and northern parts of the state, but birds have been seen as far east as Clinton, Johnson, and Keokuk Counties. If any females have been taken, they have probably been mistaken for blue-winged teal; so far the only specimens examined have been males in more or less mature plumage. For some reason hunters have a tendency to confuse this species with the green-winged teal, probably because of the cinnamon colored head of the male green-wing. In April and May, 1976, an adult male cinnamon teal was

PLATE IV

BLUE-WINGED TEAL
FEMALE

BLUE-WINGED TEAL
JUVENILE MALE

BLUE-WINGED TEAL
ADULT MALE

BLUE-WINGED TEAL
MALE DURING AUTUMN MOLT

CINNAMON TEAL
ADULT MALE

CINNAMON TEAL
FEMALE

AMERICAN
GREEN-WINGED TEAL
FEMALE

AMERICAN
GREEN-WINGED TEAL
MALE DURING AUTUMN MOLT

AMERICAN
GREEN-WINGED TEAL
ADULT MALE

AMERICAN
GREEN-WINGED TEAL
JUVENILE MALE

NORTHERN SHOVELER
ADULT MALE

NORTHERN SHOVELER
MALE DURING AUTUMN MOLT

NORTHERN SHOVELER
JUVENILE MALE

NORTHERN SHOVELER
FEMALE

observed at Ventura Marsh in Cerro Gordo County. This bird appeared to be mated, but it was impossible to determine whether the female he escorted was a cinnamon teal or a blue-winged teal, and observers could not be certain whether the pair actually nested. In the past there have been no Iowa nesting records of the cinnamon teal.

NORTHERN SHOVELER

Anas clypeata (LINNAEUS)

PLATE ON PAGE 41

Other names: spoonbill, spoony, shovelbill, shoveler

Length: 17 to 21 inches
Weight: 1 to 1¾ pounds

DESCRIPTION: *Adult male*—Head green; breast white; under parts and sides rich reddish-brown; scapulars white streaked with black. Back grayish-brown with a slight hint of iridescent green. Shoulders light blue or blue-gray; speculum green separated from the blue shoulder by a white band. Bill black, long and broad, edged with strainers. Iris yellow. Feet orange.

Male in eclipse plumage—Starts in July and continues well into December, even later in many cases. Birds are flightless during August when primary feathers are shed. Eclipse plumage is similar to the female except that the breast is tawny reddish-brown and wings remain the same as in the adult male. Back plumage considerably darker than the female. Feet retain their orange color, but bill changes to brown or dull orange. Eye color is olive. During the fall males are found showing many stages of plumage development; they may have white on the back and breast, or greenish feathers on the head.

Juvenile male—Resembles the female, but juvenile males are slightly larger. Plumage development progresses slowly, with little change from early fall to winter. Full adult plumage is usually not gained until the second season after hatching.

Female—Light tan mottled with dark brown, lightest on under parts, may have plain buff or tan under parts. Wings the general color of the male but much duller; shoulders light blue-gray to slate-gray; speculum sometimes bright green, sometimes greenish-brown with an iridescent green cast; white wing bar is not prominent. Bill varies from grayish above and orange below to orange-brown above and orange below. Iris brown or olive-brown. Feet orange.

FIELD MARKS: A small to medium-sized duck that prefers marshlands, small ponds, and sloughs; it is seldom found on large bodies of water unless the shores are shallow and well covered with vegetation. Arises from the water by vaulting into the air and can be identified at considerable distance by the rattle of its wings during take-off. Flight is rapid, from 40 to 55 miles per hour. The large bill gives the bird an unbalanced appearance in flight. In adult plumage the white of the male is prominent both on water and in

the air. The bird's characteristic position on the water is swimming slowly along in the shallows, straining the water with its partly-submerged bill or tipping up in typical surface-feeder fashion.

CALL: Females occasionally utter a low, feeble quack and the males a guttural rattle.

MIGRATIONS: Late migrants in the spring, seldom arriving before the middle of March, when the ice is well cleared from lakes and ponds. The main flight occurs from the first to the tenth of April. The fall flight ranges from the fifteenth of September to the first of November.

BREEDING: *Range*—Temperate regions of the northern hemisphere; in North America as far north as Alaska and south to southern California; in the interior, south to northern Iowa, Nebraska, and Indiana. *Nest*—Located on land, hidden under brush or in clumps of grass, near small ponds or marshes; lined with dry grass and down. Incubation and care of the young are entirely up to the female; as soon as nesting starts, the male deserts her. *Eggs*—8 to 13; pale olive-buff to greenish-gray; nearly elliptical in shape; incubation period 22 to 24 days. *Downy young*—Olive brown, darker on the crown; olive-brown stripe through the eye. Under parts pale yellow. Light buff spot on each side of the back behind the wings and on each side of the rump. Even downy young have a large bill, though it is not as noticeable as in adults.

WINTER RANGE: Southern United States, rarely as far north as southern Iowa.

FOOD: Insects, mullusks, crayfish, seeds of smartweed, pondweeds and grasses, roots, algae, and any other animal or vegetable matter found in shallow water. At times they feed almost entirely on animal matter, and because this does not make for good tasting flesh, this fowl is not especially sought by sportsmen.

IOWA STATUS: Common migrant both spring and fall on many ponds and streams in the state. Occasionally nests in small numbers in the northern counties.

WOOD DUCK

Aix sponsa (LINNAEUS)

PLATE ON PAGE 31

Other names: tree duck, woody, summer duck, squealer, wood wigeon

Length: 20 inches
Weight: 1 to 1¾ pounds

DESCRIPTION: *Adult male*—Plumage most brilliant of North American waterfowl. Head crested with iridescent green, purple, and blue; white lines run lengthwise of the crest; distinct white vertical mark on sides of both the head and neck. Throat pure white; breast maroon marked with triangular

white spots; under parts white. Back and tail dark, with iridescent green and blue. Sides ocherous-buff finely barred with black; feathers farthest back broadly edged with white and black. Primaries edged with pearl-gray. Bill gaudily colored with pink, black, white, and bright yellow. Iris varies from bright red to light brown; eyelid bright red. Feet yellow-orange with dark webs.

Male in eclipse plumage—A total eclipse plumage, changing from the bright adult plumage to one resembling the female except that the bill retains its bright colors, white markings remain on sides of the head, and iris and eye ring retain their color. This plumage is worn from June through August or early September, when the bird resumes adult plumage. Flightless period, when wing quills are shed, is during July or August. At this time the birds trust their coloration and habitat to protect them from their enemies.

Juvenile male—Resembles the female but has head markings similar to the eclipse male. This plumage is molted gradually and adult plumage is complete in late October or November except that first-year males lack many of the bright plumes of the adult and usually have smaller crests.

Female—The only female duck with metallic or iridescent plumage on its body. General coloration is light gray-brown with iridescent bronze, green, or purple reflections on the back and wings. Head crested with plain gray; throat and feathers around the eye pure white. Eyelid and base of bill pale yellow. Primaries edged with pearl-gray. Iris brown. Bill and feet gray or olive.

FIELD MARKS: A medium-sized bird found in wooded habitat—small creeks, rivers, willow-studded islands, and wooded clumps in marshlands. Is occasionally found feeding in timberland, where it browses under the trees seeking acorns, and may at times be seen perching on a limb in a driftwood pile or in grapevines along river banks. The wood duck is usually a low flier. It has a long, broad tail and a rather short neck; carries its bill tilted downward more than other ducks, and the head is occasionally swung from side to side. May often be identified in flight by its peculiar call. It arises from the water with ease, either jumping into the air or making a long, sloping takeoff, winding its way expertly through the trees at a rapid pace. Flight speed is 30 to 50 miles per hour. When flushed at close range, it is a dark-colored duck with pearly-edged primaries.

CALL: A high-pitched oo-eek, oo-eek, hoo-eek, hoo-eek; cr-eek, cr-eek.

MIGRATIONS: Spring migration usually reaches Iowa by the middle of March and continues to the latter part of April. An early fall migrant in September and early October, most having passed through Iowa by the first of November. During the fall, wood ducks are sometimes seen in flocks numbering from 20 to 100, but more commonly are found in family groups or single pairs. Spring flocks are smaller, seldom more than a dozen birds.

BREEDING: *Range*—All of the United States north to southern Canada, wherever nesting conditions are favorable. *Nest*—In a cavity in a tree, usually near water but sometimes at considerable distance from it. In recent times, in boxes placed in suitable trees by interested persons. Height of nest

hole varies from 6 to 40 feet from the ground. Cavity is lined with down and bits of rotted wood. *Eggs*—8 to 15; small, rather round, shiny, and light cream color. One egg is laid each night. Incubation between 30 and 32 days, one of the longest incubation periods among ducks. *Downy young*—Dark brown upper parts and very light yellow under parts; dark line back of the eye; yellow tip on bill. Leave the nest soon after hatching by crawling with the aid of their sharp claws to the opening of the cavity and fluttering or gliding to the ground.

WINTER RANGE: Southern United States as far north as central Missouri and southern Illinois.

FOOD: Primarily acorns (which are swallowed whole) and the seeds of smartweed, sedges, and grasses; also wild grapes and other fruits; occasionally snails and insects.

IOWA STATUS: The wood duck is found during the early fall along many Iowa streams. During the spring migration it may be classed as common, but is not seen in nearly the numbers that it is during the fall. It nests in considerable numbers along the Mississippi River and around suitable streams and ponds throughout the state and is Iowa's most abundant nesting duck.

Recently wood ducks have been seen in cities in increasing numbers and are known to have nested in hollow trees or wood duck boxes some distance from the closest water. They have been seen looking over such places as the roofs and steeples of churches, though they have apparently not nested in such unconventional sites. When an old wood duck starts to lead her brood through city yards towards water, well-meaning people sometimes try to intervene and have even taken the young, in the belief that they are orphans. Wildlife officials suggest these birds be left alone. The old bird, which may fake an injury in an attempt to lead people away from her brood, usually gets her young to water and rears them successfully—but most people are ill-prepared to care for the young and, in spite of good intentions, seldom manage to raise any of them.

CHAPTER IV–DIVING DUCKS

REDHEAD

Aythya americana (EYTON)

PLATE ON PAGE 59

Other names: redhead duck, American pochard, raft duck

Length: 18 to 23 inches
Weight: 2 to 3 pounds

DESCRIPTION: *Adult male*—Head rich rusty red. Breast and lower neck dull black. Back and sides gray, finely barred. Under parts shading into light gray. Speculum gray. Iris orange-yellow. Bill gray, black at tip, with a white band separating the gray and black. Feet gray, webs dusky.

Male in eclipse plumage—Only a partial eclipse lasting from August through November. Similar to adult male but head is lighter; breast, sides, and back mixed with gray-brown. Flightless from middle to the last of August. Adult plumage regained during winter months.

Juvenile male—Resembles female except head is darker, brown in color, slightly mottled with black, and shows a few reddish feathers. Mottled on throat with buff. Traces of barred gray feathers on sides and back. Breast browner than female; black feathers begin to appear on breast and neck of young males in November, with adult plumage assumed in January. Speculum gray. Iris olive.

Female—Head gray-brown, darkest on crown, slightly mottled; often has a few white feathers in head and neck. Chin and base of bill light gray or buff. Back, breast, and sides light gray-brown. Speculum gray. Iris olive-brown. Bill and feet gray.

FIELD MARKS: A medium to large-sized duck found on both marshlands and open bodies of water such as lakes and rivers, often in company with other diving ducks. The high forehead will differentiate it from the long sloping profile of the canvasback, which is similar in color. The plain gray wings and body coloration, the bird's chunky build, and its rather large size

are characteristics easily seen in flight at a distance. Redheads are rapid fliers, leaving the water in a long sloping takeoff. Flight speed has been judged at 40 to 55 miles an hour, but redheads flying with the wind greatly exceed this speed. They are excellent divers, securing food at considerable depth and usually preferring to feed on submerged vegetation.

CALL: Guttural, rolling sound or harsh "m-e-e-w".

MIGRATIONS: The spring migration starts as soon as the ice begins to break up, the main flight coming through Iowa from the latter part of March to the first part of April. Fall migration starts in late September, reaching the central states by the first part of October. The main flight occurs between the fifteenth of October and the first of November, but many linger in suitable localities as long as there is open water.

BREEDING: *Range*—Central and western North America, south to southern Wisconsin, northern Iowa, central Nebraska, Utah, and southern California; north to southern British Columbia, central Saskatchewan, and central Alberta. *Nest*—Located among the rushes of shallow marshes and ponds where the water usually is not over a foot deep. Made of dead reeds, deeply hollowed out and lined with light-colored down, held in place by growing reeds around it. *Eggs*—Dull white, 8 to 10 and may exceed 20 in the not infrequent instances when two or more females use the same nest. Sometimes eggs of the ruddy duck and other species of waterfowl are found in these nests, but more often the redhead deposits its eggs in ruddy and canvasback nests. Incubation period about 28 days. *Downy young*—Upper parts even brownish-olive with a broad olive stripe above the eye; throat and under parts buff.

WINTER RANGE: Mainly in southern United States, probably as far north as southern Illinois and as far south as central Mexico.

FOOD: Water plants such as pondweeds, wild celery, wild rice, and smartweeds; also insects, mollusks, snails, and crayfish. Redheads prefer a vegetable diet, which gives the flesh a fine flavor; they are therefore held in high esteem by sportsmen.

IOWA STATUS: Common migrant both spring and fall in most parts of the state, but more abundant along the larger rivers and in the lake regions. Nests wherever there is suitable habitat in northern Iowa.

RING-NECKED DUCK

Aythya collaris (DONOVAN)

PLATE ON PAGE 59

Other names: ring-necked scaup, ringbill, blackjack, marsh bluebill, ringneck

Length: 15½ to 18 inches
Weight: 1½ to 2 pounds

DESCRIPTION: *Adult male*—Head puffy, having an almost crested appearance; black, but close examination will reveal purplish iridescence.

Small, triangular white spot on chin. Chestnut collar on neck; breast black; under parts white. Under tail coverts dark gray to black. Sides gray with a vertical white mark near the shoulders. Back glossy black. Speculum gray. Iris bright yellow. Bill blue-gray, marked with an ivory-white ring at the base and across the tip; nail black. Feet gray with dusky webs.

Male in eclipse plumage—Only partial, with brownish feathers on sides. Chestnut collar on neck less distinct or lacking. Head, neck, and breast black. Flightless during the latter part of August.

Juvenile male—Similar to female, but has darker body coloration. Often shows a few black feathers on head. Breast dark gray-brown, feathers tipped with gray. Under parts light gray. Iris olive-yellow. Bill may lack the distinct white band of the adult male. Feet gray with dusky webs. Attains adult plumage by late winter or early spring.

Female—Head mottled with brown, gray, and buff. Throat and feathers at base of bill buff, lightly mottled. Facial markings of the female ringneck are similar to those of the female scaup, but never white as in the scaups. Breast brown. Under parts white to gray or buff. Back brown, feathers often tipped with tan. Sides mottled down. Speculum gray. Iris olive. Bill gray with white stripe across base and tip; nail black. Feet gray; webs dusky.

FIELD MARKS: Smallest of diving ducks having a gray speculum. Males can be identified on the water by their dark backs, gray sides, and the distinct white mark at the shoulders. In flight the even, dark coloration of the back and the gray speculum distinguish ring-necks from other diving ducks. Ring-necks are found on both marshes and open lakes, but show a greater preference for marshy areas than do most diving ducks. They are excellent divers and when wounded escape by diving. Ring-necks are fast fliers, about 40 to 55 miles an hour, equaling the scaups, for which they are commonly mistaken.

CALL: Soft, purring note.

MIGRATIONS: Most ring-necks are not very early migrants, but a few appear in the spring shortly after the ice breaks up and the main flight occurs during the early part of April. In fall they arrive in Iowa the first part of October, reaching a peak about the middle to the last of the month. The migration of ring-necks probably follows different routes from one year to the next, because they are abundant in some seasons and in others almost absent. They are found in flocks of their own kind, but occasionally mingle with scaups and redheads. Many times these flocks are large, containing 50 or more birds.

BREEDING: *Range*—Central North America; main breeding range is in the Dakotas, east to northern Saskatchewan and western Ontario, west to northern California; formerly as far south as Illinois. *Nest*—Built near the shores of marshy lakes, often on an old abandoned muskrat house or in a thick clump of rushes. Composed of dead stems of reeds and grasses that form a large mass of sodden vegetation, built up above water level, lined with dark-colored down. *Eggs*—8 to 12, pale olive-buff or greenish-white. Nest sometimes contains eggs of scaups or redheads. Incubation period

26 to 28 days. *Downy young*—Yellowish-buff on sides of head and throat, darker on crown and nape. A broad band of brown extends from neck to back, which is deep olive-brown. Under parts pale buff.

WINTER RANGE: As far south as New Mexico and northern Texas, north to southern Illinois and New Jersey.

FOOD: Primarily vegetable matter, mostly large quantities of weed seeds, roots, and grasses; insects, minnows, crayfish, and snails are sometimes eaten.

IOWA STATUS: In many localities the ring-neck is a common spring migrant; in other places it is rather uncommon. Its abundance is apt to fluctuate; some years it appears in large numbers and is almost absent other years. Ring-necks are commonly taken during the open season but males are many times confused with scaups and females with female redheads, there being few hunters who recognize them. Formerly nested in Iowa regularly, but the only modern nesting records are in Hamilton County in 1960, and in Clay County in 1966, 1970, and 1973.

CANVASBACK

Aythya valisineria (WILSON)

PLATE ON PAGE 59

Other names: whiteback, can

Length: 20 to 24 inches
Weight: 2 to 3½ pounds

DESCRIPTION: *Adult male*—Head rusty-red, shading to almost black near the bill. Breast grayish-black. Sides and back light gray, finely barred with dark gray. Rump and tail grayish-brown. Under parts light gray to white. Wings and speculum gray. Iris red. Bill long and sloping; black. This bird has a decidedly long, sloping profile that clearly distinguishes it from the similarly colored redhead, which has a high, abrupt forehead. Feet gray with dusky webs.

Male in eclipse plumage—Only partial, involving a few feathers on the sides, breast, and back and lasting from August to November. Some of the light gray feathers are replaced by brownish-gray. Under parts more or less mottled with brown and gray. Feathers of the head tinged with black, giving head and neck a much darker appearance. Flightless a short time during late August or early September, when wing feathers are molted.

Juvenile male—Similar to female, but has more brown on head and back and is lighter on throat. Red of the head and white feathers on back and under parts generally show by December, when adult plumage is almost complete except that colors are duller and a few juvenile feathers are still left.

Female—Head light brown. Sides and breast olive-brown to gray-brown. Under parts light gray. Back gray, finely barred with darker gray. Wings

grayish-brown; speculum gray. Iris light brown. Bill blackish-brown. Feet gray with dusky webs.

FIELD MARKS: The long, sloping profile of the canvasback will identify it from other diving ducks. At a distance it is sometimes confused with redheads and scaups because of the similar back coloration. The canvasback has rather short wings and a rapid wingbeat. For its size it travels considerably faster than other ducks—from 60 to 75 miles an hour. Canvasbacks are excellent divers, obtaining food from the bottoms of ponds and lakes, large rivers, and open marshes. They have considerable difficulty in leaving the water, paddling for several yards before gaining full flight.

CALL: A harsh, guttural croak.

MIGRATIONS: The spring migration is underway soon after the ice goes out with the spring thaw. The fall flight of canvasbacks generally reaches its height about the 20th of October. The birds congregate on deep lakes and remain until the lakes begin to freeze. Those who enjoy the sport of hunting this bird look for it on cold, blustery days. Canvasbacks are generally found in groups of their own species, but during migrations sometimes mingle with flocks of scaups, ring-necks, and redheads.

BREEDING: *Range*—Western North America from the prairie provinces of Canada south into the central and western states and occasionally as far east as Hudson Bay, with a few as far north as Alaska. Drainage of marshlands has gradually destroyed much of the canvasback's nesting grounds. Formerly bred abundantly in the Dakotas and probably as far south as Iowa. *Nest*—In a thick clump of reeds, usually in a foot or more of water; a large, bulky mass of dead reeds with the rim well above the water level, lined with down. *Eggs*—7 to 9, drab-colored, darker than the eggs of most ducks; incubation period 28 days. *Downy young*—Have the long sloping bills typical of adults; are olive-buff on upper parts, yellowish on under parts, bright yellow on sides of head and breast.

WINTER RANGE: Southern North America, particularly in coastal areas of Virginia and North Carolina, as far south as Mexico and as far north as central Illinois and southern Iowa.

FOOD: Receives its scientific name from its favorite water plant, wild celery (*Vallisneria spiralis*), which grows on the bottoms of many lakes. When it has been feeding on this plant, many authorities consider the flesh of the canvasback unequaled. It also eats other water plants, roots and seeds, small fish, insects, and mollusks.

IOWA STATUS: A fairly common migrant, most numerous in the lake regions and along the larger rivers. Recently large rafts of canvasbacks—usually about 75,000 but sometimes as many as 140,000—have remained until mid-December in open water on the Mississippi River at Keokuk, attracted there by an abundance of fingernail clams (*Sphaerium transversam*) on which they feed; some winter along the Mississippi, wherever there is open water and food. It is a rare Iowa nester; a nest was found in the Ruthven area in 1942; a brood was observed by Bob Barratt at Goose Lake, Greene County, in 1963; three flightless young were banded by Iowa

Conservation Commission personnel at East Twin Lake, Hancock County, in 1969; and a brood was observed by Iowa State University researchers at Dewey's Pasture near Ruthven in 1972.

GREATER SCAUP

Aythya marila mariloides (VIGORS)

PLATE ON PAGE 65

Other names: bluebill, northern bluebill, broadbill, raft duck, blackhead

Length: 17 to 20¾ inches
Weight: 2 to 2¾ pounds

DESCRIPTION: *Adult male*—Head, neck, and breast black; head iridescent green. Sides and back white irregularly barred with dark gray or black. Under parts white. Tail, rump, and under tail coverts dark grayish-brown. Wings grayish-brown mottled with white specks. Speculum white, with white running out on primaries to the last two feathers. This is the most distinctive mark to help separate the greater from the lesser scaup. Iris yellow. Bill blue-gray; broader than the lesser scaup with a much larger nail, though measurements of the two species may overlap. Feet gray with dusky webs.

Male in eclipse plumage—Dark colors of the head and breast partly replaced by brown; traces often remain as late as December. Wing feathers are molted between the first and middle of August, at which time the birds are flightless.

Juvenile male—Head, neck, and breast brown mixed with black; back mottled with brown and gray. Under parts white. Bill blue-gray. Feet gray with dusky webs.

Female—Head, breast, and back brown. White at base of bill. Under parts white. Wings similar to those of the male. Iris olive-brown.

FIELD MARKS: Greater scaups are difficult to distinguish from lessers in the field unless they are observed in flight at close range, when the white of the wing, which runs out to the secondary primary, can be seen. The greenish reflection of the head should be disregarded, as in proper light many lesser scaups will show this reflection. Those well acquainted with greater scaups will find that their larger size also helps to identify them.

The greater scaup is found well out on open lakes, marshes, and large rivers in company with canvasbacks, redheads, and lesser scaups. They are excellent divers, securing their food from the bottoms of lakes and streams. Flight speed is equal to that of most diving ducks and, when the birds are traveling with the wind, probably exceeds 65 to 70 miles an hour. They often come in to lakes at such speed that their wings produce a roar. Scaups leave the water by paddling on its surface for a short distance and gradually lifting.

CALL: Guttural, purring sound.

MIGRATIONS: Iowa migration data are mostly lacking. The greater scaup is uncommon in this state, there being few specimens, most of which were taken during November. It is probable that migrations are the same as those of the lesser scaup.

BREEDING: *Range*—Nests from the Arctic regions beyond the tree limit to as far south as southern Michigan and Dakota. *Nest*—Built on dry ground, of grass stems and lined with down; hidden in tall grass on the edges of lakes. *Eggs*—7 to 10, olive-buff; considerably larger than those of the lesser scaup. Incubation period is about 28 days. *Downy young*—Dark brown on upper parts, shading to creamy-buff on under parts.

WINTER RANGE: In North America, principally along the seacoasts of the United States.

FOOD: Information from Iowa specimens indicates food is chiefly snails and water insects with a small amount of vegetable matter—leaves and seeds of aquatic plants.

IOWA STATUS: An uncommon migrant; only a few specimens positively identified as greater scaups have been taken. In the fall of 1941 three were collected; prior to that only one fitting the measurements and description had been recorded. Since 1941 there have been good records in 1942, 1945, and 1967, all in the fall. These birds were taken in Dickinson and Winnebago Counties in northern Iowa, Pottawattamie County in western Iowa, and at Credit Island on the Mississippi River in Scott County and on the Mississippi in Lee County. During the late 1950's and early 1960's, Iowa Conservation Commission personnel collected duck wings from Iowa hunters to determine species, age and sex composition of the waterfowl harvest. In the annual collection of 2,500-5,000 wings, an average of 6 to 8 were from greater scaup. The U.S. Fish and Wildlife Service estimates the annual Iowa harvest at 250 birds.

LESSER SCAUP

Aythya affinis (EYTON)

PLATE ON PAGE 65

Other names: bluebill, scaup, scaup duck, blackhead, raft duck, nun (females only), little bluebill

Length: 15 to 19 inches
Weight: 1 to 2 pounds

DESCRIPTION: *Adult male*—Head, neck, and breast black; head glossed with purplish and greenish iridescence, purple being the dominant color but under certain lights a distinct greenish cast may show. Back white barred with black; sides white barred with dark gray; under parts white. Rump, under tail coverts, and tail dark grayish-brown. Speculum white;

primaries gray. White of the speculum in the lesser scaup does not extend onto the primaries as it does in the greater scaup. Iris yellow. Bill blue-gray, with the nail of the bill distinctly smaller than that of the greater scaup. Feet gray with dusky webs.

Male in eclipse plumage—Only partial; little change except that dark feathers are found on the back and a few brownish feathers on the sides and breast. Plumage is worn from the middle of August to as late as the first of December. Wing quills are molted in early August.

Juvenile male—Similar to female, mainly dark brown with white under parts and white on sides of head at base of bill. Back finely mottled with light gray. There is considerable variation among juveniles, some showing black sparingly on the head and neck, others showing a large amount, but most juveniles show white at the base of bill. Speculum white, not extending onto primaries; primaries gray. Iris yellow. Feet and bill gray; nail of bill smaller than in greater scaup.

Female—Dull brown on back, sides, breast, and head, with white patches on sides of head at base of bill. Under parts white. Speculum white, with white not extending onto gray primaries. Iris olive-yellow. Bill and feet gray; nail of bill smaller than on greater scaup.

FIELD MARKS: Scaups, particularly males, can be identified in flight by their small size, chunky build, black head and neck, and white speculum. On the water they appear to be white or light colored, black at both ends. They are found in all types of habitat suitable for ducks, but prefer larger lakes and rivers where, well out in open water, they raft up in large numbers, associating with other diving ducks. They are excellent divers, going down to considerable depths and securing their food from the bottom.

In flight, the scaup is one of the fastest ducks, traveling with the wind at great speeds, occasionally 65 to 70 miles an hour. They leave the water with difficulty, spattering on its surface for a distance before gaining full flight. They often alight at almost full speed, breaking their sharp descent only by spreading their wings and feet. Frequently when coming in, scaups, by partially closing their wings and tilting from side to side, gain speed as they descend and produce a roar as they finally break their speed before hitting the water.

In the field it is difficult to distinguish between greater and lesser scaups, the difference in white on the wings being about the only good field mark—a mark that is difficult to be certain of. Because the greater scaup is a rare duck in the central United States and the lesser scaup is common, few Iowa sight records of greater scaup are considered reliable.

CALL: Guttural, purring sound.

MIGRATIONS: Scaups are the most common diving ducks found in Iowa and are abundant at times on the larger lakes and rivers. The spring migration is at its height during April, although a few may arrive as early as March and some as late as the middle of May. Many of the latter remain in Iowa through the summer. The fall migration starts the first part of October, reaches its peak the last week in October, and the birds frequently

remain as long as there is open water, staying well out in larger lakes after smaller lakes and ponds have frozen. Occasionally there is little or no fall flight, either because of a change in route or extreme weather conditions that push the birds through in a nonstop flight.

BREEDING: *Range*—Northern interior of North America, east to the west coast of Hudson Bay, south as far as the central states. The nesting range of this bird is farther south than that of the greater scaup. *Nest*—Dry grass and down, located on the shores of lakes and marshes and on small islands, well concealed among grasses and weeds, often in the shelter of bushes or rocks. *Eggs*—9 to 12, olive-buff, hatch in about 28 days. *Downy young*—Dark brown on the back with yellow on the under parts and running well up to the lower half of the head and throat, and an indistinct buff stripe on the sides of the head.

WINTER RANGE: Central America and southern North America as far north as southern Illinois. As many as 700,000 lesser scaups have been observed in the late fall and early winter at Pool 19 on the Mississippi River at Keokuk, along with a large flock of canvasbacks and other diving ducks. Large numbers will remain in the vicinity of the Mississippi River locks and dams into early winter, as long as there is open water.

FOOD: Either animal or vegetable matter; the birds apparently have little preference. Often they gorge on snails and water insects; at other times they feed exclusively on seeds and roots of aquatic plants. When they are feeding on animal matter, their flesh may have a strong flavor.

IOWA STATUS: Most common of the diving ducks found in Iowa, occurring in abundance in the lake regions and along the larger rivers. Also found on small ponds and marshes. Scaups constitute about one-third of all the diving ducks taken by sportsmen during the fall months. Their rapid and direct flight, together with their great speed, taxes the ability of the hunter. The scaup has been recorded as a former breeder in some counties of the state and enough birds are seen during the summer months so that it is possible that a few pairs breed in Iowa each year.

COMMON GOLDENEYE

Bucephala clangula americana (BONAPARTE)

PLATE ON PAGE 65

Other names: American goldeneye, garrot, green head, brasseye, whistlewing, whistler

Length: 16½ to 23 inches
Weight: 1½ to 2½ pounds

DESCRIPTION: *Adult male*—Head iridescent green with white spot on each side at base of black bill. Neck and under parts white. Lower abdomen mottled with gray. Back black. Wings black and white; speculum white. Iris yellow. Feet yellow to orange with black webs. The male is considerably larger than the female.

Male in eclipse plumage—Only partial, involving feathers of the head and back, with many feathers of the head partly replaced by brown. Wing feathers are shed during July and August. Adult plumage gradually replaces the eclipse beginning in August but is not always complete until the middle or latter part of November.

Juvenile male—Resembles female, but is always distinguishable by its larger size and black bill. Head dull brown, often mixed with black; in many cases a few white feathers show on sides of head at base of bill, suggesting the white spots of the mature male. Breast gray mixed with white; back mottled with gray and white. This plumage is worn through the first winter and spring, changing to the adult phase the following fall or winter.

Female—Smaller than the male. Back and breast gray. Under parts white. Head brown. Speculum white. Iris yellow. Bill brown; has yellow tip during breeding season. Feet yellowish-brown with dusky webs.

FIELD MARKS: Goldeneyes prefer large lakes and streams, but are sometimes seen on marshlands and shallow ponds. They are seldom found in company with other ducks, flocks ranging in size from a single pair to as many as a dozen or more birds. Goldeneyes can be distinguished in the field by the large amount of white on their breasts and backs and by their dark heads. In flight they can be identified by the whistling sound of their wings. The under surface of the wings is dark. The birds appear chunky, with short necks, heavy heads, and rather long tails. The white spot on each side of the male's head can be seen at a considerable distance. They rise from the water in a long, sloping takeoff, making a whistle with their wings that can be heard at a distance. Speed of flight varies from 40 to 50 miles an hour. Goldeneyes are active birds, diving for food and sometimes emerging from the water in full flight.

CALL: A croak; also the whistling sound produced by the wings.

MIGRATIONS: One of the earliest spring migrants, appearing before ice is out of the lakes, congregating on the first open water, and occasionally lingering until the middle of April. The goldeneye is one of the last ducks to leave in the fall, staying as far north as open water can be found.

BREEDING: *Range*—Most goldeneyes breed north of the United States, but some nest in our northern and western states. *Nest*—In a hollow tree near a lake or stream, usually in an old abandoned woodpecker hole or other suitable cavity; height from the ground varies from 6 to 40 feet. Nesting is during June or early July. *Eggs*—8 to 12, greenish, placed on a bed of down. Incubation period is about 28 to 30 days. *Downy young*—Leave the nest soon after hatching by jumping from the cavity and falling or sailing to the ground or water below. Crown of head is dark blackish-brown; white spots at the shoulders and on each side of rump; under parts white.

WINTER RANGE: Both coasts; also larger lakes and streams as far north as there is open water.

FOOD: Principally water animals such as mollusks, insects, minnows, and crayfish; some vegetable food such as pondweeds and seeds of water plants. The amount of animal food may give this duck a disagreeable flavor.

IOWA STATUS: Goldeneyes are common migrants only along the larger lakes and rivers, but are found in small numbers throughout the state. During winter when inland lakes and streams are frozen, they are often seen on the border rivers.

BARROW'S GOLDENEYE

Bucephala islandica (GMELIN)

PLATE ON PAGE 65

Although the Barrow's goldeneye has been reported in Iowa several times, specimens believed to be Barrow's goldeneye and collected have all been either females or immature males of the common goldeneye. Carney, Sorenson and Martin report a wing submitted from Greene County by a hunter. It must be conceded, therefore, that it is possible this species may occur in the state.

Field identification would have to be based on the male bird; even in the hand females are almost indistinguishable from the common goldeneye. During the breeding season the female Barrow's goldeneye has a yellow bill, whereas the female common goldeneye has only a yellow tip on its bill.

The adult male is similar in size to the common goldeneye, but differs considerably in coloration, showing more black on the back and sides, an iridescent purple head and a cresent-shaped white spot at the base of the bill. At a distance, common goldeneyes occasionally appear to have this crescentic spot, since at times their spot varies to triangular in shape, but it is never the full crescent of the Barrow's goldeneye. The bill of the Barrow's is shorter than that of the common species, and the nail of the bill is greatly raised. Habits of this bird are similar to those of the common goldeneye.

Range of the Barrow's goldeneye is along the seacoasts and in the western mountain region, and its occurrence in the central states would be accidental. Reports of this bird should not be made unless the observer has studied both species carefully and is very sure which has been seen.

BUFFLEHEAD

Bucephala albeola (LINNAEUS)

PLATE ON PAGE 65

Other names: dipper, butterball, butter duck, spirit duck, hell-diver, marionette

Length: 12 to 15 inches
Weight: 8 ounces to 1½ pounds

DESCRIPTION: *Adult male*—A small duck with a large, puffy head colored with iridescent blue, green, and purple, and with a large, wedge-

PLATE V

RING-NECKED DUCK
JUVENILE MALE

RING-NECKED DUCK
MALE DURING AUTUMN MOLT

RING-NECKED DUCK
FEMALE

RING-NECKED DUCK
ADULT MALE

CANVASBACK
MALE DURING AUTUMN MOLT

CANVASBACK
JUVENILE MALE

CANVASBACK
ADULT MALE

CANVASBACK
FEMALE

REDHEAD
MALE DURING AUTUMN MOLT

REDHEAD
JUVENILE MALE

REDHEAD
FEMALE

REDHEAD
ADULT MALE


Maynard F. Reece

shaped, white patch on the back of the head. Neck and breast white, shading into light gray on the under parts. Back jet black. Wings black with white shoulders and speculum. Tail pearl-gray. Iris brown. Bill gray. Feet flesh colored.

Adult male in eclipse plumage—Much of the beautiful coloration is lost. The head is dark, dull gray; most of the white patch is mottled or replaced by gray. Breast and sides mottled with gray. Younger birds change into a plumage similar to that of the female, showing a large amount of gray. This molt occurs in July and August, the adult plumage generally being regained by October or November but occasionally later. Flightless period is during August.

Juvenile male—Similar to female but can be distinguished by its larger size, more puffiness of the head and a slightly larger white patch on each side of the head. Often shows some of the glossy head feathers of the adult male. Breast and sides plain gray, often mixed with white. Iris brown. Feet and bill both gray.

Female—Very small, in many cases even smaller than the green-winged teal. Dull gray in color with a small white patch on each side of head, white speculum, and white under parts. Iris brown. Bill and feet gray. There is considerable variation in size among females, but they are always smaller than males.

FIELD MARKS: Smallest of the sea or diving ducks and also one of the most beautiful. Usually found on open lakes and ponds, occasionally on marshlands, but as a rule it prefers deeper water. Buffleheads are found in small flocks—single pairs or six or eight birds, seldom more than a dozen—rarely associating with other types of diving ducks.

They are easily identified by their small size and the striking color of the males. Often they are seen on very rough water, riding the waves with little difficulty, the males, at a distance, looking as if they were made of silver or platinum as they shine in the sun. Buffleheads rise from the water with ease, flying low for a considerable distance, sometimes gaining little altitude before alighting again. They are great divers, often preferring to dive rather than fly. At times, after diving, they may come out of the water in full flight. Occasionally they are very tame, allowing close approach, but generally they are as wary as most diving ducks and stay well away from any danger.

In flight the short neck, small body, and large, puffy head, together with the white of the body and wing marks, make them easy to identify. Their flight speed is rapid, from 40 to 60 miles an hour. They often alight at full speed, hitting the water tail first and coming to a sliding halt or bouncing for several yards before finally stopping. Sportsmen generally refrain from shooting them because their small size and the quantity of animal matter they consume make them undesirable for the table.

CALL: Usually silent, but at times utters a croaking quack or a guttural roll similar to that of other diving ducks.

MIGRATIONS: Sometimes an early spring migrant, appearing as soon as the lakes break up; height of the migration is generally the latter part of

March and the first part of April, some birds lingering into the middle or latter part of April. A rather late migrant in the fall, seldom appearing before the middle of October and remaining until the lakes freeze. Most of the fall migration comes between the last of October and the middle of November. During the spring migration a great many adult males in full plumage are seen, but during the fall only an occasional male is in full plumage, with many of the young not yet in adult plumage.

BREEDING: *Range*—From interior of Canada to Alaska, as far south as the Rocky Mountain regions of the United States. *Nest*—Usually in a hole in a tree on the edge of a small pond or lake—often an old abandoned nest of the flicker or one of the other large woodpeckers. It is surprising what a small hole the female bufflehead can squeeze through to find a suitable nesting cavity. The cavity is generally from 5 to 25 feet above the ground. *Eggs*—8 to 12; light olive; incubation period is about 30 days. *Downy young*—Leave the nest soon after they are hatched. Young buffleheads are almost exact replicas of young goldeneyes except for their smaller size. Upper parts are dark, blackish-brown; under parts and spots on the body are white.

WINTER RANGE: The entire United States, often as far north as the Great Lakes, wherever suitable open water can be found.

FOOD: Largely water insects, larvae, crustacea, and to a lesser extent seeds and parts of water plants.

IOWA STATUS: The bufflehead can hardly be classed as a common bird in most of the state, but around the larger lakes it is sometimes seen in considerable numbers. A flightless immature bufflehead was banded in Sac County on July 26, 1962; there are no other recent breeding records.

OLDSQUAW

Clangula hyemalis (LINNAEUS)

PLATE ON PAGE 71

Length: Males, 20 to 23 inches; females, 14 to 16 inches

Weight: 2 to 2½ pounds

DESCRIPTION: *Adult male*—Head white with cream-colored crown, gray on sides, and a dark brown patch running from the ear to the center of the neck; white ring around the eye. Back, wings, and a broad band across breast dark brown. Sides and scapulars gray. Under parts white. Long spike tail dark brown. Iris variable—red, hazel, brown, orange, straw, or white. Bill small, marked with flesh color and black. Feet blue-gray.

Male in eclipse plumage—No true eclipse plumage; in summer the white and light gray are mainly replaced by brown; the long spike tail is retained. There is a complete post-nuptial molt into winter plumage and a prenuptial molt into breeding plumage, resulting in two distinct seasonal plumages.

G. M. Sutton, a noted bird authority, believes the so-called winter plumage of this bird is actually its breeding plumage, and his observations seem to bear out this point.

Juvenile male—Similar to female but body plumage is much grayer and it lacks the long spike tail and distinct spots on the head. May show a few dark feathers on the breast.

Females—A small, chunky bird with a short neck and small bill. Brownish on upper parts; white on the sides and under parts. Head has dark crown; brown-colored patch on each side and on throat. Iris yellow, light gray, or white. Bill gray. Feet gray to greenish-gray, with dusky webs.

FIELD MARKS: Found in Iowa on larger lakes and rivers. The striking coloration of the male and the peculiar method of flying make it easy to identify even at long distances. Oldsqaws are swift and erratic fliers, sometimes flying high and at other times skimming the surface of the water. When alighting they often drop headlong into the water with a splash. They are expert divers, going to great depths to procure food. Some have been caught in fishermen's nets at depths as great as 180 feet.

CALL: Similar to the distant baying of rabbit hounds.

MIGRATIONS: Most oldsquaw records in Iowa have been in December.

BREEDING: *Range*—From Alaska across Canada to Laborador, principally beyond the tree limit. *Nest*—Composed of grasses and weeds, well lined with down, which increases in quantity as the eggs increase in number. *Eggs*—Usually 5 to 7, olive-buff, hatch in 24 to 25 days. *Downy young*—Deep brown, almost black on the crown and rump, with a brown band running across the chest; a large white spot below and a small one above each eye; white under parts.

WINTER RANGE: Atlantic and Pacific Coasts; also on the Great Lakes and other large bodies of water in the interior.

FOOD: Mainly bivalves and other water animals. Oldsquaws are very fond of mussels, and on seacoasts eat large quantities of them. On the breeding grounds and inland they consume quantities of vegetable matter such as roots, leaves, and seeds of aquatic plants.

IOWA STATUS: Uncommon and irregular late fall and early spring visitors in Iowa. There are several Iowa specimens in collections in the state, along with some sight records and positive identification of specimens that were not saved. The earliest fall records are in October, and one bird remained in Linn County from December, 1959, until early April, 1960; most Iowa records are in December. An immature female was taken at Clear Lake, November 9, 1976. Some oldsquaws probably occur in Iowa every year during the late fall and early winter.

HARLEQUIN DUCK

Histrionicus histrionicus (LINNAEUS)

PLATE ON PAGE 71

Length: 15 to 17 inches Weight: 1¼ to 2 pounds

DESCRIPTION: *Adult male*—Body and head slate-gray with bluish tint, marked with black and white in front of the wings, around the neck and on the back and head. Sides rich chestnut-red with a distinct stripe of this color on each side of the head above the eye. Crown dark with a white patch running from the base of the bill up over the eye to the nape. Tail long and black, feathers pointed. Speculum metallic blue-black. Iris brown. Bill bluish. Feet gray.

Male in eclipse plumage—Slate-gray with head and neck considerably darker. White spot on each side of head. Dull white spot at base of bill as in full plumage. The flightless period is the latter part of August. Full plumage is regained early in October.

Juvenile male—Similar to female but grayer on the breast. Feet olive.

Female—Grayish-brown, lighter on the under parts. Three white spots on each side of head. Tail rather long and dark-colored. Iris brown. Bill small, gray. Feet gray. There are no distinctive marks on the wings.

FIELD MARKS: Among all ducks, the male harlequin can be identified by its odd color pattern. In the female and juvenile male a distinct white spot behind the eye on the side of the head and the bird's small bill are diagnostic.

CALL: Gabbling note; a whistle similar to the wood duck.

MIGRATIONS: A rare and accidental straggler in Iowa.

BREEDING: *Range*—Western North America, east in northwestern Canada to the Mackenzie Valley; also eastern Canada and Greenland. *Nest*—Usually on the ground near water, but occasionally in hollow trees. *Eggs*—5 to 8, greenish-buff, laid in June. *Downy young*—Upper parts dark blackish-brown, under parts white. Top and back of head, black; cheeks and throat, white. Small white spot in front of eye; white spot behind wing; narrow white crescent in front of tail.

WINTER RANGE: Mainly on the seacoasts, not far from the southern parts of its breeding range.

FOOD: Insects, larvae, snails, crustacea, and small fish; occasionally some vegetable food.

IOWA STATUS: The harlequin duck is accidental in Iowa, being a rare straggler here. There are only five records of its being killed in the state. Two were taken on Big Lake in Pottawattamie County, September 26, 1895, according to DuMont in *Revised List of Birds in Iowa;* a male was collected in Polk County, December 27, 1932, by James R. Harlan; and there is a

PLATE VI

LESSER SCAUP
ADULT MALE

GREATER SCAUP
ADULT MALE

LESSER SCAUP
MALE DURING AUTUMN MOLT

LESSER SCAUP
JUVENILE MALE

LESSER SCAUP
FEMALE

BUFFLEHEAD
FEMALE

BUFFLEHEAD
JUVENILE MALE

BUFFLEHEAD
ADULT MALE

BARROW'S GOLDENEYE
ADULT MALE

COMMON GOLDENEYE
ADULT MALE

COMMON GOLDENEYE
FEMALE

COMMON GOLDENEYE
JUVENILE MALE


Maynard F. Reece

record that William G. Savage of Hillsboro killed three with one shot in Van Buren County. A juvenile male was shot by Cleo Johnson of Des Moines on Beaver Creek, near Des Moines, November 5, 1957. Another juvenile male, taken by Jack Musgrove at Big Creek Lake in Polk County on October 31, 1976, is now a specimen in the collection of the State Historical Museum.

WHITE-WINGED SCOTER

Melanitta fusca deglandi (BONAPARTE)

PLATE ON PAGE 71

Other names: sea coot, white wing, scoter, white-eye, muscovite, Chesapeake Bay canvasback, coot

Length: 20 to 23 inches
Weight: 2½ to 4½ pounds

DESCRIPTION: *Adult male*—Plumage black shading into brown on the sides with a white half-crescent on the head under each eye. Speculum white. Iris white to pale yellow. Bill swollen at the base and marked with red, white, and black. Feet dull red blotched with black; webs dusky. There is no eclipse plumage.

Juvenile male—Similar to female but lighter on under parts and more light areas on sides of head; sometimes under plumage and sides of head are light gray. Speculum white. Iris brown. Feet reddish blotched with black.

Females—Plumage brownish-gray. White spot on sides of head back of eye. Speculum white. Iris brown. Bill brownish-black. Feet reddish, blotched with black.

FIELD MARKS: The large size of this scoter, its dark coloration, and the white speculum will distinguish it from any other duck. It rises from the water with great difficulty, pattering across the surface for some distance.

CALL: A whistling of wings; a clear, low whistle.

MIGRATIONS: Uncommon migrant, occurring occasionally in October, November, and December.

BREEDING: *Range*—North America from northern Alaska east through northern Manitoba, south to central British Columbia and North Dakota. *Nest*—Usually on shores of lakes, often some distance from water; well concealed under bushes and shrubs; a hollow in the ground filled with dry leaves and sticks and lined abundantly with dark-colored down. *Eggs*—9 to 14; large, pinkish in color; hatch in about 28 days. *Downy young*—Brown on upper parts; chin and throat white; sides of neck grayish; under parts white. Small white spot under each eye.

WINTER RANGE: Both coasts; on the Pacific from Unalaska Island to Lower California; on the Atlantic Coast from St. Lawrence River to Florida; and on the Great Lakes.

FOOD: Shellfish, which the bird obtains by diving to great depths; also small fish, insects, crayfish, and snails; occasionally weed seeds and other parts of aquatic plants.

IOWA STATUS: Of all the scoters, the white-wing is the one most often seen in Iowa, though it can hardly be classed as common. It is occasionally seen on the larger rivers during the fall—usually only single birds, but sometimes small flocks of three to five, usually juveniles. The U.S. Fish and Wildlife Service summary of wings submitted by hunters from 1961 to 1970 includes white-winged scoters from Story County but sex and age are unknown. To the authors' knowledge only one adult male has been taken in Iowa, a specimen shot by Dale Humburg in Story County in 1972 and preserved in a private collection.

SURF SCOTER

Melanitta perspicillata (LINNAEUS)

PLATE ON PAGE 71

Other names: skunkhead, scoter, surf duck, sea coot, bald coot, coot

Length: 20 to 21 inches
Weight: 2 to 3 pounds

DESCRIPTION: *Adult male*—Entire plumage, except head, black, shading into dark blackish-brown on the sides. Head black with white patches on forehead and nape. Iris white. Bill thick and heavy, broad at base and brightly marked with red, yellow and white, and with a large black spot on each side near the base. Feet deep red, blotched with black; webs black.

Male in eclipse plumage—As in other scoters, no true eclipse plumage. During early fall, however, white feathers on the nape of the neck are molted, leaving a smooth black.

Juvenile male—Similar to female, with white patches on sides of head. Under parts lighter than the female; browner above. Iris brown. Wide base of the bill is not developed as in adult males. Feet dull orange with blackish webs.

Female—Body plumage dark grayish-brown shading into mottled gray on under side. Head has two light-colored patches on each side. Top of head blackish. Some females have a white patch on the nape, as do adult males. Iris brown. Bill large and broad as in male but lacking the bright colors. Feet yellow-orange, webs dusky.

FIELD MARKS: Surf scoters can be distinguished by their peculiar action when alighting on the water—landing with wings extended above their bodies and holding them in this position until they have come to a full stop. At close range the male can be identified by its dark coloration, white patches on head, and odd-shaped, highly colored bill.

CALL: A deep whistle produced by the wings when rising from the water or alighting; a low guttural croak; a clear whistle.

MIGRATIONS: Rare straggler in Iowa with a few occurrences during late fall and in the spring.

BREEDING: *Range*—Pacific Coast and from northwestern Mackenzie to Great Slave Lake. *Nest*—Built on shores of lakes, often on small islands, under brush or concealed by clumps of grasses or weeds, often some distance from shore; composed of grass and feathers. *Eggs*—5 to 7; buff white; incubation period 28 to 29 days. *Downy young*—Upper parts dark brownish-gray, under parts light gray; top and back of head almost black; cheeks and throat light gray, almost white. Bill larger than that of most ducklings, thick and heavy.

WINTER RANGE: Pacific Coast as far north as the Aleutian Islands and south to California; on the Atlantic Coast from Nova Scotia to the Carolinas.

FOOD: Almost entirely bivalves in the scoter's typical haunts on the seacoasts. Inland it feeds on snails, clams, and other water animals.

IOWA STATUS: An occasional but rare visitor, some birds being taken in central and eastern Iowa during the fall months almost every year. Recent records, including wings sent by hunters to the U.S. Fish and Wildlife Service, come from Buena Vista, Polk, Hamilton, Greene, Clinton, and Lee Counties. These birds are seldom seen in groups larger than two or three; usually only singles.

BLACK SCOTER

Melanitta nigra americana (SWAINSON)

PLATE ON PAGE 71

Other names: American scoter, common scoter, butterbill, black duck, sea coot, coot, butter-billed coot

Length: 17 to 21 inches
Weight: 1½ to 3 pounds

DESCRIPTION: *Adult male*—Entire plumage black. First primary of wing deeply notched, narrower for about the outer two-thirds of its length. Iris brown. Bill black with a yellow protuberance at base. Feet brownish-black.

Male in eclipse plumage—Practically no eclipse, but during late summer and early fall the birds are more dull in color, showing more brown in plumage.

Juvenile male—Resembles the female. Gray-brown above; throat and sides of head light grayish; crown dark brown and under parts light gray mottled with grayish-brown.

Female—Body plumage gray-brown, darkest on back; under parts lighter gray mottled with gray-brown. Head gray-brown, darker on crown; light on throat and sides. Iris brown. Bill blackish-brown. Feet dusky.

FIELD MARKS: Can be separated from other scoters and from most other sea ducks by its characteristic appearance on the water, where it sits with its bill tipped upward and its long tail held high. The dark appearance of the males, with no light areas, is an almost fool-proof field mark. Females may be confused with other types of ducks. The under surface of the wings of both sexes, though dark, has a silvery appearance.

CALL: Musical whistle.

MIGRATIONS: A few black scoters have been seen or taken in Iowa between the latter part of October and the middle of January.

BREEDING: *Range*—Northern North America around the Aleutian Islands, west shores of Hudson Bay, and Newfoundland. *Nest*—Composed of grasses and sticks, lined with down; hidden in standing grass or weeds. *Eggs*—6 to 10; buff colored; hatch in about 29 days. *Downy young*—Upper parts very dark brownish-gray, under parts gray; top and back of head almost black; cheeks and throat light gray; bill somewhat large and thick.

WINTER RANGE: Along both coasts; on the Pacific from Alaska to southern California; on the Atlantic from the St. Lawrence River to southern Georgia.

FOOD: On the coasts, mussels and shellfish that are obtained by diving to great depths. No data on food consumed in Iowa.

IOWA STATUS: A rare bird in Iowa. One was taken some years ago on Black Hawk Lake at Lake View; three were taken from a flock of six at Willow Slough in Mills County by Roger Fliger and James Sherman, on November 4, 1960; and three were taken in October, 1975, at Bay's Branch in Guthrie County by Jack Musgrove and Barry Kenney; one of these is now preserved in the collection of the State Historical Museum. The U.S. Fish and Wildlife Service reports receiving wings of black scoters taken in Dallas, Humboldt, Des Moines, and Scott Counties between 1961 and 1970, and there are recent sight records in Polk and Scott Counties.

PLATE VII

RUDDY DUCK
FEMALE

RUDDY DUCK
JUVENILE MALE

RUDDY DUCK
ADULT MALE

HARLEQUIN DUCK
FEMALE

HARLEQUIN DUCK
ADULT MALE

OLDSQUAW
ADULT MALE

OLDSQUAW
JUVENILE MALE

OLDSQUAW
FEMALE

SURF SCOTER
FEMALE

SURF SCOTER
ADULT MALE

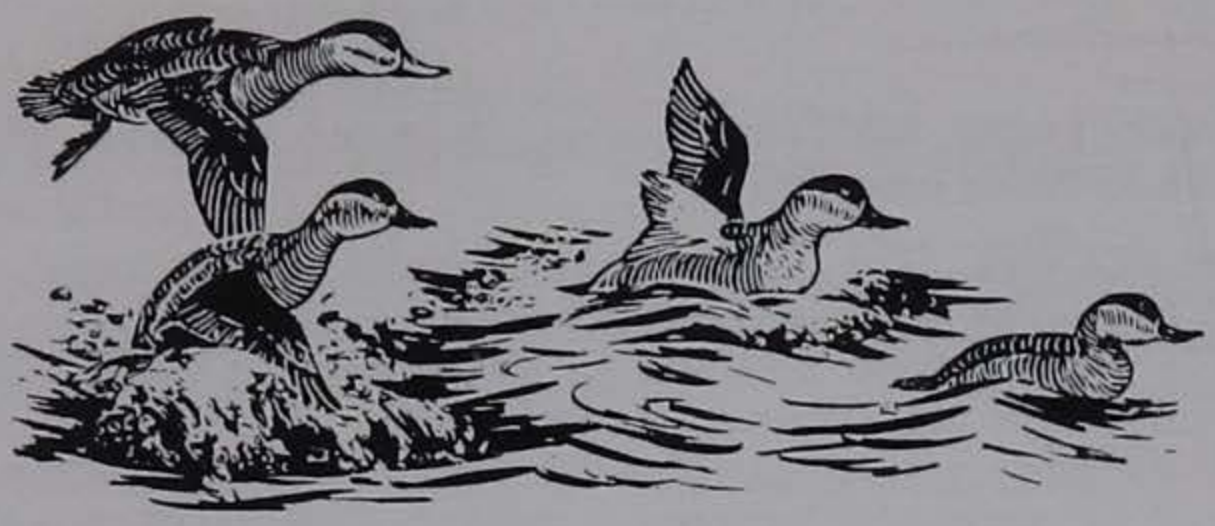
BLACK SCOTER
FEMALE

BLACK SCOTER
ADULT MALE

WHITE-WINGED SCOTER
ADULT MALE

WHITE-WINGED SCOTER
FEMALE


Maynard F. Reece



CHAPTER V–RUDDY DUCKS

RUDDY DUCK

Oxyura jamaicensis rubida (WILSON)

PLATE ON PAGE 71

Other names: bullneck, ruddy, mud hen, spirit duck, bluebill, butterball, stifftail, broadbill, bumblebee coot

Length: 12 to 16 inches
Weight: 1 to 1½ pounds

DESCRIPTION: *Adult male*—A small, chunky bird with short, heavy neck. Sides and under parts of head white; crown and nape black. Back and sides rich reddish-brown. Under parts silvery-gray. Tail has narrow, stiff feathers. Very small wings show no speculum, are brownish-gray and not as pointed as those of most ducks. Iris brown. Bill short, upturned, turquoise blue. Feet gray, set far back on body.

Male in eclipse plumage—Strictly speaking, the ruddy duck has no eclipse plumage, but rather, following a molt between August and October, a complete change to plumage similar to that of the female except that the cheeks, chin, and throat are white—which distinguishes adult from juvenile males. In any plumage males can be distinguished from females by their superior size. A prenuptial molt in April and May produces the adult plumage. Occasionally during late fall some males will show quite a little of the adult reddish-brown plumage.

Juvenile male—Back, sides, breast, and head mottled with dull brown, gray, and buff. Under parts silver-gray. Head has dark crown and dark stripe on sides; no white on throat and sides of head. Bill brownish-gray. This plumage is worn until the spring molt occurs, with full adult plumage not appearing until the second year.

Female—Smaller than the male. Drab-colored, mottled gray and brown. Under parts silvery-gray. Grayish on sides and throat. Crown and stripe on

sides of head, brown. Bill brownish-gray, short and upturned, often freckled with brown on lower mandible.

FIELD MARKS: The short, chunky build, thick neck, and stiff, upturned tail make the ruddy easy to distinguish from other ducks. The bright colors of the adult male are so distinctive that there is little chance for confusion with other species. Juvenile males, fall males, and females, which are similar in markings, have the typical build of a ruddy duck and lack any of the striking coloration of other species. In the hand the ruddy duck can be identified by the stiff, narrow tail feathers and position of the legs.

Ruddies are excellent divers, preferring to escape from their enemies by diving rather than by flying. Their wings are small. They rise from the water with great difficulty, spattering and skittering across the surface for a long distance. In full flight they look like large bumblebees, moving at high speed. They often plunge headlong into the water when alighting. They sit low in the water and their short, chunky build is distinctive.

Ruddies walk with difficulty and except for scooting along on the ground are almost helpless when out of water.

The general habits of the ruddy duck are similar to those of the grebe, with which it is often confused. It shows a decided preference during the nesting season for marshy lakes and ponds, and during the fall months is often found well out in open water on large lakes. Ruddies fly at low altitudes. They are occasionally found in flocks, seldom with other species. When they fly, their feet can often be seen protruding well behind the tail.

The ruddy duck is the only bird that has the distinction of being known by 98 different colloquial names.

CALL: Save for an occasional weak quack, seldom calls; females are silent.

MIGRATIONS: In Iowa ruddy ducks are seldom found during late winter and early spring. The spring migration is a bit late, the birds seldom appearing before April, with most of them arriving about the middle of the month. Usually males arrive in advance of the females. During the early fall months, and always by the middle of October, large numbers of them are seen in the lake regions. Many ruddies stay until the lakes are frozen over.

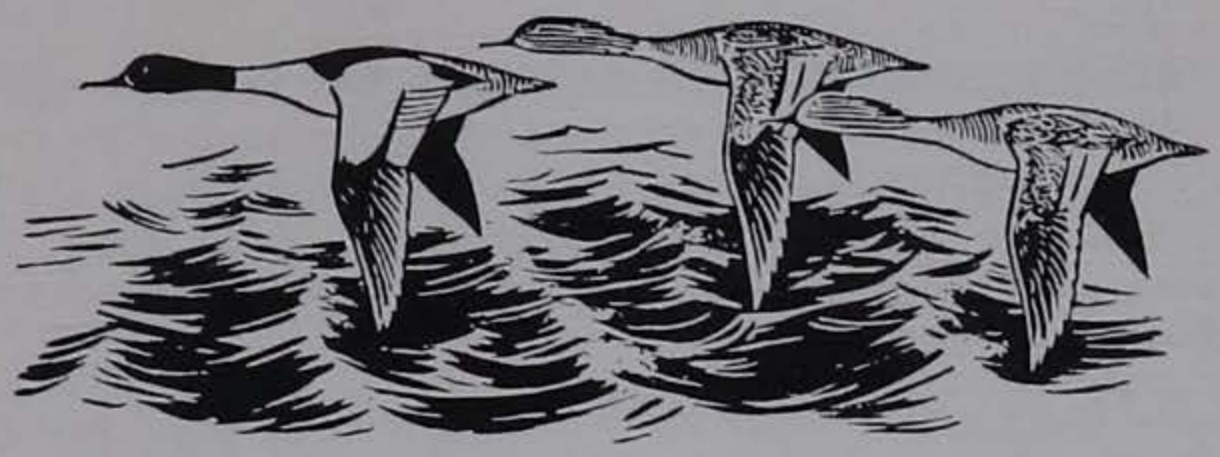
BREEDING: *Range*—Central and western North America south as far as Iowa and Illinois, north as far as the mouth of the Nelson River on Hudson Bay. *Nest*—Built in sloughs among reeds and bulrushes; nests are deep, basket-like structures, made of and fastened to rushes and weeds; little or no down is found in nests. *Eggs*—7 to 10, occasionally as many as 20, are dull white, rough in appearance and surprisingly large, as big as those of our largest ducks; hatch in about 30 days. *Downy young*—Dark olive-brown on upper parts, brown on head, grayish-white on cheeks and under parts. Their down is particularly long and coarse; they have the characteristic build of adults. Occasionally two broods of young are raised during a season. Unlike most other ducks, which desert the female at nesting time, the male

ruddy often stays close and helps care for the young until they are able to shift for themselves.

WINTER RANGE: Atlantic coast as far north as Chesapeake Bay; on the Pacific Coast from southern British Columbia to lower California; as far north as the interior of southern Illinois.

FOOD: Stems, roots, and leaves of aquatic plants; also many snails, insects, and larvae, but most ruddies prefer vegetable food.

IOWA STATUS: The ruddy duck nests wherever there is suitable habitat in the northern part of the state, particularly in the lake regions, and is a fairly common duck during the open season in those areas. It is found in other parts of the state during migrations, but never in abundance.



CHAPTER VI–MERGANSERS

HOODED MERGANSER

Mergus cucullatus (LINNAEUS)

PLATE ON PAGE 81

Other names: fish duck, merganser, hooded sheldrake, wood sheldrake, hairy head, wood duck, little sawbill

Length: 16 to 19½ inches
Weight: 1 to 1½ pounds

DESCRIPTION: *Adult male*—Head has a large, fan-shaped white crest edged with black; remainder of head and neck black. Breast white with two bands of black on each side, sometimes meeting in center of chest. Back dark brown; scapulars long, black with white centers. Under parts white. Sides ocherous-brown, finely barred with wavy black lines. Shoulders gray; speculum white. Tail rather long. Iris yellow. Bill black, narrow, with toothed edges. Feet yellowish-brown with dark brown webs.

Male in eclipse plumage—Only partial, from August to late September. Brown feathers are mixed with black on the head and dull brown feathers show on sides of the body.

Juvenile male—Similar to female but crest is small or even lacking. Back and sides more brown than female. Under parts white. Full adult plumage is not complete until the second or third year, males being found in partly completed adult plumage through this period. The first indication of maturity is the appearance of a large brown crest with some black feathers. Later more black is present on the head, white feathers show in the crest, black on the back, and black bands appear on sides of the breast.

Female—Head brown, full-crested. Throat light gray. Lower breast and abdomen white. Upper breast gray. Back and sides brownish-gray, with back darker toward the center. Tail dark brown. Outer portion of speculum white. Shoulders dark brownish-gray. Iris brown. Feet yellowish-brown with dusky webs.

FIELD MARKS: Smallest of the mergansers and the least typical. It can hardly be mistaken for any other species of duck because of its crested head and small size, along with its typical merganser bill. In flight the large crest shows very little, being folded down against the bird's neck. During the mating season and occasionally at other times this crest is carried fully open, or is rapidly opened and closed.

The hooded merganser prefers small streams and wooded ponds, but also is sometimes found on large lakes. Its flight is rapid, about 40 to 60 miles per hour. Hooded mergansers leave the water and alight with ease. In flight they carry their bodies and necks in a straight line and have a more streamlined appearance than do other ducks. The white wing markings are easily seen when the birds fly, and at close range their narrow bills can be seen. Most hooded mergansers seen are immature birds and females, with adult males making up only a small part of the flock. They are excellent divers, securing their food under water; when wounded they are often difficult to retrieve.

CALL: Hoarse croak.

MIGRATIONS: During migrations are found in small groups, often pairs, seldom more than four to six birds. They migrate fairly late in the spring, generally during April, and are found during the fall from the middle of October until well into December.

BREEDING: *Range*—Temperate North America, east to New Brunswick, south to central Florida, west to Oregon and Washington, north to southern Alaska and Hudson Bay. *Nest*—In a hollow cavity of a tree, any opening large enough to admit the female, often using wood duck nest boxes and sometimes laying in wood duck nests. Some nests are low to the ground, sometimes nothing more than hollow logs or stumps. *Eggs*—10 to 12, pure white, placed in a nest of leaves and decayed wood, heavily lined with down. Incubation period is approximately 30 days. *Downy young*—Leave the nest by dropping to the water or ground below. Sepia-brown above; sides of head and neck pinkish-buff; chin, throat, and under parts pure white.

WINTER RANGE: United States as far north as the central states, but mostly in the southern states.

FOOD: Fish, water insects, crustacea, and a large amount of vegetable matter such as stems, leaves, and seeds of water plants. Because this bird sometimes feeds on water plants its flesh may have a flavor superior to that of other mergansers, though inferior to most other ducks. The amount of vegetable matter consumed is the factor that determines whether or not this duck is edible.

IOWA STATUS: The hooded merganser is a fairly common migrant both spring and fall, appearing in large numbers during the fall months, particularly on rivers and lakes. Formerly it was a local breeder throughout the state, and there are recent reports of breeding in Clay, Kossuth, Polk, Johnson, Jackson, and Louisa Counties.

COMMON MERGANSER

Mergus merganser americanus (CASSIN)

PLATE ON PAGE 81

Other names: American merganser, sawbill, fish duck, merganser, sheldrake, Kansas grayback, canvasback, goosander

Length: 22 to 27 inches
Weight: 3 to 4¼ pounds

DESCRIPTION: *Adult male*—Head puffy but not crested, iridescent greenish-black. Breast and sides creamy-white, often with a light yellow or salmon tinge. Back black. Rump and tail gray. Wings marked with black and white. Iris brown. Bill red with black stripe down the center; narrow, distinctly hooked, edged with lamellae or toothed projections. Feet bright red. The common merganser is one of the largest of all ducks.

Male in eclipse plumage—Head reddish-brown with a white chin. Sides of body gray; a few adult feathers show on the back, but are mixed with gray. Full adult dress is regained in December and January. Flight feathers are shed during August.

Juvenile male—Similar to female, having a slightly crested head of reddish-brown color, often much lighter than the female and with a less distinct white patch on the throat. Back and sides gray; under parts creamy-white. Iris brown. Bill and feet orange to reddish-orange. This plumage is carried to the following summer, gradually changing to that of the adult, the first indication being the appearance of dark feathers on the head and neck.

Female—Head crested, reddish-brown, with a white chin distinctly separated from the rusty color of the head. Back and sides gray. Under parts white to creamy-white. Speculum white. Iris brown. Bill and feet orange.

FIELD MARKS: The large size and the manner of flight, different from most ducks, readily identify the larger mergansers. The head, neck and body are carried in a straight line with the bill pointing forward; they fly low to the water and show distinct white marks on the wings. Their large size gives the impression of slowness, but in reality they are fast fliers. They rise from the water with difficulty, splattering along the surface before gaining full flight. Often they fly in long lines. All mergansers are excellent divers, going to considerable depths to obtain food. They are tough birds and hard to kill; if wounded they are practically impossible to retrieve.

CALL: Hoarse croaks, seldom uttered.

MIGRATIONS: Wintering as far north as they do, common mergansers are often seen in Iowa during the winter months, lingering as long as there is any open water. They are sure to be found on the first open water in the spring, with the largest part of the migration occurring during March.

PLATE VIII

HOODED MERGANSER
FEMALE

HOODED MERGANSER
JUVENILE MALE

HOODED MERGANSER
ADULT MALE

RED-BREASTED MERGANSER
MALE DURING AUTUMN MOLT

RED-BREASTED MERGANSER
ADULT MALE

RED-BREASTED MERGANSER
FEMALE

RED-BREASTED MERGANSER
JUVENILE MALE

COMMON MERGANSER
ADULT MALE

COMMON MERGANSER
JUVENILE MALE

COMMON MERGANSER
FEMALE

Maynard F. Reece

During both spring and fall migrations they stay in flocks of their own kind or mix with red-breasted mergansers, and sometimes appear in large numbers.

BREEDING: *Range*—From Alaska across Canada, south into the northern tier of states. *Nest*—In hollow trees and stumps or among rocks around lakes; well hidden, composed of grasses, heavily lined with white down. *Eggs*—9 to 12, pale buff or ivory-yellow, hatch in about 29 days. *Downy young*—Olive-brown upper parts, white edgings on the wings, and white spots on each side of the rump; light cinnamon or pinkish-buff on the neck, with pure white stripes on sides of brown head. At any age the common merganser can be distinguished from the red-breasted merganser by the position of the nostril, which is in the central third of the bill in the common, and in the basal portion in the red-breasted.

WINTER RANGE: South to California, Louisiana, and Florida, and north as far as there is any open water in streams or lakes; almost every year a few are reported to be wintering in Iowa, usually on the Mississippi River.

FOOD: Mostly fish, with crayfish and other small aquatic animals occasionally. This diet gives the flesh a very unsavory flavor.

IOWA STATUS: Common migrant, occasionally wintering in open water of the larger rivers of the state. Probably nested in limited numbers in Iowa before the state was well settled. Few sportsmen have any use for this duck because it is entirely unfit for table purposes and is believed to destroy large numbers of fish. The latter is doubtful, and the beauty of the bird makes it well worth preserving.

RED-BREASTED MERGANSER

Mergus serrator serrator LINNAEUS

PLATE ON PAGE 81

Other names: sawbill, fish duck, sheldrake, merganser, salt-water sheldrake

Length: 22 to 23 inches
Weight: 2 to 2½ pounds

DESCRIPTION: *Adult male*—Head slightly iridescent, greenish-black, distinctly crested. Breast reddish-tan spotted with black; back black; sides gray heavily barred with black; under parts white. Wings marked with black and white. Iris deep red. Bill red, narrow, long, almost cylindrical, with toothed projections or lamellae on the sides and a distinct hook on the end. Feet red.

Male in eclipse plumage—Begins rather early in the spring, sometimes as early as April, proceeds slowly, and is not complete until August. During advanced stages this plumage is similar to that of the female, but there are black feathers on the back, and the sides and chest are brownish-gray. Eclipse plumage birds can be identified as males only by some of the dark-

colored feathers characteristic of the adult. The eclipse plumage is shed beginning in September and continuing through the fall months until December; by January practically all mature males are in full plumage.

Juvenile male—Resembles the female but has a much smaller crest; upper parts of body are grayer. By December black feathers begin to appear on sides of the crown and on the back. Juvenile plumage is worn until spring and is molted during May and June; the wings, however, remain those of a juvenile. The following fall this plumage changes to that of an adult male.

Female—Head light rusty-brown with a large, long, and conspicuous crest. Throat light gray with no distinct line of separation between it and the reddish-colored feathers on the head and lower neck. Back light brownish-gray. Conspicuous white mark on the speculum. Bill and feet orange to reddish-orange.

FIELD MARKS: Because of its length, the red-breasted merganser appears to be larger than it really is; its body is not as large as that of a mallard. Mergansers prefer open bodies of water where they can feed by diving. They often remain under water for long periods and at times come to the surface in full flight. They are wary, having no trust in man. White can be seen on the wings of flying birds. Red-breasted mergansers are fast, changing their course little, going long distances so low to the water that their wing tips almost touch its surface.

CALL: Low, guttural croaks.

MIGRATIONS: The red-breasted merganser prefers salt water and is seldom seen in any numbers in Iowa. Those seen are either solitary or in small flocks. In the spring they seldom appear before April; during the fall they may remain in open water on large rivers after most of the lakes and ponds have frozen.

BREEDING: *Range*—Northern part of the northern hemisphere; in America as far south as central Wisconsin and Minnesota. *Nest*—Among rocks bordering fresh-water ponds and rivers or along the seacoasts, generally sheltered by overhanging vegetation or rock; a small hollow lined with dry grass and down. *Eggs*—6 to 10, olive-buff, hatch in 26 to 28 days. *Downy young*—Resemble those of the common merganser except that the nostril is in the basal portion of the bill, and head coloring is more brownish.

WINTER RANGE: Mainly on the coasts of North America, occasionally in the interior around the Great Lakes and southward.

FOOD: Made up almost entirely of fish up to three or four inches in length, which are swallowed whole—for the most part shiners, carp, and other rough species. Around fish hatcheries or spawning areas these birds might do some damage to young game fish.

IOWA STATUS: Probably the rarest merganser in Iowa. The fish eaten by this bird give its flesh such a rank flavor that is practically inedible. It is, therefore, of little or no importance as a game bird.

CHAPTER VII–SEASONAL AND INDIVIDUAL VARIATION IN PLUMMAGE OF WATERFOWL

SEASONAL VARIATION

Many sportsmen and bird students find the various plumages of waterfowl confusing. During the spring there is little or no trouble in identifying the birds, but during the fall many birds are partly in eclipse or juvenile plumages and few may show the bright adult colors they wear in the spring. As a rule, adult male waterfowl have a plumage change during the summer months, becoming more drab, more like the female. This is called the eclipse plumage. During this period the birds lose the flight feathers of their wings. It seems likely that the purpose of this drab coloring is to render the bird less conspicuous during the period when it is unable to fly. The eclipse plumage, taken on gradually, is complete for only two or three weeks and is then slowly lost. Many species carry most of it well into the fall months and during the open hunting season. As soon as the eclipse plumage is molted the bird resumes its adult or breeding plumage.

Females have no eclipse plumage during the summer but after the breeding season have a postnuptial molt. In most cases the primary feathers are shed while the young are still unable to fly and the adult female and the young get flight feathers at the same time. The female has this plumage through the winter months; it is partly lost in a prenuptial molt in the spring.

Juveniles or immature birds progress to maturity through several molts. Young drakes have molts similar to those of adult males, and second year drakes, even though not in full plumage, take on some eclipse characteristics.

Some of the diving ducks, particularly the true sea ducks, have little or no change during the summer months and their plumage is shed in a post-nuptial molt. After the breeding season, geese and swans also lose their plumage in a postnuptial molt and take on new plumage, which is worn until the following year. In some cases, particularly young birds that are progressing toward maturity, plumage is molted slowly during the winter months.

Individual waterfowl of the same species vary, no two being marked exactly alike, and there is considerable variation as the birds grow older. The average life of ducks is from three to six years; older birds often show the brightest plumage. Also, many of these older birds fail to have a complete eclipse during the summer and take on full breeding plumage early in the fall. Variations in color, however, are not necessarily due to the bird's age. Its body condition or general health, parasites, and disease may also affect certain colors of the plumage. This has been noted particularly in heavily parasite-infested male baldpates and shovelers. Water stains and other marks on the feathers caused by mineral deposits may also give the bird's plumage an entirely different color. (See Water Stains and Albinism.)

ALBINISM

Albinos are found in almost all types of animal life. Albinism is characterized by a lack of pigment and is an inherited characteristic transmitted from one generation to the next. It is usually a recessive trait and normally disappears in a few generations.

Albinos have been found in many species of ducks including mallards, shovelers, wood ducks, and green-winged teal, and can be expected in any species. Many of these birds show almost total albinism, having pure white or light cream plumage. True albinos also have light or pinkish eyes, something that reportedly does not occur in waterfowl—pure white birds usually having normal or almost normal eye color. Other birds are partial albinos, having a mixture of normal and white feathers and normal-colored eyes. This phenomenon is called schizochromism. Some birds are occasionally a little lighter all over (leucism), and conversely some are darker (melanism). All of these birds are freaks and are very rare, but may be encountered in large concentrations of waterfowl.

HYBRIDS

Under natural conditions, distinct species of birds seldom interbreed. If this were not true it would be only a short time until there would be no distinct species. Nearly all closely related species of waterfowl, such as the mallard and black duck, however, occasionally interbreed and consequently hybrids are sometimes encountered. Hybrids have also occurred between mallard and pintail, gadwall and baldpate, mallard and green-winged teal, and may be expected with other species. These hybrids generally show characteristics of both parents and anyone familiar with both species can generally determine the parentage at a glance.

On breeding grounds shared by the Ross' goose and the lesser snow goose, the two species have been observed interbreeding, with hybrid offspring that are intermediate between the two. Identification of these hybrids would be difficult in the hand and probably impossible in the field. They are intermediate in size; bills are also intermediate in size and sometimes have the warty protuberances typical of the adult Ross' goose. But there is so much variation in size of birds of each species that the possibility remains that any

intermediate-size bird is just an unusually large Ross' or an unusually small snow and not a hybrid at all. It is considered likely that the Ross' geese that share nesting grounds with lesser snows may in time disappear as a well-defined species because of this hybridization. If this happens, there probably will still be Ross' geese, those that nest in other areas and do not share their breeding grounds, so that the species itself won't disappear, only the fraction that shares its range with the lesser snow.

At one time it was believed that blue and snow geese were separate species and that birds that appear to be intermediate in plumage were hybrids. Current opinion is that these birds are all color phases of the same species, classified as the lesser snow goose, and that intermediate plumage birds are a color phase and not true hybrids.

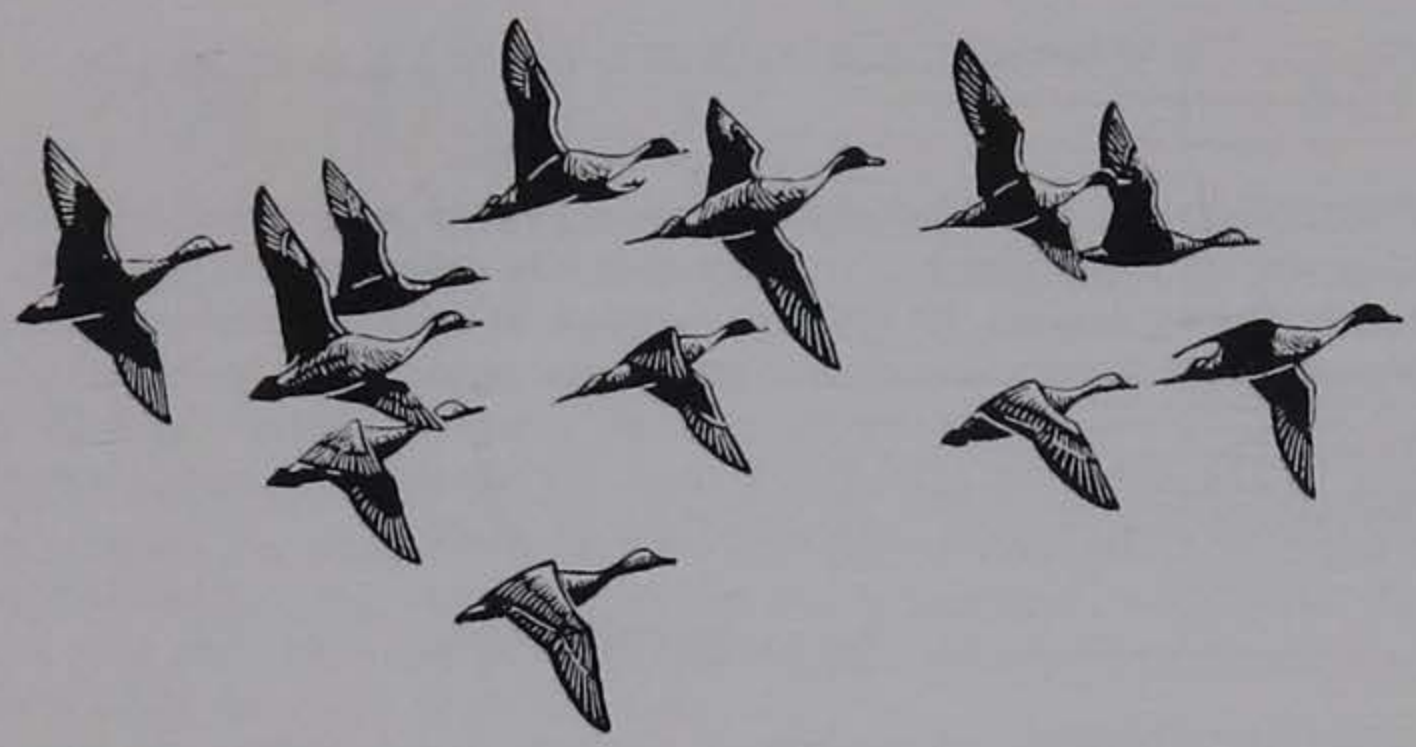
WATER STAINS

Almost all species of ducks and geese sometimes have parts of the plumage, especially heads, necks, and breasts, stained rusty-brown to olive by minerals in solution in water. Among some species, such as the snow goose, this staining is very common, though fewer birds are heavily stained now than in the past. The reason for this change is unknown but one possible explanation is that snow geese have made changes in both breeding and wintering grounds and in so doing may not be using stain-producing habitat as much as in the past.

Bird students and sportsmen often find such water stains confusing. Sometimes birds such as the pintail and baldpate are colored rusty-brown instead of having white breasts or under parts, and such birds may be mistaken for other species or hybrids. Water stains can be confirmed by closer examination; these stains affect only the tips of the feathers, with the basal portions retaining their natural color.

Such stains are acquired in localities in which water is mineralized, but birds that show stain will lose it entirely if confined in areas where no such mineral deposits are found, or if they change the areas where they feed and rest. Decaying vegetation will also sometimes produce a dusky or dirty cast in the plumage, and this stain too is found only on the tips of feathers.

As a general rule only heads and under parts are water-stained, but occasionally sides and even backs of the birds will be affected.



CHAPTER VIII–MIGRATIONS AND FLYWAYS

SPRING MIGRATIONS

Timing of the spring migration will depend on weather conditions and the amount of open water. Most years, waterfowl move into the state in late February or early March, especially if the temperature has been 50° Fahrenheit for at least three days in a row, and the flight will be leisurely. If spring is late, however, the migration may be delayed until late March and the birds will pour into the state in big flocks and move northward very quickly, reaching their nesting grounds at about the same time as if the spring had been normal.

Geese, many of which have wintered just south of the state, will congregate at refuges in Missouri and Illinois and move northward as soon as there is open water. This migration is discussed in Chapter IX.

Among ducks, about the first to arrive will be the common merganser, which sometimes will be observed sitting in small openings in the ice of big rivers or other places where there is a little open water during February. Close behind the mergansers will come goldeneyes.

First of the surface-feeders to migrate will be large flocks of pintails and mallards, with sometimes a few black ducks; these birds will arrive in early March, congregating in spots where there is feed and water. By mid-March, gadwalls, widgeons, and green-winged teal will have arrived. Last of the surface-feeders to migrate into Iowa in the spring will be blue-winged teal, shovelers, and finally wood ducks; these ducks arrive about the first of April.

By the first of April, most of the mallards and pintails will have moved on north, but a few may remain until May. Most gadwalls, wigeons, and green-winged teal will migrate northward in about mid-April. Other surface-feeders will remain until about the middle of May.

Most common diving ducks arrive in Iowa in numbers about the middle of March, congregating in large rafts on lakes and the pools behind dams on the Mississippi, Des Moines, Iowa, and Chariton Rivers. The largest portion of them will move out of the state by mid-April, but some remain until early May.

Some of these migrating ducks, among them mallards, blue-winged teal, ruddy ducks, wood ducks, and occasionally other species, as well as giant Canada geese, remain in Iowa to nest. A few scattered birds may stay in Iowa all summer without nesting; these are often birds which are in poor condition for some reason and are unable to keep up with the main flight to the breeding grounds. Except for these birds, most waterfowl will have moved out of Iowa before the end of May.

FALL MIGRATIONS

The fall migration of waterfowl through Iowa begins in late summer. Earliest of the birds to migrate is the blue-winged teal. Its migration generally starts during the last week in August, continues through September, and most of the birds are gone by the middle of October. The majority of them leave at the time of the first frost. Wood ducks and shovelers, also early migrants, often join the teal and they, too, are gone shortly after the first frost. Small flocks of mallards, pintails, wigeons, and gadwalls may be found migrating as early as September, though their main migration starts around the first to the middle of October and continues until late in the fall. Migration of the green-winged teal usually starts about the first of October and they are gone by the time of the first hard freeze.

The diving ducks, as a rule, are later than the surface-feeders, seldom arriving in Iowa before the tenth of October, with the main migration usually between the fifteenth of October and the first of November. Goldeneyes and mergansers, some other divers, and often very large flocks of mallards are the last ducks to leave in the fall. If the winter is open many of them remain in the state until spring.

It can safely be said that fall migrations begin about the middle of August and continue until about the middle of December, with the main flight between the first of October and the fifteenth of November, depending on the weather.

Early migrant ducks are usually classed as locals, people believing they were all raised in Iowa. A large part of them, however, are stragglers coming in from other states in advance of the main migration.

The nesting ducks of Iowa, which comprise only a small part of the migration through the state, are mainly early migrating species and it is difficult to tell in early fall which groups of ducks were reared in the state and which flocks are migrating from other states. During late August and September, when local ducks are joined by companies of birds from other states, many of the flocks come in at night and observers will note a day-to-day increase on ponds and lakes where Iowa birds have bred.

Recently snow geese, most of which formerly by-passed Iowa during the fall, have been stopping more often. Heaviest flights are usually along the Missouri River, with concentrations of birds in the areas of DeSoto Refuge in Harrison County and Forney Lake in Fremont County near the river, and also at Riverton in Fremont County, on the nearby Nishnabotna River. In addition, smaller numbers occur throughout the state and on the Mississippi River wherever the birds find feed and water.

Geese begin arriving in Iowa in late September, with the height of the flight during the first two weeks of October. Concentrations of birds may remain on large inland bodies of water and along the Mississippi River until December, and they may remain even later at concentration points along the Missouri River.

Migrating waterfowl may remain in an area for a few days to several weeks, depending on weather conditions and the amount of food available. During mild weather the early fall migration is leisurely, with some birds leaving an area and others taking their places, and with little or no difference in numbers until the main flight occurs.

During the open hunting season many birds feed before and after shooting hours, seeking protection of refuges or the open water of large lakes during the day. It is indeed remarkable how quickly ducks and geese learn of the safety provided by refuges, and their ability to move to safe areas during shooting hours has given rise to the friendly allegation that Fish and Wildlife Service leg bands are really wrist watches.

FLYWAYS

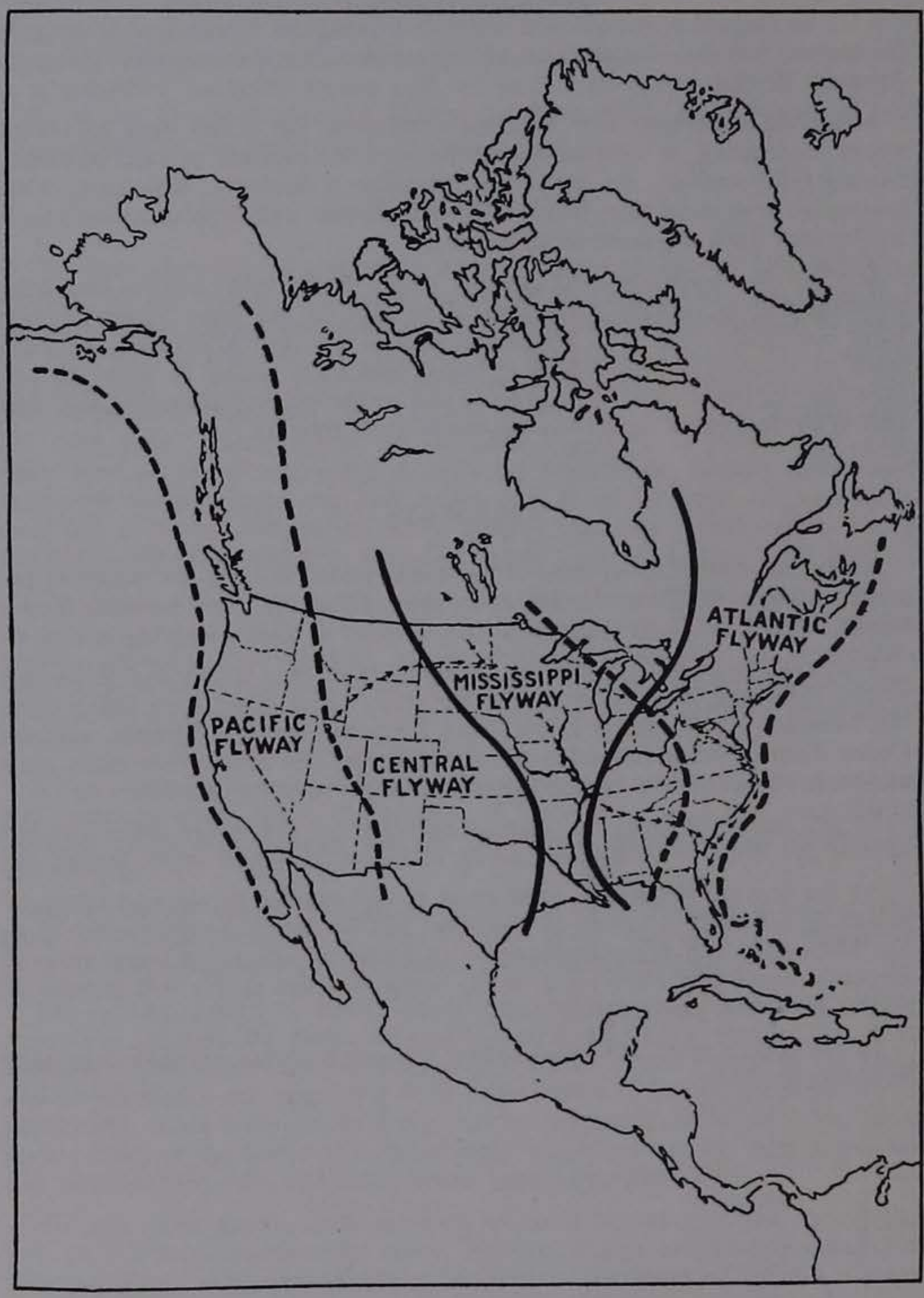
Except for wood ducks, most of the ducks raised in Iowa are reared in the northern counties. From nesting areas they spread out over the state during the fall migration, following rivers and streams to their wintering grounds.

The majority of surface-feeders, including both local ducks and those that nested elsewhere, spread out across the state, some flight lines going down the Missouri River, others going down the Iowa, the Des Moines, and the Cedar Rivers, with a few going down the Mississippi River. Eventually most of them follow the Mississippi Flyway to their wintering grounds.

Diving ducks entering the state congregate on the larger lakes and the Mississippi River, with flights tending to follow the larger rivers southward.

As the season progresses, after most of the smaller ponds and lakes are frozen, great concentrations of waterfowl will be found in open water along the Mississippi and Missouri Rivers, and inland on any of the larger lakes or impoundments that have open water. Some of these ducks will remain all winter if there is open water.

In the spring most waterfowl follow the same routes northward to their breeding grounds.



FLYWAYS OF THE UNITED STATES

CHAPTER IX—THE SPRING GOOSE FLIGHT

Of the many wildlife spectacles, it is doubtful that any surpasses in magnitude and sheer wild beauty the spring flight of snow geese along the broad alluvial floodplain of the Missouri River. This area, scenic and historic, is bordered by rugged loess bluffs where centuries ago wind deposited layer upon layer of fine soil. Water has cut into these compact dunes vertically, leaving sheer walls that at a distance look like miniature mountains, clothed in coarse bluestem grass, studded with drought-resisting yucca, still showing deeply worn trails left by the American bison. Between these bluffs flows the Missouri, once a muddy sprawling stream with shifting sand bars, now almost clear, its floods tamed by high dams and its channel controlled for navigation.

This area has probably been the migration route of snow geese for centuries, but until the last half century it remained almost unnoticed and the lives of these birds were clothed in mystery. Early naturalists—Audubon, Lewis, and others—who came to the area fail to mention the migration; they probably missed the spectacle. For a long time, only those living in the area and perhaps passengers on trains crossing the Missouri bottoms were aware of the magnificent flight. Nowadays naturalists from many parts of the country visit the flight annually and more and more motorists stop along the roadsides to view the thousands of geese resting, feeding, or in flight. Anyone who has witnessed the sight will find himself drawn back year after year by the almost irresistible call of the "waveys".

Northward bound, the geese crowd into the Squaw Creek National Wildlife Refuge near Mound City, Missouri, and then, in early March, often while ice remains on ponds and streams and snow drifts partly cover hills and fill ditches, the first birds push on into Iowa. So anxious are they to move northward that they follow on the heels of the retreating winter, only to be forced back sometimes by severe weather. Advancing, countless thousands join the earliest birds, gathering in huge flocks, covering fields and marshes wherever they stop.

An observer can see them congregated in tightly packed groups, watch them as they take off to feed in the morning, hear the clamor of their voices as they swirl and mill in the air, going to a nearby cornfield to feed on waste grain. Feeding, they swarm over the ground, piling over each other, working

through the fields and cleaning up what remains of last year's crop. Temporarily satisfied, small groups return to the concentration, to be replaced by others—shuttling back and forth between the resting and feeding grounds. Long lines and waving formations arise from the fields—large groups, small groups, even single birds, sometimes with black gumbo and weeds still clinging to their feet.

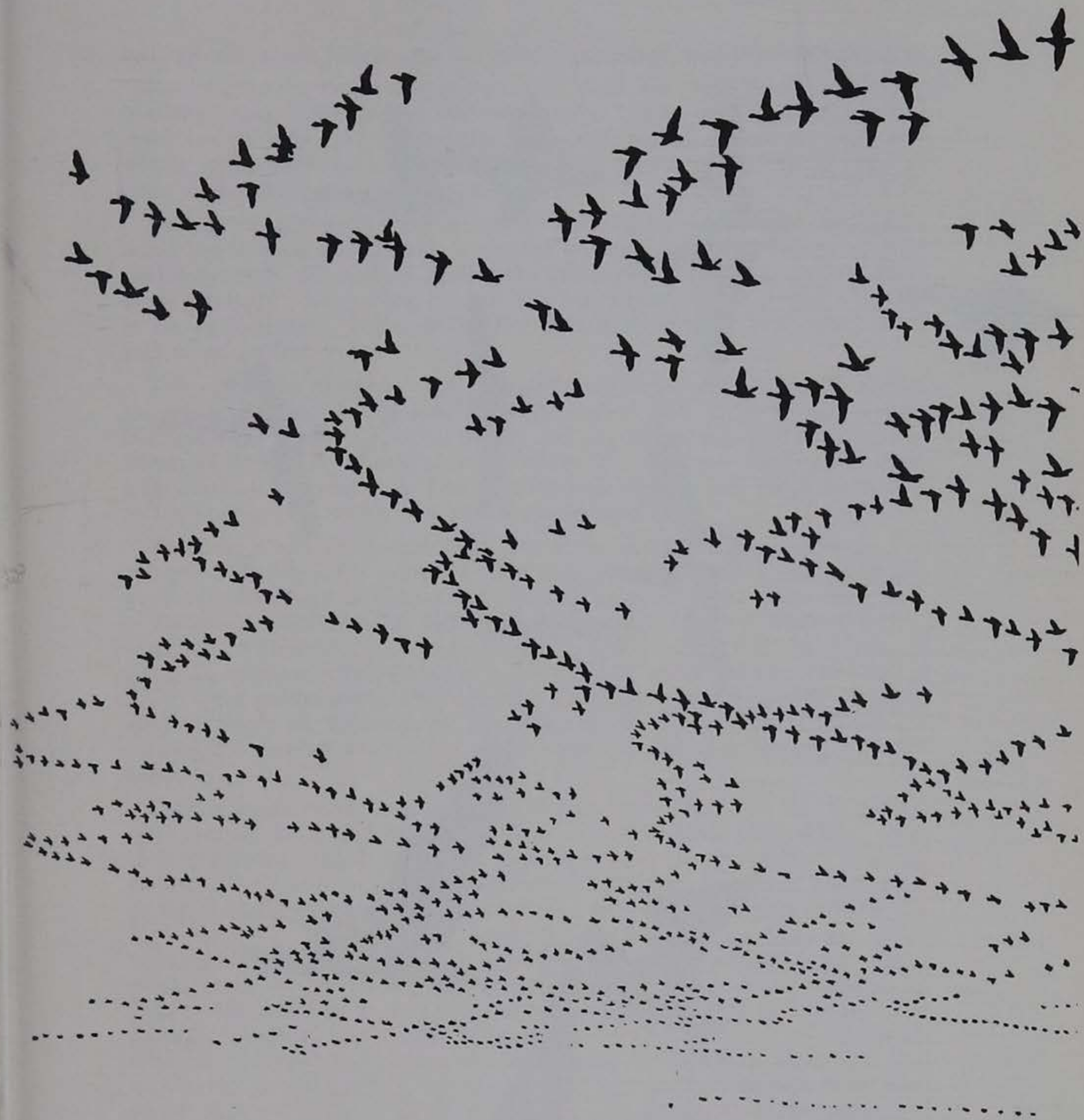
High in the sky overhead, at times barely distinguishable, traveling flocks can be seen—irregular V-formations, large V's, breaking into smaller ones, all overlapping and stretching for miles. Some of the flights continue northward. Others pass the concentration and then, as if by a prearranged signal, break formation, swing and sideslip or tumble like falling leaves, losing altitude rapidly, and alight with the resting flock. As these new arrivals drop from the sky they extend their necks, throw back their wings and dangle their coral-pink legs, light gracefully, take two or three steps to break their momentun and find room to settle in a flock that appeared so densely packed already that there could hardly be room for more.

Where geese congregate, one may watch them resting and preening and see the rust stains on their heads, the crinkled satin of their necks, their countless plumage variations. Among blue-phase geese are young birds of last season's hatch, their dark heads only lightly flecked with white. Others, with more mature plumage, show considerable white on their heads, and veterans of many migrations have the white of their necks running down to the shoulders. There are birds that show plumage characteristics of both blue and snow phases, blotched and piebald in appearance. Nor is variation in plumage limited to blue phase birds, for snows have a variety of water stains; younger birds still have a grayish plumage on their necks and bodies. Rarely is a bird snow white except for its jet-tipped wings. Close observation will usually show that blue phase geese outnumber white ones early in the migration, though the proportion of white birds increases as the season advances.

Among flocks in the air will be small groups or lines of white-fronted geese with speckled bellies, and occasional V's of the largest of American geese, the Canada. In spite of their similar size, the white-fronts are easily distinguished from snows by their laughing calls, slender build, narrow wings, stiff-necked manner of flying, and speckled under parts. Often they break formation, side-slipping, twisting, darting, and gaining momentum at low altitudes over the mass of geese, but seldom alighting with them—choosing instead a resting spot at one side of the concentration. With their sedate flight, glistening black necks, and broad wings, the Canadas look like gigantic bombers among their smaller cousins. Occasionally an observer may see the Richardson's, bantam of the goose family, short and chunky in build but a miniature Canada in behavior.

Through the flocks of geese dart small bunches of ducks, dwarfs in comparison, with rapid wing beats and interrupted flight—pintails in their courtship flights, several long-necked graceful males performing aerial acrobatics for the benefit of a single female; green-winged teal with their high-pitched quacking and darting flight; baldpates with their shrill whistle, swinging low over the marshes and fields; mallards, already paired; redheads with their soft, mewing calls; common mergansers with bright crim-

PLATE X



FORNEY LAKE

PLATE XI

SIDESLIPPING

GETAWAY

son legs, contrasting black and cream-white plumage, and stiff-necked flight.

Not long do the flocks stay at rest. Disturbed, they take to the air with a deafening roar of wings and clamoring voices. Most will soon return, but small groups may take off for the north and hardly be missed. And the milling of the big flock may attract new small flocks, so that the number of geese may remain essentially unchanged.

During the afternoon they go out to feed again, and as the sun drops below the horizon and the sky is painted crimson, the birds return to their resting grounds. Silhouetted against the flaming sky comes the evening flight of the "waveys". Long lines, broken V's, small flocks—like strings of beads in the sky—come in lazily. Even after darkness the birds still come, more and more, settling in for the night.

The migration through Iowa is usually leisurely, the timing depending mostly on weather conditions. The flight usually lasts three or four weeks, the first birds appearing during March and the largest concentration usually occurring about the fifteenth. Areas where the birds are feeding will hold large flocks for several days, and then the bulk of them will move northward to the next spot at which they usually congregate.

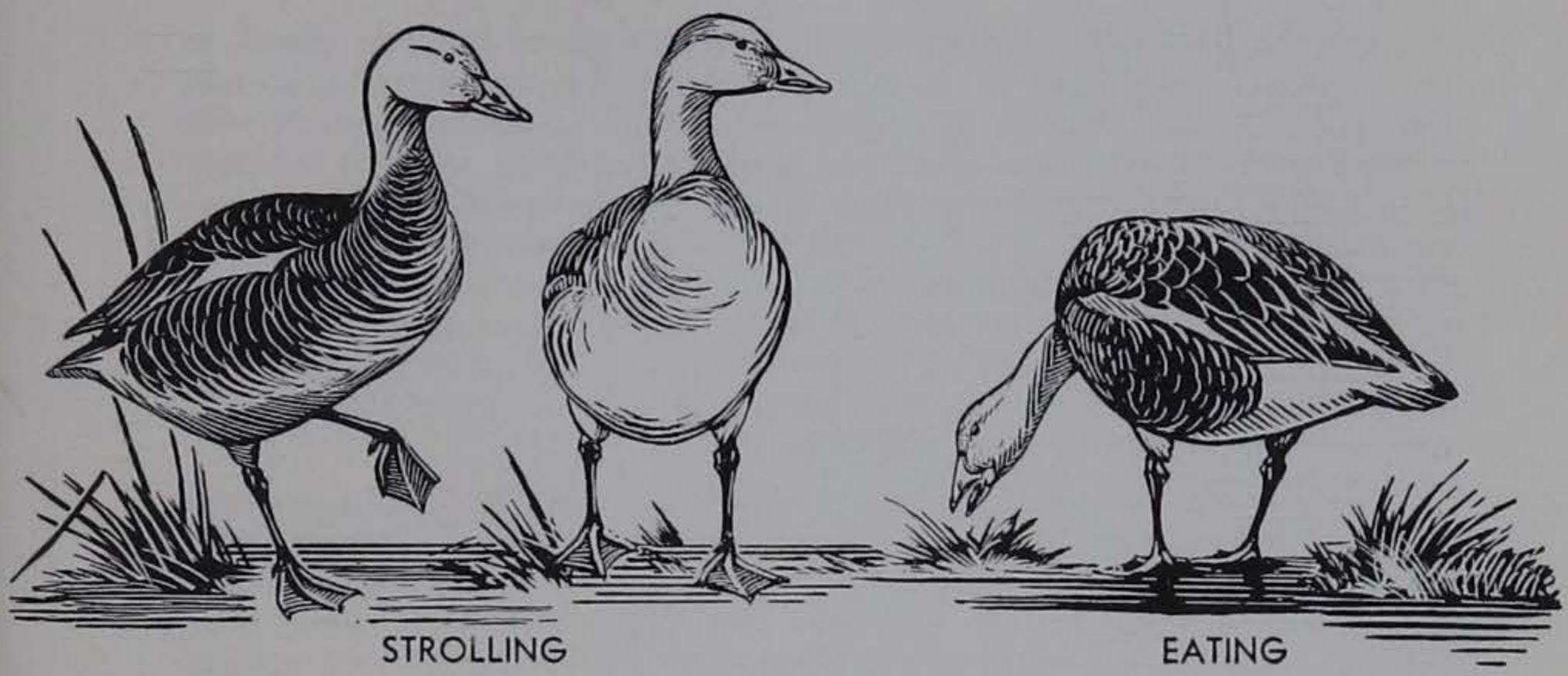
The best places to observe them are at the public shooting grounds and refuge at Forney Lake north of Thurman, where observers can often see good concentrations of birds just by driving on good roads in the area, and at DeSoto National Wildlife Refuge west of Missouri Valley, where the U.S. Fish and Wildlife Service conducts tours of the refuge for observation of geese. In addition, small flocks of a few hundred geese can often be seen at many other points along the Missouri. The state-operated public shooting grounds north of Riverton on the Nishnabotna River, not far from the Missouri, is another western Iowa spot where one can often see big flocks of geese.

During recent years, large numbers of geese have been seen also in central Iowa during the spring migration. Just why some birds have shifted from their traditional flight pattern is uncertain, but several factors may be involved. For one thing, modern agricultural practices leave less waste grain in the fields at harvest time and extensive fall plowing further reduces the food supply in any particular area. In the past, many Missouri valley farmers planted winter wheat, a good source of food for the geese, which would graze on the fresh green growth of early spring. Some farmers, in fact, would complain bitterly that the birds were destroying their crops. The damage, however, was usually insignificant because the roots of the plants were not destroyed and picking the tops caused the plants to spread out and make even greater growth. Nowadays, most farmers have turned away from wheat and are growing other crops, and it may be that the geese are spreading into other areas of the state partly because of a shortage of food.

They also may be attracted by restoration of old sloughs in central Iowa by the State Conservation Commission and by artificial impoundments built by the Commission for recreation and by the U.S. Army Corps of Engineers for flood control and recreation. Whatever the reason, it is now often possible to see large concentrations of geese—not just snows, but Canadas and white-fronts also—in areas of the state well away from the Missouri.

PLATE XII

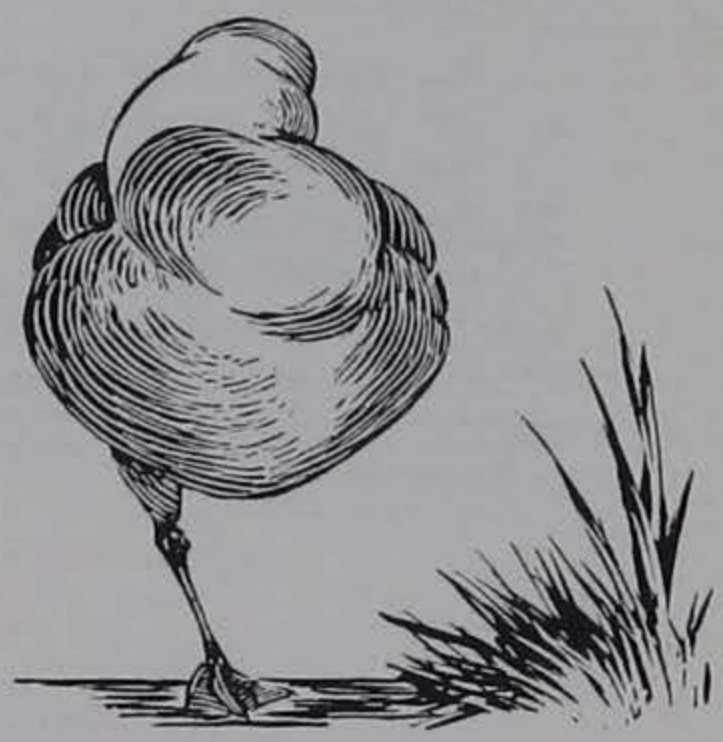
COMING IN



STROLLING

EATING

PREENING



RESTING

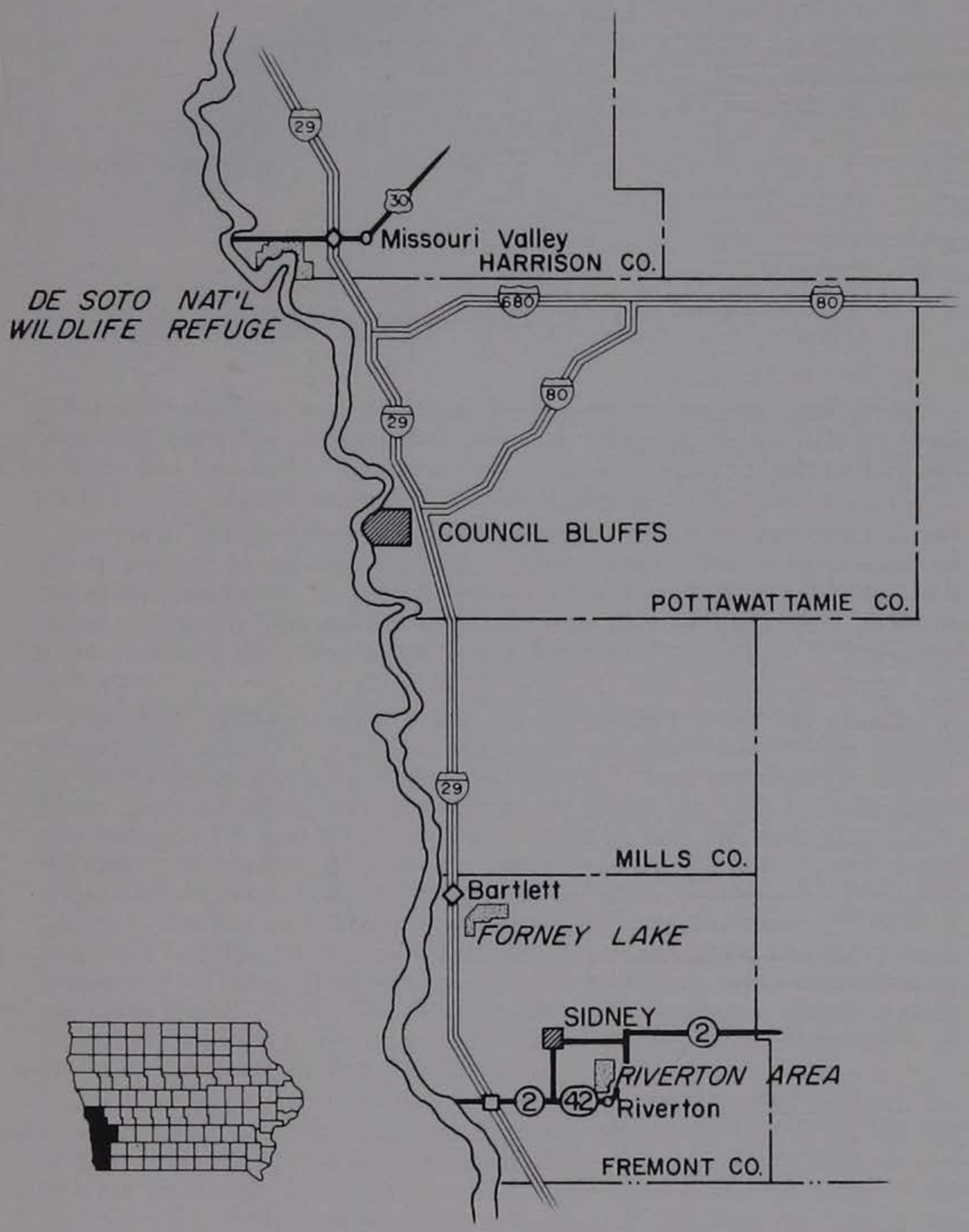
SWIMMING

ALERT

From the standpoint of the observer, probably one of the best places to see geese in central Iowa in the spring is in the area of Bay's Branch and Lakin Slough near Panora and Yale, both public shooting grounds with access roads, and at nearby Long Pond, southwest of Perry, which is privately owned and where the geese can often be seen from the road. Here concentrations of birds usually stay from mid-March to mid-April in places where they can be seen easily from an automobile. Ducks also usually congregate at these places in large numbers. Other areas for observation include the Red Rock Reservoir on the Des Moines River southeast of Des Moines and the Rathbun impoundment on the Chariton River southeast of Chariton, as well as many smaller marshes and lakes.

Moving north, the geese leave the Missouri River near Sioux City, most of them following the Big Sioux River into Minnesota and South Dakota, from there to the marshes near Winnipeg, Manitoba, on to James Bay, and into the Arctic to their nesting grounds. The 3,000-mile flight from their wintering grounds in Louisiana and Texas to their breeding grounds requires about 11 weeks; the geese arrive in their Arctic breeding grounds in mid-June.

Although many people now make a yearly pilgrimage to western Iowa to see the spring goose flight, it is hoped that even more bird lovers will take the opportunity to see the snow geese—a sight to awe anyone who enjoys the outdoors. Information on the flight, location of concentrations, and best routes to follow can be obtained from the State Conservation Commission or from local conservation officers in the area. In most places it is possible to observe the geese from the highway, though one may enjoy a better view by walking closer to the flocks or by settling down to spend the day in an improvised blind.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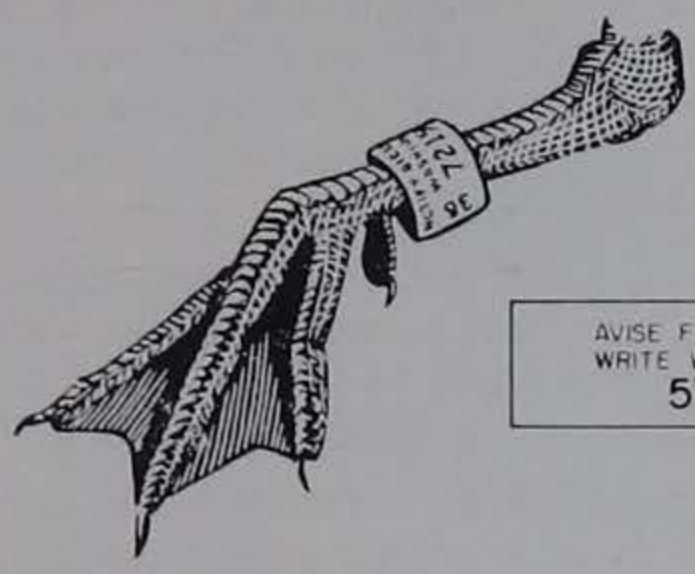
Missouri Valley
HARRISON CO.
DE SOTO NAT'L
WILDLIFE REFUGE
680
80
80
29
COUNCIL BLUFFS
POTTAWATTAMIE CO.
29
MILLS CO.
Bartlett
FORNEY LAKE
SIDNEY
2
RIVERTON AREA
2
42
Riverton
FREMONT CO.



CHAPTER X–MARKED WATERFOWL

For centuries men were mystified by the annual comings and goings of birds, but aside from sentimental contention that a particular beloved robin or wren had returned to the same home year after year, no great effort was made to trace migrations until about the beginning of this century.

Audubon was probably the first American to make any scientifically sound attempt to identify individual birds so their movements could be traced with accuracy. In 1803 he placed silver threads about the legs of a brood of phoebes and was rewarded the next year by being able to determine definitely that two of the brood had returned to nest in the same vicinity.

Systematic banding began in this country in 1901 under the auspices of several bird clubs. The work was taken over on a nationwide basis in 1920 by the Bureau of Biological Survey, now the U.S. Fish and Wildlife Service. There is an old joke about these bands. A hunter was said to have found one that read "Wash. Biol. Surv." on a duck he had shot and, after puzzling about the matter, decided the words were instructions for the bird's preparation—"wash, boil, and serve"—rather than "Washington, Biological Survey". The late Jack Miner also made a big contribution to the field of waterfowl banding by placing leg bands on Canada geese and other birds trapped at his refuge in Kingsville, Ontario, work now being carried on by the Jack Miner Foundation. During the 1930's another agency, Ducks Unlimited, became active in banding waterfowl as part of its program to extend and improve breeding grounds.

The birds are trapped, a band is bent around one leg, and the birds are released unharmed. The bands are fitted to each bird's leg so they are not cumbersome—loose enough to be comfortable but sufficiently tight so they will not get caught on weeds or sticks. Each band bears the name of the service and a serial number. Time and place of banding, number of the band, and species of the bird banded are reported to the Fish and Wildlife Service by the bander.

Many birds, once banded, will be caught in live traps in other parts of the country and are released unharmed after the observation is recorded. Some of them have long records that show their seasonal movements with great

accuracy. Other birds are recovered only after death; in the case of waterfowl, most bands are reported by hunters who have shot birds wearing bands. Anyone finding a bird with one of these bands is requested to report the time and place, species of bird, and serial number of the band to the U.S. Fish and Wildlife Service, Washington, D.C.

State conservation and U.S. Fish and Wildlife Service personnel, often working together, band a great many waterfowl in nesting areas each year. They also trap and band large numbers of birds in refuge areas, wherever birds congregate during migration, and on their wintering grounds.

In connection with research projects, trapped waterfowl are sometimes dyed, and others may be fitted with bright-colored plastic collars. Such color-coded birds are easy to pick out in a big flock and can be followed in migrations without the necessity of trapping and checking for bands. From these observations, wildlife biologists can determine migration dates and fly-way routes between wintering grounds and breeding grounds.

For more immediate information, birds are sometimes fitted with very small radio transmitters and then tracked as they move from one place to another.

Still another technique is to fit a small color-coded plastic device called a nasal saddle through the nostrils of some birds. These birds are not as easy to pick out in a big flock as are dyed birds or birds wearing collars, but a bird marked in this manner will be marked for life and information as to its habits, movements in migration, breeding grounds and wintering grounds can be gathered without the necessity of trapping it again. The McGraw mallards, and their young, which are being used for experimental breeding in southern Iowa, are marked with these plastic devices.

Whatever technique is used to mark birds, the purpose is to increase knowledge of their habits so that game management can be more effective. Data from these studies have helped determine survival rate and life span of waterfowl and have been used in determining migration routes, timing migrations, setting seasons, and determining bag limits. They have helped in development of refuges, wintering grounds, and breeding grounds. With information being gathered from many such projects, wildlife management experts can do a better job of conserving waterfowl.

All observers, whether they hunt or not, can help by reporting any color-marked birds to state or federal wildlife authorities. When banded or nostril-marked birds are recovered, the information should be sent to the appropriate wildlife agency promptly. Because birds that are marked—whether by bands or by some kind of color-coding—are the basis of so much knowledge useful in maintaining our waterfowl populations, the cooperation of all sportsmen and bird students is needed.

CHAPTER XI–ENEMIES OF WATERFOWL

NATURAL ENEMIES

Waterfowl have a large number of natural enemies: birds, mammals, fish, amphibians, and reptiles. Each group takes its toll of eggs and young and sometimes even of adult birds.

Crows and magpies are particularly destructive in areas where ducks nest, destroying thousands of eggs, and starlings destroy many nests in wood duck boxes. On the northern breeding grounds, herring and glaucous gulls have been convicted of eating the eggs of ducks and other water birds, and parasitic jaegers take both eggs and young. The young are preyed upon by the great horned owl, the marsh hawk, the goshawk, and occasionally other species of raptorial birds. Adult birds are sometimes taken by the peregrine falcon (duck hawk) and the bald eagle. In many cases, however, predatory birds that appear to be great destroyers of ducks are also valuable destroyers of rodents and other pests, and because many of the waterfowl taken by them are sick or wounded birds, the damage they do is, as a whole, negligible.

Many species of mammals, particularly the skunk, Franklin's ground squirrel, and coyote, prey upon ducks' nests, while foxes, mink, opossums, and other predatory mammals take eggs, young birds, and any adults they are able to capture. Raccoons, which have increased in numbers recently, have a particularly adverse effect on wood ducks. With the advance of civilization, the prowling house cat has become an enemy of not only young waterfowl but of wildlife in general. The brown or Norway rat, following in man's footsteps, also destroys eggs and young ducks.

As soon as young waterfowl leave their nests and go to lakes or streams, they are exposed to the fish, amphibians, and reptiles of the region. Fish such as the northern pike, the gar, and the black bass destroy considerable numbers of downy young. Almost grown birds have been found in the stomachs of northern pike. Snapping turtles kill many young and partly grown birds. Seizing their victims from beneath, the turtles hold them under water until the frightened bird drowns. Many others are crippled by having their legs injured or completely amputated by the sharp, parrot-like bill of

the snapper. Bullfrogs, too, take many downy young, especially wood ducks. Various snakes, especially bull snakes and water snakes, prey on young ducks and eggs. If snakes are sufficiently abundant in an area, they may properly be charged with measurable damage.

Were it not for the agencies of man, however, wildlife could cope with its natural enemies, which play an important part in maintaining a balance of nature.

DUCK PARASITES

Waterfowl, like other species of wild birds, are heavily infested with parasites, the common forms being flies, true bugs, lice, protozoa, worms, and flukes.

All species of ducks have duck lice in their plumage; the number varies with the individual bird and its condition. Lice feed on the feathers, scales, and body excretions and will not live for any length of time on any animal other than their natural host. They generally have little or no bad effect. Duck lice leave the bird's body seeking a new host as soon as the body temperature begins to drop after death, and are then apt to crawl on the person handling the bird. They are a source of only minor annoyance to the ducks and to the sportsman.

The internal organs of ducks are at times infested with round worms, flukes, and tapeworms, chiefly in the digestive tract but also in the body cavity. In small numbers these parasites have little effect on their host, but if abundant they may cause serious harm or even death. The most numerous of all internal parasites of waterfowl are nematodes, usually found in the alimentary canal and intestines, and if present in sufficiently large numbers, are serious. All of these parasites are common but seldom noted unless a minute examination of the bird's body and its internal organs is made.

A form of protozoan, *Sarcocystis,* is sometimes found in the breast muscles, the muscles of legs and wings, or in almost any other muscular part, and has the appearance of short streaks of yellow fat. These parasites are never seen unless the birds are skinned. The plumage of birds containing large numbers of them is generally rather dull and the general body condition is poorer than that of birds not so infested. Male American wigeons that are heavily infested will often have full adult plumage during the fall rather than the usual eclipse plumage. The parasite is also abundant in the shoveler and often found in the gadwall and blue-winged teal as well as other species.

All infestations of parasites are natural, the parasitic forms being on their natural hosts. As a rule, they are of no serious consequence either to the bird or to the persons who use them as food. Aside from the fact that parasite infestations may spoil one's appetite for wild duck, no harm will result from their use as food if the birds are cooked thoroughly.

DISEASES

Botulism—Botulism generally occurs from Nebraska and the Dakotas westward, and south from the southern part of western Canada. There have

been no reports of it in Iowa, but it is considered to take a larger toll of our western waterfowl than any other single factor. The disease varies in intensity from time to time, and particularly during the years of drought millions of waterfowl perish from its ravages. An outbreak occurred in Minnesota during the severe drought in 1976.

Botulism is caused by a form of bacterium, *Clostridium botulinum,* type C, an organism usually found in shallow stagnant water that is filled with decayed organic matter. Infected birds usually die quickly, but many can be saved if they are picked up, protected from sun, wind, and predators, and given ample supplies of fresh water. Once an outbreak occurs, wildlife biologists recommend that carcasses be disposed of quickly and that waterfowl be discouraged from using the area. Sometimes draining the affected area will help; at other times it is helpful to flood the area so that places where waterfowl have been picking up the bacteria are too deep for the ducks to use for feeding.

Fowl cholera—Another disease that sometimes takes a heavy toll is fowl cholera. Epidemics seem to occur most often when large numbers of birds congregate in one place during wintering or migration and stay for a long time. Fowl cholera is caused by a bacterium, *Pasturella multocida,* which also infects domestic poultry; the disease kills quickly.

Duck virus enteritis—This disease, which first appeared in North America in 1967 in a commercial duck farm on Long Island, was responsible for the deaths of an estimated 40,000 to 43,000 ducks, mostly mallards, and 350 Canada geese when it struck birds wintering at Lake Andes National Wildlife Refuge in southeastern South Dakota in January, 1973. Symptoms of the disease appear three to seven days after the birds are exposed, and they die quickly. Dead birds will have red stripes on their hearts as the result of hemorrhages, hemorrhagic spots on stomach walls and intestines, and both hemorrhagic spots and white spots on their livers; blood often fills the intestines and body cavity. The virus is believed to be present in the wild waterfowl population, and where it will appear next is unknown.

AGENCIES OF MAN

Man is the chief enemy of all waterfowl. Settlement of the country, plowing of prairie soil, and draining of marshlands have destroyed a large part of the original nesting habitats of ducks in Iowa. Only a small percentage of the once-numerous prairie ponds and marshes now exist, and many of these are so heavily grazed that few duck nests are successful. Cottages and resorts now crowd small lakes that were once used as nesting areas, and boats and water skiers crowd the water.

Iowa streams have been badly polluted by industrial wastes, sewage, agricultural insecticides and herbicides, and eroded soil. This pollution has killed much of the aquatic vegetation and rendered some streams unsuitable as habitat for waterfowl. In some parts of the country, streams and lakes are so badly polluted by mercury and other industrial wastes that the public has been warned against eating fish and waterfowl taken from these waters. Interest in cleaning up the environment has increased recently, however, and

the outlook now is much brighter than it was just a few years ago. Iowa lakes and streams are cleaner than they formerly were and, except possibly for silt, the water itself is improving as waterfowl habitat.

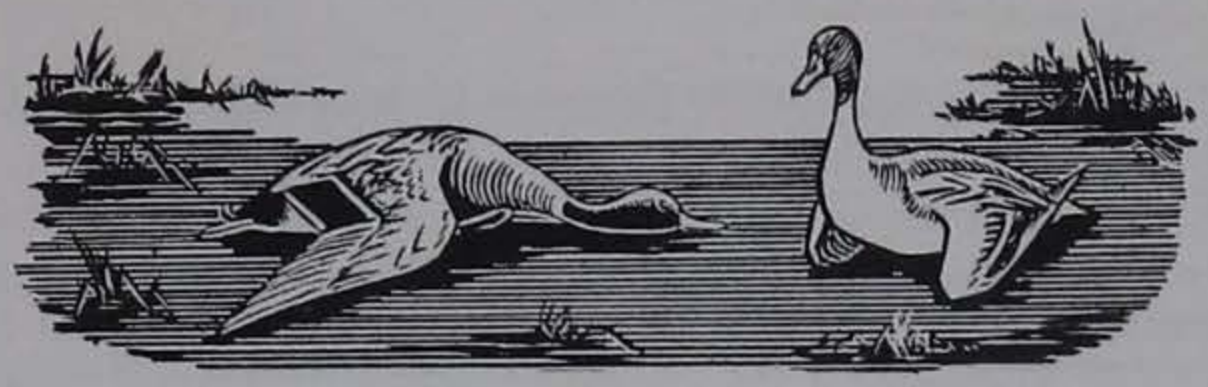
In areas where ducks now nest, particularly in less intensively cultivated regions, nests are often destroyed by burning marshlands. Many ducks nest in or near cultivated fields, where plowing and harvesting annually take their toll. Mowing roadways also destroys the eggs of many birds that have chosen to nest along the roadside near a small marsh or pond.

Also, many ducks are killed annually by lead poisoning from shot that has fallen to the bottom of streams and lakes, and that the birds have picked up. (See Chapter XII.)

Along the seacoasts, waste oil is sometimes dumped by ships, and sometimes large oil spills occur due to accidents involving oil tankers or offshore drilling. This oil is a deathtrap for any waterfowl that may light upon it. The feathers become clogged with the sticky, tarlike oil and the birds are doomed to die a lingering death. On first thought it may seem that this damage would affect only the birds in coastal areas, but many of the ducks that migrate through Iowa visit the coasts during the winter months, and our populations, particularly of diving ducks, may decline from this cause.

With increased barge and boat traffic on inland waterways, as well as greatly increased pleasure motorboating on smaller lakes and streams, oil is also becoming a larger problem in areas far from the ocean. Even boats using small motors may contribute to the pollution, leaving behind a very thin film of oil that may cling to the plumage of waterfowl.

Many people believe that hunting during the open season each fall is the chief factor in cutting down the waterfowl population. It is true that thousands of birds are killed annually, but if it were not for the restoration of nesting areas and protection from poaching provided by funds paid by sportsmen in license fees, federal and state waterfowl stamps, and taxes on equipment, many species of waterfowl might now be extinct. Breeding areas have been built and restored, sloughs used during migration have been preserved, ponds have been built. Some species once on the downgrade have been reestablished. Some, like the Canada goose, are believed to be more plentiful now than when the white man first came to this country. Sportsmen as a whole safeguard their sport with care; the majority of men going into the field think of the future and stay well within their legal limits.



CHAPTER XII–LEAD POISONING

Birds feeding in heavily shot-over areas are apt to swallow lead shot, possibly mistaking it for gravel or weed seeds. When the lead reaches the gizzard and is worn by friction with sand and gravel in this muscular organ, it is absorbed and the bird may develop lead poisoning. Muscles of the breast are first affected and in a short time the bird is unable to fly. The wings hang limp at the sides, dragging on the ground; the breast becomes depressed and the tail droops. The legs are next affected and eventually the bird cannot support its own weight and moves around only by sliding or skidding on its breast.

Paralysis from lead poisoning is not always symmetrical and may affect one side of the body more than the other. Only a very small number of birds recover after having reached the paralyzed stage; they live a few days—occasionally several weeks—gradually wasting away. Usually during the entire period the bird's temperature is normal and it has a good appetite and gorges itself with food. The gizzard is paralyzed, however, and food cannot be digested, usually resulting in severe emaciation before death occurs.

Examination after death usually shows the flesh very pale, the blood thin and watery, and the contents of the gizzard, and often the intestines, stained green. While the bird is alive it is paralyzed except for the eye muscles, the eye usually being very bright and the muscles of the eyelid not affected. The weakened condition, bright eye, and thin, green, watery feces are diagnostic of lead poisoning.

The amount of shot necessary to cause death varies. It is known that six No. 6 shot constitute a lethal dose. In some cases probably two or three shot would be fatal, depending on their size, the bird's body condition, and the quantity of sand or gravel in the gizzard, which would hasten the wear on the shot and speed up dissemination of the poison.

The number of shot found in the gizzards of birds killed by lead poisoning has varied from one pellet to as high as 22, although in some cases it is probable that the offending pellets have been completely disintegrated by the action of the gizzard. Usually the pellet is worn until it is nothing more than a thin flake of lead, and a large number of pellets are not found in all cases. A total of 35 lead-poisoned mallards and pintails

from the Forney Lake area in Fremont County showed only 66 pellets when examined.

It is possible that some of this shot was picked up by the birds before coming into Iowa, but doubtless a great deal of shot comes from our Iowa marshes. The soft, oozy bottoms of most of our ponds and lakes allow the shot to sink so that it is not readily obtained by waterfowl, but on some of the hard-bottomed ponds and lakes, or in shallow water, such shot may be picked up easily.

Most of the lead poisoning that has occurred in this state has been during the spring migrations or in wintering flocks where the birds have not been disturbed and were allowed to rest and feed for long periods in areas that had been heavily shot over. Usually the sick birds are found on the shores or margins of marshes, as they are no longer able to stay in the water. The number of ducks lost after flying to other areas before being stricken is more difficult to ascertain.

In Iowa, the birds affected have been mostly surface-feeders, with the heaviest losses among mallards and pintails, but all species of waterfowl are susceptible to this poison.

Not all waterfowl affected with lead poison die. Some that recover partially may appear to be perfectly healthy, but have absorbed enough lead to render them sterile and incapable of reproduction.

In some places use of steel shot is now required in the hope that it will help cut down on lead poisoning. If this is successful, there appears to be a good likelihood that eventually steel shot will be required for waterfowl hunting nationwide. Meanwhile, the search for other substitutes for lead shot is continuing.

ACCIDENTAL AND HYPOTHETICAL LIST

Below are listed birds that have occurred too infrequently to be classed as regular visitors, or for which specimens are lacking to establish their status as Iowa birds:

ACCIDENTAL

BLACK-BELLIED WHISTLING DUCK, *Dendrocygna autumnalis autumnalis* (LINNAEUS). (Formerly black-bellied tree duck.) An adult female was trapped May 8, 1977, at Zirbel Slough in Cerro Gordo County by Ken Reynolds and DeWaine Jackson, employees of the State Conservation Commission. It was photographed and released. This bird breeds from the extreme southern coast of Texas southward and along both coasts of Mexico and Central America; those breeding in Texas migrate southward to winter.

ATLANTIC BRANT, *Branta bernicla hrota* (MULLER). (Formerly American brant.) An Atlantic brant landed with the giant Canada geese in a pen maintained by the State Conservation Commission at Ingham Lake in Emmet County in October, 1970, and was observed there for nearly a month by Commission personnel. In the past, reports of this brant have been considered to be probably mistakes in identification of some of the smaller canadensis group. Specimens are still lacking, but because of the Ingham Lake record the Atlantic brant must now be considered accidental in Iowa. Sight observations are listed in Anderson's *Birds of Iowa* and DuMont's *Birds of Polk County.*

COMMON EIDER, *Somateria mollissima dresseri* SHARPE. (Formerly American eider.) Recorded near Ruthven in Palo Alto County, October 30, 1942, when ten birds were observed; four were shot on Trumbull Lake in Clay County and one was examined by Ward A. Stevens and Conservation Officer Severson. None of the specimens was preserved. DuMont in *Revised List of Birds of Iowa* listed the American Eider on the basis of one specimen shot in Woodbury County, which is now in the Sioux City Public Museum collection. This specimen was identified by Dr. Guy C. Rich and A. F. Allen. On page 203 of *The Wilson Bulletin* for September, 1934, DuMont recorded a PACIFIC EIDER *Somateria mollisima v-nigra* GRAY, on the basis of this same specimen, which he had formerly listed as the American (now common) eider. In a 1975 publication analyzing duck wings acquired from hunters, the U.S. Fish and Wildlife Service reports that the common eider was taken in Jones and Winnebago Counties during the years 1961-70, but no specific information as to dates and places is given.

KING EIDER, *Somateria spectabilis* (LINNAEUS). DuMont in *Revised List of Birds of Iowa* lists a specimen taken in November, 1894, at Keokuk, now in the collection of the University of Iowa. King eiders were observed in November, 1950, on the Mississippi River opposite New Boston, Illinois, and in December, 1954, at Bellevue in Jackson County. An immature female was shot by John Goecke at Ingham Lake, Emmet County, on November 7, 1971, and is now in the collection of the State Conservation Commission.

HYPOTHETICAL

FULVOUS WHISTLING DUCK, *Dendrocygna bicolor helva* WETMORE AND PETERS. (Formerly fulvous tree duck.) Recorded by Dr. F. L. R.

Roberts in *The Wilson Bulletin* (XLIV, page 180). This was a bird taken in the fall of 1931 in Iowa, possibly near Spirit Lake in Dickinson County; it was not preserved but was examined by F. P. Hopkins, whose description fitted the fulvous whistling duck. Paul Errington reported that at about the same time Frank Marnette of Spirit Lake observed one at a short distance. There are two sight records by W. J. Breckenridge on May 24, 1929, in Lincoln County, Minnesota. More recently, G. J. Horak and F. W. Kaufman report observation of a fulvous whistling duck in Palo Alto County in June, 1963. There is little doubt that this bird has occurred in Iowa, but collection records and specimens are lacking.

MUTE SWAN, *Cygnus olor* (GMELIN). This swan, the one commonly found in parks, has escaped from captivity and about 4,000 of them are now wild in this country. Most of the wild mute swans are on the east coast from Massachusetts to New Jersey, especially on Long Island, in the Puget Sound area in Washington, and in Michigan. In 1971, 40 wild mute swans from Michigan were introduced in strip mines near Canton, Illinois. A mute swan which had been shot was picked up on the Mississippi River in Muscatine County by Conservation Officer Dan Nichols in November, 1962, and identified by Bob Barratt. It seems likely that in the future this swan, which is found wild in Europe, will escape from captivity more frequently and will occur wild in Iowa. The adult mute swan has an orange bill, black at the base and extending to a black fleshy knob on the forehead.

GREATER SNOW GOOSE, *Anser caerulescens atlantica* KENNARD. Probably mistakes in identifying the lesser snow goose, as there are no specimens on record. Many lesser snow geese show measurements that approach those of the greater snow goose.

CACKLING GOOSE, *Branta canadensis minima* RIDGEWAY. A very small goose, approximately the size of a mallard, similar to the Canada goose but even smaller than the Richardson's goose. It has dark under parts distinctly separated from the under tail coverts, which are white. This is a distinct identification mark either in flight or in the hand. The cackling goose was formerly thought to occur in Iowa, but these birds were probably the small and similar Richardson's goose. There are no Iowa specimens of the true cackling goose listed in Anderson's *Birds of Iowa.*

BARROW'S GOLDENEYE, *Bucephala islandica* (GMELIN). A description is included in the main text as a means of identifying this species, which some observers claim to have seen in Iowa. Because specimens are lacking, however, and specimens formerly believed to be Barrow's goldeneye have proved to be the common goldeneye, this bird is placed on the hypothetical list.

MASKED DUCK, *Oxyura dominica* LINNAEUS. According to Woodward H. Brown in *An Annotated List of the Birds of Iowa* (1971), Mrs. H. Whitmus reported observation of a duck having the field marks of the masked duck at Forney Lake in Fremont County on March 14, 1965. The masked duck is a resident of northern South America, Panama, Costa Rica, and the West Indies, and there are a few records of its breeding in Texas, Louisiana, and Florida.

TOPOGRAPHY OF A DUCK

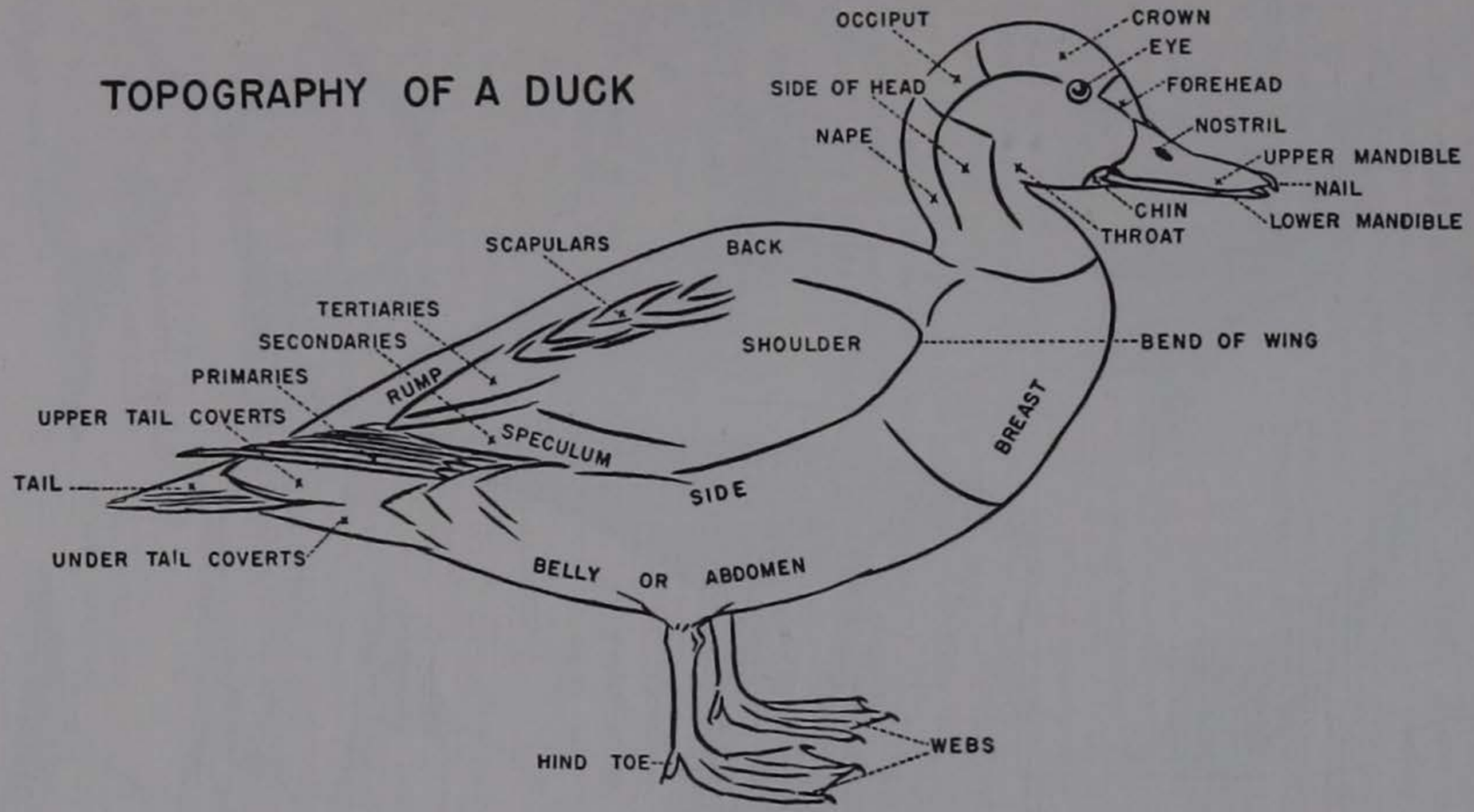
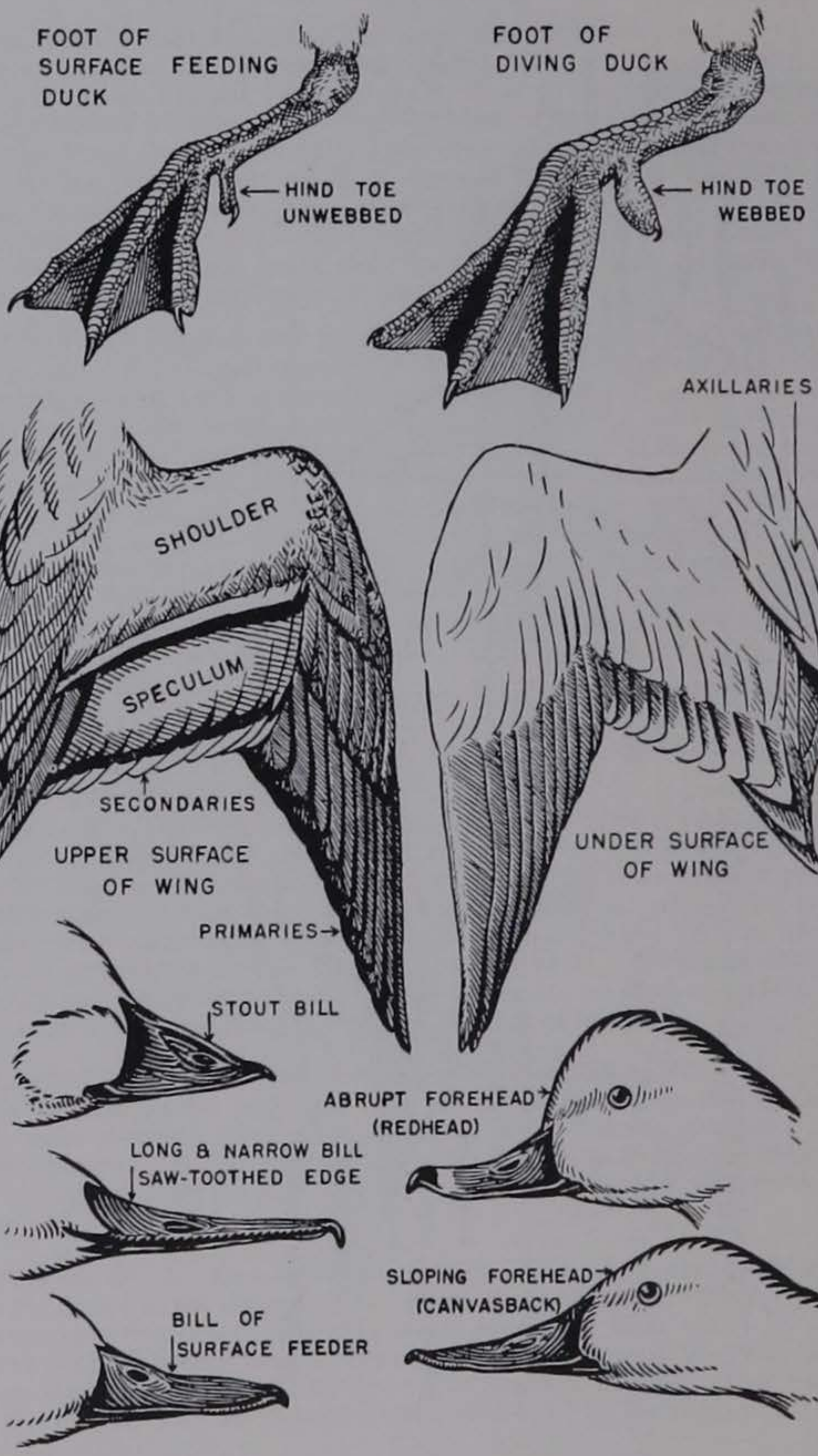


PLATE XVI


FOOT OF SURFACE FEEDING DUCK
HIND TOE UNWEBBED
FOOT OF DIVING DUCK
HIND TOE WEBBED
AXILLARIES
SHOULDER
SPECULUM
SECONDARIES
UPPER SURFACE OF WING
PRIMARIES
UNDER SURFACE OF WING
STOUT BILL
ABRUPT FOREHEAD (REDHEAD)
LONG & NARROW BILL SAW-TOOTHED EDGE
SLOPING FOREHEAD (CANVASBACK)
BILL OF SURFACE FEEDER

KEY TO DUCKS

1. Hind toe unwebbed—river and pond ducks or surface-feeding ducks ..... Go to 2
1. Hind toe webbed—sea ducks and diving ducks, mergansers and ruddy ducks ..... Go to 9

2. Speculum blue or purple, iridescent ..... Go to 3
2. Speculum green or bronze, iridescent ..... Go to 5
2. Speculum black ..... Go to 5
2. Speculum brown ..... Go to 5
2. Speculum gray-green ..... Go to 7
2. Speculum half white and half black ..... Gadwall (male)
2. Speculum half white and half gray ..... Gadwall (female)

3. Head crested ..... Wood Duck (male and female)
3. Head not crested ..... Go to 4

4. Speculum white on both edges ..... Mallard
4. Speculum not edged with white, or at most, on outer edge only ..... Black Duck

5. Speculum edged on inner side with light cinnamon ..... Go to 6
5. Speculum brown, no iridescent sheen, very pronounced white outer edge ..... Pintail (female)
5. Speculum not edged on inner side with light cinnamon ..... Go to 7

6. Length 24 to 30 inches ..... Pintail
6. Length 14 inches ..... American Green-winged Teal

7. Shoulders blue or gray-blue ..... Go to 8
7. Shoulders white or gray ..... Wigeon

a. Axillaries white or lightly mottled with gray ..... American Wigeon
b. Axillaries heavily-mottled gray ..... European Wigeon

8. Length 18 to 20 inches
Bill longer than 2 inches, broad, distinct bristles on sides } ..... Northern Shoveler
8. Length 13 to 17 inches
Head cinnamon-red } ..... Cinnamon Teal (male)
8. Length 13 to 17 inches
Head gray with white crescentic mark } ..... Blue-winged Teal (male)
8. Length 13 to 17 inches
Head neither cinnamon-red nor gray with white crescentic mark } ..... Cinnamon Teal (female)
Blue-winged Teal (female, juvenile male, or eclipse male)

9. Bill narrow, saw-toothed edge, distinctly not duck-like } ..... Go to 10
9. Bill not saw-toothed ..... Go to 12

10. Head crested ..... Go to 11
10. Head not crested ..... Common Merganser

a. Head dark green ..... Adult male

b. Head rusty-brown or rusty-brown showing dark feathers ..... Juvenile male

11. Feet red or orange; Nostril in middle third of bill; White of chin sharply defined from rusty-brown head ..... Common Merganser (female)

11. Feet red or orange; Nostril in basal third of bill; White of chin not sharply defined, blending with throat and neck coloration ..... Red-breasted Merganser

11. Feet not red or orange ..... Hooded Merganser

12. Tail feathers rather long, narrow, and stiff; Neck thick; Under plumage very dense with silvery cast; Bill broad and slightly upturned ..... Ruddy Duck

12. Tail feathers ordinary or central feathers elongated ..... Go to 13

13. Speculum gray ..... Go to 14
13. Speculum white ..... Go to 15
13. Speculum brown ..... Go to 17
13. Speculum metallic blue-black ..... Harlequin Duck (male)
13. Speculum black ..... Go to 18

14. Bill black; Long sloping profile; Length 24 to 25 inches ..... Canvasback

14. Bill broad and gray; High forehead; Length 23 inches ..... Redhead

14. Bill broad; in adults, white at base and across tip; Length 18 inches ..... Ring-Necked Duck

15. Entire body plumage black or dark brown except on speculum and spots on head; Bird large size ..... White-winged Scoter

15. Bill broad and duck-like, blue-gray or gray in color ..... Go to 16

15. Bill small, rather narrow; Head puffy; Length 15 inches; Feet gray or flesh color ..... Bufflehead

15. Bill stout; Head brown, metallic green or purple; Feet yellow, orange or brown ..... Goldeneye

a. Head green; Spot at base of beak round or nearly so ..... Common Goldeneye (male)

b. Head purple
Spot at base of beak
crescent shape
Nail on bill greatly raised } ..... Barrow's Goldeneye (male)

16. White of speculum extending in primaries
to the last two or three feathers
Length about 20 inches } ..... Greater Scaup

16. White of speculum not extending to
the last two or three feathers
Length 18 inches } ..... Lesser Scaup

17. Two central tail feathers elongated
forming a distinct spike ..... Oldsquaw (male)

17. Bill very small, blue-gray in color
Head dark with two or three spots
of white or light gray
Tail feathers long and pointed,
black or dark brown } ..... Harlequin Duck (female)

17. Bill small
Head mottled, largely white or light gray
Tail feathers ordinary and brown } ..... Oldsquaw (female)

17. Bill moderate size
No distinct white spots on head
Plumage mottled gray or brown } ..... Black Scoter (female)

18. Plumage all black ..... Black Scoter (male)

18. Plumage black except spot on
top of head and nape of neck
Bill bright orange or red } ..... Surf Scoter (male)

18. Plumage mottled brown and gray
Head shows distinct light spots
at base of beak and sides of head } ..... Surf Scoter (female)

KEY TO GEESE AND SWANS

19. Body plumage white or light gray or mottled gray and white ..... Go to 20
19. Body plumage deep gray, slate-gray, or brown
Neck gray, white, or brown } ..... Go to 21
19. Body plumage brown or brownish-gray
Neck black } ..... Go to 21

20. Primaries white or gray ..... Swan, Whistling or Trumpeter
20. Primaries black
Length 25 to 28 inches
All three feathers on spurious wing light gray } ..... Lesser Snow Goose, white phase
a. Feet and bill pink ..... adult
b. Feet and bill gray or blue-gray ..... juvenile
20. Primaries black
Length 21 to 26 inches
Longest feather of spurious wing dark gray
May have warty protuberances on bill } ..... Ross' Goose

21. Feet pink, gray, or blue-gray ..... Snow Goose, blue phase
a. Feet and bill pink ..... adult
b. Feet and bill gray or blue-gray ..... juvenile
21. Feet yellow or orange ..... White-fronted Goose
a. Under parts speckled with black ..... adult
b. Under parts plain grayish-brown or tawny ..... juvenile
21. Feet black ..... Go to 22

22. Length 36 to 43 inches ..... Giant Canada Goose
22. Length 32½ to 36 inches ..... Interior Canada Goose
22. Length 25 to 31 inches ..... Lesser Canada Goose
22. Length 23 to 25 inches ..... Richardson's Goose

USE OF THE KEY

For proper use of the key in this volume, the bird to be identified must be in the hand. The key is not intended for any type of field identification.

Before trying to key down any species of bird, it would be well to familiarize one's self with the topography of a duck and the drawings showing various parts of a duck's body. (See Plates 15 and 16.)

As an example, let us take a duck which is unfamiliar. First, looking at its feet, we see that the hind toe has a distinct lobe. The two divisions of the first classification of the key are:

1. Hind toe unwebbed—river and pond ducks or surface-feeding ducks ..... Go to 2
1. Hind toe webbed—sea ducks and diving ducks, mergansers and ruddy ducks ..... Go to 9

This places our bird in the second of the two categories. Going to 9 as instructed we find:

9. Bill narrow, saw-toothed edge, distinctly not duck-like ..... Go to 10

Looking again at our bird, we see that it has an almost cylindrical bill with definite tooth-like projections and a distinct hook, and logically fits this classification. Going to 10 we find:

10. Head crested ..... Go to 11

Since our bird has a very distinct reddish-brown crest, we go to 11 as indicated, and find:

11. Feet red or orange
Nostril in middle third of bill
White of chin sharply defined from rusty-brown head ..... Common Merganser (female)

Looking again at the bird we see that all of these categories fit perfectly, and the name of the species, as identified, is: Common merganser (female).

To satisfy one's self that this is the true identification of the bird, one should then turn to the color plates and to the descriptions given in the text of this book. Obviously there will be occasions when immatures and juveniles cannot be identified for certain this way, but if the general characteristics are fitted to this key, almost any duck can be traced to a species.

GLOSSARY

ADULT ..... Mature, of breeding age
Full mature plumage

AERIAL ..... Performed in the air

ALBINISM ..... Abnormal plumage coloration—lack of pigment

AQUATIC ..... Living in water or pertaining to water

AXILLARIES ..... Elongated feathers on the axilla or armpit

BAR ..... A transverse mark

BASAL ..... Situated at the base

CLUTCH ..... A complement of eggs

COSMOPOLITAN ..... World-wide distribution

COVERT ..... Feathers covering the base of other feathers

CRESCENTIC ..... Crescent-shaped

CREST ..... Topknot or much-elongated feathers on head

CRESTED ..... Head with crest

CYLINDRICAL ..... Shaped like a cylinder

DISTRIBUTION ..... Geographical range

DOWN ..... Soft feathers

DOWNY YOUNG ..... Newly-hatched (First plumage)

ECLIPSE PLUMAGE .... An incomplete molt of the feathers of males of certain species

HABITAT ..... Natural environment

HYBRID ..... Offspring of parents of different species

IMMATURE ..... Not fully grown

INCUBATION ..... The sitting upon eggs to hatch them by the warmth of the body

IRIDESCENT ..... With changeable color in different lights

IRIS ..... Colored portion of eye surrounding the pupil

JUVENILE PLUMAGE ... Plumage succeeding the natal down

LEUCISM ..... Abnormal plumage coloration—a little lighter all over

LOWER TAIL COVERTS Feathers overlapping the base of tail feathers from beneath

MANDIBLE ..... Either of the jaws of a bird's bill

MATURITY ..... Having attained complete adult plumage

MELANISM ..... Abnormal plumage coloration—darker all over

MIGRANT ..... Found in certain districts only during migrations

MIGRATORY ..... Moving regularly from one region to another

MOLLUSKS ..... Shellfish, clams, bivalves, oysters

MOLT ..... Shedding of feathers at certain periods

NAIL ..... A horny plate or tip on the beak

NAPE ..... The hindneck

OCHEROUS ..... Color of ocher

PLUMAGE ..... The entire covering of feathers

POSTNUPTIAL .....After the breeding season
PRENUPTIAL.....Before the breeding season
PRIMARY .....Feathers of the pinion—one of the flight feathers
SCAPULARS.....Feathers of the scapular or shoulder region
SCHIZOCHROMISM ....Abnormal plumage coloration—mixture of normal and white feathers
SECONDARY .....Any of the flight feathers of the forearm
SPECIES .....A distinct sort or kind of animal or plant
SPECULUM .....Area of the secondary wing feathers, sometimes brightly colored
SPURIOUS WING .....Three feathers at the bend of the wing
UNDER TAIL COVERTS Feathers covering base of tail from below
UNIFORM.....Same color or shade
UPPER TAIL COVERTS .Feathers covering base of tail from above
VISITOR .....A species found only at certain seasons

INDEX

(Principal names and references appear in CAPITAL LETTERS; scientific names appear in *italics*; common names other than accepted form appear in small letters.)