

IOWA STATE TEACHERS COLLEGE
CEDAR FALLS, IOWA

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May 17, 1937.

Dr. P. A. DuMont,
University of Iowa,
Iowa City, Iowa.

Dear Dr. DuMont:-

The enclosed key is one I have been using in a 4-weeks course in bird study. If you should have occasion to look it over, I would very much appreciate any suggestions, corrections, and additions. I realize there are a number of weak spots left.

My first ornithological training was at Oberlin under Lynde Jones, though all my graduate work has been at the University of Minnesota, with the exception of a year and a half spent in the South Seas on a fellowship from Yale. I am entirely new to this state, and in endeavouring to build up an acquaintanceship with what work has already been done here, I would like to ask if you would be so kind as to send me a set of your reprints and to put me on your mailing list. My own research work, unfortunately, is entirely botanical and deals with the islands of Polynesia, though I am sending under separate cover a paper that comes a little closer home.

Very sincerely,

Martin L. Grant

Nov. 15, 1937

P.S.: I sent this to Iowa City, from whence it was returned unclaimed, & only recently have I secured your address.

-M. L. Grant

Dumont

A KEY TO AND SYNOPSIS OF THE ORDERS AND FAMILIES
OF IOWA BIRDS

All birds that have ever been recorded in Iowa are treated here, including some that are now extinct and many that are of accidental occurrence only. The numbers of species listed for the various families thus include some which no longer are found, or which have been recorded only once. In listing the total numbers of species, subspecific distinctions have been ignored, e. g., the two races of song sparrows are treated as a single species.

The key is for use in the laboratory, not in the field. In most instances a bird must be examined at very close range in order to systematically complete its identification.

The key should serve to carry the identification of a bird to the proper order and then to the proper family. Thus, when the order is found by means of key A, turn to that order in list B and determine the name of the family. For determinations down to the individual species the student is referred to Reed's Bird Guides, or to the keys in Chapman's Birds of Eastern North America or in Roberts' Birds of Minnesota. For a list of the characteristics of the orders and the names of the species in each family, reference should be made to the mimeographed list headed "Bird Orders" (Nat. Science 7a).

are The material on which the keys are based has been compiled from many sources, particularly Chapman and Roberts. The key to the orders has been considerably modified from that of Roberts. Data as to the distribution of Iowa birds *is* taken largely from Dumont, 1933, *A Revised List of the Birds of Iowa*, and supplementary papers. Notification as to errors found in the keys will be greatly appreciated.

Martin L. Grant

Iowa State Teachers College

Cedar Falls, Iowa

1937

A. KEY TO THE ORDERS OF IOWA BIRDS.

1. Front toes connected by a full web.

2. All four toes included in a continuous web; bill with a bare (small or large) pouch beneath; length 30-60 inches; pelicans, cormorants, etc. -III. PELECANIFORMES.

2a. Only the front toes webbed, the hind toe free or absent.

3. Bill duck-like, flattened, ^{usually} wider than high, with a nail-like tip, and a series of strainer-like or tooth-like projections on the margins of both mandibles; body heavy; hind toe elevated; wings relatively short; tarsus scutellate in front (ducks, mergansers) or reticulate (geese, swans); length 14-65 inches. -V. ANSERIFORMES.

3a. Bill ~~generally higher than wide, at least not flattened and without projections on the margins of the mandibles~~, *not flattened (exc. avocet), thus higher than wide*

4. Tarsus scutellate; ^{in front} length 9-24 inches; gulls, terns, jaegers, murres. -IX. CHARADRIIFORMES.

4a. Tarsus reticulate; ^{in front} bill sharp; plumage black and white, some species with red or buff.

5. Legs short, stout, placed at rear of body, tarsus $2\frac{1}{2}$ - $3\frac{1}{2}$ inches long; hind toe little elevated, laterally placed, with a flap; bill long, straight, heavy, laterally compressed; length 25-32 inches; loons. -I. GAVIIFORMES.

5a. Legs long, slender, ^{placed near center of body} ~~centrally located~~, tarsus $3\frac{3}{4}$ inches long; hind toe very small, elevated; bill very slender, upturned; length $16\frac{1}{2}$ inches; avocet. -IX. CHARADRIIFORMES.

1a. Toes not fully webbed, the web absent, or small (only at base of toes), or incomplete (not fully connecting the toes).

6. Toes lobed, i.e., with lateral wing-like membranes; *tarsus scutellate in front*

7. Front toe-nails flattened like human nails; lobes not scalloped; legs placed far back on body; tail not evident, a small tuft of quill-less feathers; bill narrow, higher than wide, sharp (blunt in pied-billed grebe); lores partially bare; length 12-28 inches; grebes. -II. COLYMBIFORMES.

7a. Front toe-nails not flattened; lobes scalloped.

8. Bill stout; front of crown with a bare light-brown plate of horny skin; body slate-color, feet dark green; length 15 inches; coot. -VIII. GRUIFORMES.

8a. Bill very slender; crown without a horny plate; body gray and/or brownish above, white below, feet gray; length 7-10 inches; phalaropes. -IX. CHARADRIIFORMES.

6a. Toes not lobed.

9. Cere (soft swollen membrane or waxy covering into which the nostrils open) present at base of bill.

10. Eyes directed forward, fixed in the head; head large, with facial disk of stiffened feathers; bill strongly hooked; neck short; plumage soft, feathers without aftershafts; ^{2nd toes} outer toe reversible, ^{otherwise} usually directed backwards; claws large, much curved; tarsus ^{usually feathered}; length 8-27 inches; owls. -XIII. STRIGIFORMES.

3.
Key to Orders

10a. Eyes directed laterally, movable; no facial disk present; plumage not particularly soft.

11. Toes paired, two in front and two behind, i.e., the outer toe reversed; bill hooked, heavy, with a conspicuous tooth and notch in the middle, lower mandible scoop-shaped; length $12\frac{1}{2}$ inches; paroquets. -XI. PSITTACIFORMES.

11a. Toes three in front and one behind (outer toe reversible in osprey).

12. Bill strongly hooked; claws large, much curved; feathers with after-shafts; length 10-36 inches; hawks, birds of prey. -VI. FALCONIFORMES.

12a. Bill compressed in the middle, not strongly hooked; claws neither large nor much curved; head small; body heavy; wings long and pointed; small bare space above eye; tarsus scutellate in front; toes all on same level; length 11-16 inches; pigeons and doves. -X. COLUMBIFORMES.

9a. Bill without a cere.

13. Toes paired, two in front and two behind; bill not hooked; tarsus scutellate in front.

14. Bill straight, heavy, chisel-like; tail stiff, rigid; length $6\frac{1}{2}$ -17 inches; woodpeckers. -XVII. PICIFORMES.

14a. Bill curved, pointed, not chisel-like; tail long and soft, rounded; plumage brownish above, white below; length 12 inches; cuckoos. -XII. CUCULIFORMES.

13a. Toes three (or two) in front; one (or none) behind.

15. Toes three; bill straight.

16. Toes two in front and one behind; legs short; tail stiff, rigid, bill heavy, chisel-like; tarsus scutellate; plumage black above, crown ^{of male} yellow; length $9\frac{1}{2}$ inches; three-toed woodpecker. -XVII. PICIFORMES.

16a. Toes three in front, none behind; legs relatively long; tail not stiff; bill rather slender, not chisel-like; tarsus ~~usually~~ ^{in front} reticulate (scutellate in turnstone and sanderling); length 6-11 inches; 6 species of plovers and sandpipers. -IX. CHARADRIIFORMES.

15a. Toes four.

17. The two outer (front) toes conspicuously united for much of their length; feet small, weak; tarsus short, scutellate in front; head large; bill heron-like; plumage blue-gray above, white below; length 13 inches; kingfisher. -XVI. CORACIIFORMES.

17a. The two outer toes not conspicuously united (may be slightly webbed at base).

18. Hind toe raised above the level of the others.

19. Bill about 5 inches long or more; legs and neck long; *tarsus scutellate in front.*

20. Bill straight; head partly bare, the lores sparsely covered with hair-like bristles; outermost primaries shorter than central ones; length 36-50 inches; cranes. -VIII. GRUIFORMES.

Key to Orders

20a. Bill curved down; head fully feathered; length 24 inches;
long-billed curlew. -IX. CHARADRIIFORMES.

19a. Bill shorter.

21. Hind toe well-developed, only slightly raised; outer primaries shorter than central ones; bill $\frac{1}{2}$ - $2\frac{1}{2}$ inches long; length 5-18 inches; rails.
Tarsus scutellate in front -VIII. GRUIFORMES.

21a. Hind toe small, much elevated.

22. Bill hen-like, ^{in front} short, arched, upper mandible closing over lower; feet strong, tarsus scutellate; outer wing feathers stiff; length 10-48 inches; grouse, quail, pheasant, turkey, etc. -VII. GALLIFORMES.

22a. Bill slender, not arched, upper mandible not closing over lower; sandpipers, plover, etc. -IX. CHARADRIIFORMES.

18a. Hind toe on a level with the others.

23. Legs and feet very small; bill very short (except hummingbird); wings long.

24. Length $7\frac{1}{2}$ -12 inches; inner edge of middle toe-nail comb-like; plumage soft and loose, brown buff and black; mouth large, reaching to below eyes, with long stiffened bristles along border; tarsus scaly; nighthawk, whippoorwill, etc. -XIV. CAPRIMULGIFORMES.

24a. Length $3\frac{1}{2}$ or $5\frac{1}{2}$ inches; inner edge of middle toe-nail not comb-like; plumage not soft and loose, sooty gray or greenish; swift and hummingbird. -XV. MICROPODIFORMES.

23a. Legs and feet not particularly small in proportion to size of bird.

25. Front of crown with a bare red plate of horny skin; outermost primaries shorter than central ones; body bluish-slate; legs red; length $13\frac{1}{2}$ inches; gallinule. -VIII. GRUIFORMES.

25a. Crown without a horny plate.

26. Legs and neck very long; bill over $1\frac{3}{4}$ inches long; part of head (at least the lores) bare; toes slightly or not at all webbed; inner border of middle toe-nail comb-like (except ibis); length 13-50 inches; wading birds; herons, bitterns, ibises. -IV. CICONIIFORMES.

26a. Legs and neck comparatively short; bill usually shorter; head fully feathered; toes not at all webbed; length 4- $12\frac{1}{2}$ inches (except crow, raven, and magpie, which are 17-25 inches long); tail feathers 12; tarsus scutellate in front (except thrushes and kinglets); perching birds, song birds, including most common land birds. -XVIII. PASSERIFORMES.

inner border of middle toe-nail not comb-like.

B. LIST OF ORDERS AND KEYS TO FAMILIES.

I. GAVIIFORMES. One family; loons; 3 species.

-1. Gaviidae.

II. COLYMBIFORMES. One family; grebes; 5 species.

-1. Colymbidae.

III. PELECANIFORMES. Totipalmate swimmers; pelicans, cormorants, etc.; 5 species.

1. All four toes fully webbed; lores bare; tail not forked; feet large.

2. Bill hooked.

3. Bill large, over 10 inches long, with large pouch extending entire length of lower mandible; plumage brown or white; length 50-60 inches; pelicans; 2 species.

-1. Pelecanidae.

3a. Bill smaller, under 3 inches long, pouch inconspicuous; plumage black or blackish; length 30 inches; cormorants; 1 species.

-2. Phalacrocoracidae.

2a. Bill not hooked, sharp, slender; tail rounded, over 9 inches long, the middle feathers fluted; length 34 inches; water-turkey; 1 species.

-3. Anhingidae.

1a. Front toes not fully webbed; lores feathered; tail deeply forked, about 17 inches long; feet small; length 40 inches; man-o'-war bird; 1 species.

-4. Fregatidae.

IV. CICONIIFORMES. Herons, bitterns, ibises, etc.; 11 species.

1. Bill straight, sharp; middle toe-nail with a comb-like margin; length 13-50 inches; herons, egrets, and bitterns; 9 species.

-1. Ardeidae.

1a. Bill down-curved, not sharp; middle toe-nail without comb.

2. Entire head scaly, without feathers; plumage white; length 40 inches; wood ibis; 1 species.

-2. Ciconiidae.

2a. Back of head feathered, the face bare; plumage dark, prevailing chestnut; length 24 inches; glossy ibis; 1 species.

-3. Threskiornithidae.

V. ANSERIFORMES. One family; ducks, geese, swans; 35 species.

-1. Anatidae.

VI. FALCONIFORMES. Birds of prey; hawks, falcons, vultures, etc.; 22 species.

1. Head and upper neck bare of feathers; nostrils forming a complete perforation through the bill; claws not strongly curved; plumage black, head red or black; length 24-30 inches; vultures; 2 species.

-1. Cathartidae.

1a. Head feathered; nostrils not meeting through the bill; claws strongly curved; plumage never completely black.

2. Tarsus scutellate (^{reticulate in} ~~ex~~ osprey) ^{or feathered}; nostril not circular; bill not toothed or notched or but weakly so; wings more or less rounded; length 12-36 inches; hawks, eagles, kites, osprey; 16 species.

-2. Accipitridae.

2a. Tarsus reticulate; nostril circular; bill with a conspicuous tooth and notch near the tip; wings sharply pointed; length 10 $\frac{1}{2}$ -18 inches; falcons; 4 species.

-3. Falconidae.

6.
Orders and Families

VII. GALLIFORMES. Chicken-like birds; upland game birds; 7 species.

1. Legs feathered nearly or quite to the toes; length 17-18 inches; grouse, prairie chicken; 3 species. -1. Tetraonidae.

1a. Legs not feathered to toes, the tarsus scaly.

2. Tail pointed, usually longer than body; skin around eyes bare in male; length 20-36 inches; pheasant; 1 species. -3. Phasianidae.

2a. Tail square or rounded, shorter than body.

3. Head feathered; length 10-12 $\frac{1}{2}$ inches; bob-white, partridge; 2 species. -2. Perdixidae.

3a. Head bare, red; length 48 inches; turkey; 1 species. -4. Meleagrididae.

VIII. GRUIFORMES. Marsh birds; cranes, rails, etc.; 9 species.

1. Length 36-50 inches; legs and neck very long; bill 5 inches long; head partly bare; cranes; 2 species. -1. Gruidae.

1a. Length 5-18 inches; bill $\frac{1}{2}$ -2 $\frac{1}{2}$ inches long; rails, gallinule, coot; 7 species. -2. Rallidae.

IX. CHARADRIIFORMES. Shore-birds, gulls, murres, etc.; 48 species.

1. Legs extremely long, tarsus $3\frac{3}{4}$ -4 inches, reticulate; toes partly (stilt) or fully (avocet) webbed; bill 2-3 $\frac{3}{4}$ inches long, very slender and sharp, straight (stilt) or upturned (avocet); plumage black and white (and buff in avocet); length 15-17 inches; stilt and avocet; 2 species. -3. Recurvirostridae.

1a. Legs shorter, tarsus $\frac{3}{4}$ -3 inches long.

2. Front toes fully webbed; tarsus scutellate.

3. Toes three, with sharp nails; legs very short, placed at rear of body; bill stout, $\frac{1}{2}$ inch deep at nostril, 1 $\frac{1}{4}$ inches long; wings short, pointed; body duck-like, but with shorter neck; plumage black above, white below; length 16 $\frac{1}{2}$ inches; murre; 1 species. -7. Alcidae.

3a. Toes four; wings long.

4. Bill hawk-like, with a hooked nail at end and a cere-like shield at base, 1-1 $\frac{1}{4}$ inches long; tail long (6-12 inches), the central feathers elongated; plumage dark above; length 17-21 inches; jaegers; 2 species. -5. Stercorariidae.

4a. Bill straight or slightly down-curved and hooked, without a nail or cere; tail approximately square (gulls), or forked (terns); tarsus $\frac{3}{4}$ -2 $\frac{1}{2}$ inches long; length 9-24 inches; gulls and terns; 11 species. -6. Laridae.

2a. Front toes without web, or partially webbed.

Orders and Families

5. Toes lobed, i.e., with lateral wing-like membranes; bill (straight) and tarsus each $\frac{3}{4}$ - $1\frac{1}{2}$ inches long; length $7\frac{3}{4}$ - $9\frac{1}{2}$ inches; phalaropes; 2 species.
 (scutellate) -4. Phalaropodidae.

5a. Toes not lobed.

6. Tarsus reticulate, $\frac{3}{4}$ - 2 inches long; bill stiff, rather stout, higher than wide, the terminal half somewhat enlarged, $\frac{1}{2}$ - $1\frac{1}{2}$ inches long; toes 3 (except the black-bellied plover); length $6\frac{3}{4}$ - 11 inches; plovers (and turnstone, see below); 6 species.
-1. Charadriidae.

6a. Tarsus scutellate; toes 4 (except sanderling).

7. Bill hard, inflexible, sharp-pointed, tapering uniformly from base to tip, 1 inch long; tarsus 1 inch long; length $9\frac{1}{2}$ inches; turnstone in family Charadriidae (No.1), which see above.

7a. Bill soft, flexible, at least for terminal half, not distinctly sharp-pointed nor tapering evenly, rounded or slightly flattened at tip, not obviously higher than wide nor enlarged at tip, $\frac{3}{4}$ - 6 inches long; tarsus $\frac{3}{4}$ - 3 inches long; length 6-24 inches; sandpipers; 24 species.
-2. Scolopacidae.

X. COLUMBIFORMES. One family; pigeons and doves; 3 species. -1. Columbidae.

XI. PSITTACIFORMES. One family; paroquets; 1 species. -1. Psittacidae.

XII. CUCULIFORMES. One family; cuckoos; 2 species. -1. Cuculidae.

XIII. STRIGIFORMES. Owls; 10 species.

1. Facial disk heart-shaped; inner edge of middle toe-nail with comb-like edge; primaries not notched or emarginate; length 16-18 inches; barn owls; 1 species.
-1. Tytonidae.

1a. Facial disk circular; inner edge of middle toe-nail without comb-like edge; one or more primaries notched or emarginate; length 8-27 inches; owls; 9 species.
-2. Strigidae.

XIV. CAPRIMULGIFORMES. One family; nighthawks, whippoorwills, etc.; 4 species.
-1. Caprimulgidae.

XV. MICROPODIFORMES. Swifts and hummingbirds; 2 species.

1. Length $5\frac{1}{2}$ inches; bill short ($\frac{1}{2}$ inch), broad at base; tail feathers spine-tipped; plumage gray; tarsus scaleless; swift; 1 species. -1. Micropodidae.

1a. Length $3\frac{1}{2}$ inches; bill longer than head ($\frac{2}{3}$ inch), very slender; tail feathers not spine-tipped; upper parts green; hummingbird; 1 species. -2. Trochilidae.

XVI. CORACIIFORMES. One family; kingfisher; 1 species. -1. Alcedinidae.

XVII. PICIFORMES. One family; woodpeckers; 10 species. -1. Picidae.

XVIII. PASSERIFORMES. Perching birds, song birds; 157 species.

Orders and Families

XVIII. PASSERIFORMES. Perching-Birds.

1. Bill flattened, wider than high at base, minutely hooked.

2. Wings long and pointed, usually ~~as long as~~ ^{extending to tip of} tail, the outermost (second) primary longest; mouth wide, reaching to below eye; no evident bristles at base of bill; legs short and weak; tail usually forked; length $5\frac{1}{2}$ - $7\frac{1}{2}$ inches; swallows; 6 species.
-3. Hirundinidae.

2a. Wings not long and pointed, ~~much shorter than~~ ^{not reaching the tip of the} tail; mouth not prominently wide.

3. Back of tarsus rounded like the front; outermost (first) primary $\frac{2}{3}$ (or more) as long as the second; length $5\frac{1}{2}$ - 9 inches; those species under 6 inches in length have white wing bars; flycatchers; 11 species.
-1. Tyrannidae.

3a. Back of tarsus narrow or sharp, not rounded; first primary not evident, the outermost (second) about the length of the ~~second~~ ^{next}; length 5- $5\frac{1}{2}$ inches; wing bars yellow or orange or none; 4 species of flycatching warblers in the family Compsothlypidae (No. 17), which see, below.

1a. Bill not flattened, not wider than high at the base.

4. Bill short, stout, cone-shaped, the lower mandible turned abruptly downward near the base ~~(tips of mandibles crossed in two species)~~; ^{length 5-9 inches}
(this not visible unless mouth open)

5. First primary rudimentary, the next four equal; length $6\frac{1}{2}$ inches; the common English sparrow (see picture); 1 species.
-18. Ploceidae.

5a. First primary not evident (hidden on outer side of wing), the outermost three (i.e., 2nd-4th) about equal.

6. ^{Base of} Upper mandible ~~extending backward~~ ^{wedge-shaped, conspicuously}, dividing the feathers of the forehead; bird rather uniformly colored, the male greenish-black with brown head, the female grayish; length $7\frac{3}{4}$ inches; the cowbird in the family Icteridae (No. 19), which see, below.

6a. ^{Base of} Upper mandible not conspicuously dividing the feathers of the forehead; outermost (second) primary never more than $\frac{1}{2}$ inch shorter than the longest; birds generally varicolored, lighter below; ^{length 5-9 inches;} sparrows, finches, grosbeaks, buntings, etc.; 43 species.
-21. Fringillidae.

4a. Bill more slender, not short stout and cone-shaped; ^{length 7-25 inches.}

7. Tarsus smooth in front (i.e., booted). *(Cf. also certain Compsothlypidae).*

8. Length $6\frac{1}{2}$ -10 inches; upper parts brown, dark slate, or blue; upper mandible with a minute notch and tooth at tip; outermost (first) primary less than 1 inch long, the third the longest; tail square; young spotted; thrushes, robin, bluebird; 7 species.
-10. Turdidae.

8a. Length 4- $4\frac{1}{2}$ inches; upper parts greenish; mandible not notched or toothed; outermost primary about $\frac{1}{3}$ as long as the longest; kinglets (and gnatcatcher, which is keyed out as tarsus scaly); 3 species.
-11. Sylviidae.

7a. Tarsus with horizontal scales (scutellate) in front.

9.
Orders and Families

9. Length ~~7 inches or over~~ $6\frac{1}{2}$ inches.

10. Hind toe nail longer than toe; back of tarsus rounded like the front; outermost three primaries about equal; length $7\frac{3}{4}$ inches; summer adults with two black horn-like tufts; larks; 1 species. $6\frac{1}{2}$ 4

-2. Alaudidae.

10a. Hind toe nail shorter than toe; back of tarsus narrow or sharp; without horn-like tufts.

11. Nostrils completely concealed by dense tufts of stiff feathers; length $11\frac{1}{2}$ -25 inches; outermost primary half as long as the longest; wings black, blue, or greenish-blue; crow, raven, jays, magpie; 5 species.

-4. Corvidae.

11a. Nostrils not completely concealed, evident or with a sparse covering of bristles. This group includes only four species (grackle, meadowlark, thrasher, and mockingbird) over 10 inches long.

12. Bill stout, conspicuously hooked and toothed at the tip, with prominent bristles at the base; first primary short; tail rounded; plumage black, white and gray, with a black band through the eye; length 9-10 inches; shrikes; 2 species.

-14. Laniidae.

12a. Bill not conspicuously hooked and toothed at the tip.

13. Upper mandible with a distinct tooth in the middle; summer males red or red and black, females yellowish-green; length $7\frac{1}{2}$ inches; first primary not evident; tanagers; 2 species.

-20. Thraupidae.

13a. Upper mandible without a tooth in the middle.

14. Head crested; tail tipped with yellow; plumage brownish, with a black line through the eyes; upper mandible with a minute notch and tooth at tip; length 7-8 inches; first primary rudimentary, the second longest; waxwings; 2 species.

-13. Bombycillidae.

14a. Head not crested; tail not yellow-tipped; no notch or tooth at tip of mandible (except in catbird).

15. ~~Bill extending up onto the forehead, separating the feathers for a short distance.~~ *Base of upper mandible wedge-shaped, conspicuously dividing the feathers of the forehead.*

16. First primary not evident, the outermost three of about equal length; tail variable; the lower mandible with a downward angle at base; length 7-12 inches; plumage with much black (except the meadowlark, and female orioles and bobolink); blackbirds, grackles, orioles, meadowlark, bobolink, (and cowbird); 11 species.

-19. Icteridae.

16a. First primary less than $\frac{1}{2}$ inch long, the second longest; tail short, nearly square; wings obviously pointed; bill long, flattened at the tip; length $8\frac{1}{2}$ inches; plumage black with metallic reflections and buff (or white) spots; starling; 1 species.

-15. Sturnidae.

Base of upper mandible not conspicuously dividing the feathers of
15a. ~~Bill not extending up onto the forehead.~~

Orders and Families

17. Length $7\frac{1}{2}$ inches; tail slightly forked; outermost three primaries of about equal length (the first not evident); upper parts olive-green, yellow below; the yellow-breasted chat in family Compsothlypidae (No. 17), which see, below.

17a. Length $9-11\frac{1}{2}$ inches; tail rounded, the outer feathers at least $\frac{1}{2}$ inch shorter than the middle ones; ~~with~~ well-developed bristles at base of bill; outermost (first) primary half as long as longest; upper parts slate, gray and white, or bright brown; catbird, mockingbird, and thrasher; 3 species.

-9. Mimidae.

9a. Length $6\frac{1}{2}$ inches or less.

18. Tail long, with sharp-pointed feathers; bill long, slender, curved down, sharp; plumage brown, striped; length $5\frac{1}{2}$ inches; first primary $\frac{1}{3}$ as long as the second; creeper; 1 species.

-7. Certhiidae.

18a. Tail feathers not sharp-pointed.

19. Bill with an inconspicuous notch and a slight hook at the tip; first primary rudimentary, in some species not evident; upper parts greenish, plumage without streaks or spots; bristles at base of bill barely evident; vireos; 7 species.

length 5-6 1/4 -16. Vireonidae.

19a. Bill not notched or hooked at tip.

20. Outermost three primaries of about equal length (the first not evident).

21. Hind toe nail as long as the toe; length $6-6\frac{1}{2}$ inches; plumage brownish, outer tail feathers white; nostrils without bristles; pipits; 2 species.

-12. Motacillidae.

21a. Hind toe nail shorter than toe; length $4\frac{1}{2}-6\frac{1}{4}$ inches; bill slender, pointed; under parts frequently yellow; outer tail feathers often with white areas; warblers; 36 species.

-17. Compsothlypidae.

20a. Outermost (first) primary $\frac{1}{3}-\frac{1}{2}$ as long as the longest.

22. Brownish above, wings and tail finely barred with black; first primary about $\frac{1}{2}$ as long as longest; tail usually short, rounded, the middle feathers longest; no bristles at base of bill; length $4-5\frac{3}{4}$ inches; wrens; 7 species.

-8. Troglodytidae.

22a. Bluish-gray above; first primary $\frac{1}{3}$ (or less) as long as the longest.

23. Bill long ($\frac{1}{2}$ -1 inch), stout, awl-shaped, with end of lower mandible slanting up making bill appear upturned; tail short, square, the outer feathers mostly white; length $4\frac{1}{2}-6$ inches; nuthatches; 3 species.

-6. Sittidae.

23a. Bill short (less than $\frac{1}{2}$ inch), slender, not upturned nor awl-shaped; plumage without streaks, spots, or bars.

24. Bill conical; plumage soft, fluffy; tail slightly forked, uniformly colored; length $4\frac{1}{2}-6$ inches; chickadees, titmouse; 3 species.

-5. Paridae.

24a. Bill not conical; plumage not noticeably soft and fluffy; tail rounded, the outer feathers white; length $4\frac{1}{2}$ inches; blue-gray gnatcatcher in the family Sylviidae (No. 11), which see, above.