

GENERAL NOTES

A new drongo from the Moluccas.—During a revision of the family Dicruridae, now in the process of preparation, two specimens of *Dicrurus hottentottus* from Morotai Island in the Rothschild Collection, American Museum of Natural History, were examined. These two specimens were identified as *Dicrurus atrocaeruleus* Gray. A comparison with typical *atrocaeruleus* from Halmahera showed that the Morotai birds belong to an undescribed race which I propose to call

***Dicrurus hottentottus morotensis*, new subspecies**

TYPE: A.M.N.H. No. 672587; Rothschild Coll.; non-sexed adult; Morty [Morotai] Island; no date; Dumas Coll.

DIAGNOSIS: Similar to neighboring *atrocaeruleus* from Halmahera but considerably smaller in all measurements. Similar to *carbonarius* of New Guinea but with a shorter, less deep, and much more delicately shaped bill.

MEASUREMENTS: Length of the bill taken from the anterior border of the nostril, 19.5, 20 (19.75) mm.; wing, 148, 149 (148.5); outer tail feather, 134; central tail feather, 115, 115; depth of the fork, 19.

Corresponding measurements of 16 adult specimens of *atrocaeruleus*: bill, ♂ 22–25.5 (23.44), ♀ 22–24 (23); wing, ♂ 168–181.5 (171.93), ♀ 162.5–165 (163.5); outer tail feather, ♂ 150–165 (155.57), ♀ 142–153 (147); central tail feather, ♂ 132–143.5 (139.27), ♀ 131–139 (133.66); depth of the fork averages, ♂ 16.3; ♀ 13.34.

Length of the bill in *carbonarius*, 262 specimens: ♂ 19–24.5 (21.88), ♀ 18.5–24 (21.30).

Depth of the bill at nostril: *morotensis*, 10, 10; *carbonarius*, 6 ♂: Numfor, 13; Waigeu, 12.5, 13; Bernhard Camp, 12.7, 12.8, 13.2 (average of 6 ♂ 12.86); *atrocaeruleus*, 6 ♂: Halmahera, 12, 12, 12.5, 13, 13, 13.5 (12.66).

RANGE: Morotai Island.

DISCUSSION: Although only two specimens have been examined, they differ so strikingly from a large series of *atrocaeruleus* and *carbonarius* that the naming of this race seems necessary. Furthermore, the new race indicates a trend toward reduction in size and, with the exception of the length and furcation of the tail, resembles the otherwise isolated Philippine race, *striatus*, and is thus of considerable phylogenetic and zoogeographic interest. A more detailed discussion of this form will be presented at a later date in the revision of the family.

I take great pleasure in expressing to Dr. James P. Chapin and Dr. Ernst Mayr of the American Museum of Natural History my gratitude for their inspiring guidance and the many suggestions with which they are helping me in the course of this work.—A. J. C. VAURIE, *American Museum of Natural History, New York.*

Age in relation to migration in the Blue Jay.—Recently, Dexter (Bird-banding, 16: 64–65, 1945) has reported some interesting banding returns of the Blue Jay (*Cyanocitta cristata*). He cites a series of other reports published earlier in the same journal, including a paper by Gill (Bird-banding, 12: 109–112, 1941), in which an attempt was made to detect some explanation of the partial migration characteristic of that species. Gill concluded (p. 112): "It is probable that a migratory movement does occur among this species [it seems to me that any doubt on this point was adequately dispelled before 1941], particularly among the younger birds, and that with advancing age, Blue Jays become more a resident

of their nesting area and less prone to desert it due to weather conditions, except in the extreme northern part of their range." Although the Blue Jay is known to migrate from and to northern localities, the occurrence of movements other than autumn wandering among jays of central and southern states has yet to be demonstrated. In central Indiana, Test and Test (Proc. Ind. Acad. Sci., 48: 230, 1939) found "no positive evidence of any migration and some evidence that there is little or none."

The chief difficulty with the available data on the movements of the Blue Jay has been the lack of any information on the age of individuals (Gill, *op. cit.*: 109). If first-year birds, for instance, could be distinguished from older birds, and if banders of Blue Jays could record the age of trapped individuals as juvenal, first-year, or adult, a real grasp of the problem would probably be possible. Actually, among corvids, first-year birds can, with practice, be distinguished easily from adults. Several years ago, Emlen (Condor, 38: 99-102, 1936) described in detail differences between first-year and adult specimens of *Corvus*, but to my knowledge his results have not been used in study of the Blue Jay.

Characters used in distinguishing first-year from adult individuals are differences in the flight feathers and wing coverts of the two groups. During the postjuvinal molt of corvids, the juvenal rectrices and remiges are retained as are the greater primary coverts, alular feathers, and a variable number of the greater secondary coverts. There are exceptions; in *Cyanocitta cristata*, for instance, some of the proximal secondaries may be replaced during the postjuvinal molt, or all of the juvenal greater secondary coverts may be retained, or the rectrices may be replaced. Details of the nature of the differences between corresponding feather series will not be given here as they are available for *Corvus* (Emlen, *loc. cit.*) and *Aphelocoma* (Pitelka, Condor, 47: 254-256, 1945). The most satisfactory of the several usable differences is that of the color of the wing coverts. In *Cyanocitta cristata*, the juvenal greater secondary coverts are dull blue, unbarred, and tipped with white; the corresponding adult feathers are bright blue, barred with black, and tipped with more white. The juvenal greater primary coverts and alular feathers are dull blue, grayish terminally; the corresponding adult feathers are darker blue, usually with some suggestion of barring, especially on the alular feathers. First-year birds can be recognized most easily when the replacement of secondary coverts has been incomplete, as then there is an obvious contrast between the retained juvenal feathers, which are distal, and the proximal replaced ones.

Of 97 specimens of *Cyanocitta cristata*, excluding juvenal, non-sexed, or undated specimens, in the collections of the Museum of Vertebrate Zoology and the California Academy of Sciences, 48 are adults, 46 are first-year birds, and three are in early stages of the first complete molt—that is, they are slightly over a year old. Among the 46 first-year specimens, 29 retained no juvenal greater secondary coverts, five retained one, six retained three, four retained three, one retained four, and one female retained all. Twenty-nine of these were collected north of the Mason-Dixon Line, and only four of these 29 were collected during the months of December, January, and February. The localities represented by the four winter-taken specimens are Beaver Dam, Wisconsin, Holley, New York, and Princeton, New Jersey; none of these is north of latitude 44° N. Gill's theory that it is the younger birds which undertake most of the observed migration may apply chiefly to northernmost populations of *Cyanocitta cristata*; it may apply only in part to populations of northeastern states and not at all to populations from approximately 40° N. latitude southward. This statement is merely a suggestion based

on meager evidence. In *Aphelocoma*, the available evidence indicates that first-year birds may wander or disperse over great distances, whereas adults are typically sedentary (Pitelka, MS.).

Obviously, the problem of migration in Blue Jays, and in other species in which plumage differences of the type described above occur, can be approached adequately only if bird banders are aware of the type of information needed and have a knowledge of the morphological bases for distinguishing age groups. I would urge interested students and banders not to attempt aging individuals without first examining a museum series and becoming familiar with seasonal variation due to wear as well as individual variation.—FRANK A. PITEKKA, *Museum of Vertebrate Zoology, Berkeley, California.*

Rumbling noise made by Chimney Swifts in chimney.—In the Auk, 62: 361–370, 1945, there is an interesting article by Horace Groskin, "Chimney Swifts roosting at Ardmore, Pennsylvania." Reference is made to very loud noises which some observers report to have heard as the birds departed from the chimney or hollow tree at dawn. This noise has been likened to the rumbling of distant thunder.

It may be of interest to report my own experiences with the swifts on this point. My childhood up to the age of 19 years was spent on an old New England farm at West Oxford, Massachusetts. This farmhouse was one of the oldest in town and at that time was about 125 years old. An enormous stone chimney occupied the middle of the house, and the portion above the roof made of brick, was about 3–3½ feet square within. The stone chimney itself was constructed from the ground floor of the cellar, and was so spacious as to occupy a large portion of the cellar area, as well as the middle of the ground story above. This enormous stone chimney appears to have been built originally to accommodate a spacious Dutch oven as well as huge fireplaces for all the first-story rooms. Central cross walls of brick divided this chimney into four equal flues, some of which appeared to lead to rooms the fireplaces of which were no longer used.

This large chimney was always frequented by the swifts with their nests each season, and they roosted within it in late summer. This large chimney passed through an open, unfinished attic near a room at one end of the house which was my sleeping room. I could plainly hear the movements of the swifts within the chimney at all times, and I felt a sense of companionship with these fine birds always so close to my bedroom. On rare occasions I have heard them chipper at night as they roosted, but frequently I have heard the rumbling of these birds, and was always puzzled as to how it was made even on nights so dark that it was certain the birds were neither entering nor leaving the chimney.

I am, for this reason, inclined to believe that something may occasionally disturb the birds as they cling to the chimney walls in close arrangement, and that this causes a simultaneous flapping of the wings of many birds so that a reverberation within the chimney is produced. I have frequently heard the rumbling when the birds were all within the chimney, but have never noted any such noise while the birds were merely settling into the chimney at dusk or leaving it at dawn, although conceivably a great mass of frightened, surging birds suddenly leaving a chimney might set up a rumbling sound. This rumbling, I am certain, can be made without this exodus, and sometimes may be the result of a vigorous wing stretching or flapping performance which is taken up simultaneously by a group of birds, perhaps finally to extend to larger numbers in the chimney.—H. A. ALLARD, *Beltsville, Maryland.*