

the grounds that the 19th century colonization was by escapes from a British ship. Its compilers evidently overlooked F. M. Chapman's statement (on p. 513) in his last revision (1932) of his famous *Handbook of birds of eastern North America*, the bible, in youth, of my generation of ornithologists: "The Bermuda bird has been described as *Carduelis carduelis bermudiana* Kennedy, but Dr. Percy R. Lowe writes me that specimens from that island agree with the race from Madeira, the Azores, and Canary Islands, *Carduelis carduelis parva* Tchusi [Tschusi]." I recently examined three fresh adult Bermuda specimens in the American Museum of Natural History and, with the expert help of Charles Vaurie, compared them with the excellent series of European material there. We agree that they are unequivocally, to use Hellmayr's adjective, of the Madeiran race, *C. c. parva*. This is not at all surprising, as the most avid cage-bird fanciers in Bermuda are found in the large colony of resident Azorians, who very probably imported from their home islands the stock that now dominates the wild Bermuda European Goldfinch populations.—O. L. AUSTIN, JR., *Florida State Museum, Gainesville, Florida*.

**Mississippi Kite in Argentina; with comments on migration and plumages in the genus *Ictinia*.**—The winter range of the Mississippi Kite (*Ictinia mississippiensis*) is "not certainly known" (A. O. U. *Check-list of North American birds*, 5th edit., p. 101, 1957). Blake (*Auk*, 66: 82, 1949) called attention to two examples from southern South America, taken in different years in Paraguay (Colonia Nueva Italia, Dept. Villeta) on 26 February 1942 and 14 December 1944. Supporting the idea that South America may be the main wintering ground is an unrecorded female in the American Museum of Natural History (*ex* Rothschild coll.) taken at Mocoví, Chaco, Argentina, on 6 January 1904. This adult example, in every way typical of *mississippiensis*, was recorded as a Plumbeous Kite, *I. plumbea* (Hartert and Venturi, *Novit. Zool.*, 16: 240, 1909), presumably because *mississippiensis* was not then known to reach South America and two other specimens of *Ictinia* from the same lot (one taken at the same locality four days later) are indubitably *plumbea*. Statements in the literature that the Mississippi Kite winters in Florida, Texas, México, and Guatemala appear to be based on occasional stragglers and transients. I have not seen any published winter date from México or Guatemala. For Florida there is one published January sight report in the twentieth century and an undetailed nineteenth century report of January and February occurrence (Howell, *Florida bird life*, p. 167, 1932; Sprunt, *Florida bird life*, p. 97, 1954). Recent writers on Texas birds do not list this kite as a wintering species (Wolfe, *Check-list of the birds of Texas*, 1956; Peterson, *A field guide to the birds of Texas*, 1960). As it is quite likely that on migration through tropical America *I. mississippiensis* may be mistaken for its more abundant Neotropical relative, *I. plumbea*, which breeds from México to northern Argentina, but is also migratory, some comment on the migration and distinguishing features of these two forms may be helpful. If *I. mississippiensis* winters in South America it will be present when certain populations of *plumbea* are breeding, others are migrating, and still others are wintering.

*Migration in the tropics of the Mississippi and Plumbeous Kites.*—*I. mississippiensis* leaves the United States between the end of August and late September, a few remaining into early October; it returns chiefly from April to the third week of May, some arriving as early as the beginning of March (Bent, *U. S. Natl. Mus., Bull.* 167: 63–64, 69, 1937; Sutton, *Condor*, 41: 41–47, 1939; Allan and Sime, *Condor*, 45: 111, 1943; Peterson, *op. cit.*). Loose flocks of migrants must regularly pass through México, but I have found few definite dates in the literature. Migrants have been

reported in Veracruz in April and on 4 May, and in San Luis Potosí on 18 and 20 April (Loetscher, *Auk*, 72: 24, 1955; Sutton and Burleigh, *Wilson Bull.*, 52: 222, 1940). Alvarez del Toro says it migrates through Chiapas, but gives no dates (*Rev. Soc. Mex. Hist. Nat.*, 19: 78, 1958), and there are also records for Tamaulipas and Oaxaca (Friedmann *et al.*, *Pac. Coast Avif.*, 29: 50, 1950). I could find no published date for the often-cited Guatemala specimen from Cobán. From Costa Rica P. Slud advises (*in litt.*) that there is an immature female in the Museo Nacional de Costa Rica, taken 18 October 1893 near San José, and that he feels sure he saw several migrants on 24 September 1961. From there a vast gap exists to the localities of the two known winter-collected specimens from Paraguay and the third from the neighboring Argentine Chaco, already mentioned. In Paraguay, according to Willim, the collector there, this kite arrives in small numbers, almost every year, between October and February, usually after stormy weather (Blake, *op. cit.*).

Populations of *Ictinia plumbea* migrate south from the breeding range in México and Central America during the months of the northern hemisphere autumn, and north from their breeding range in southern South America during the southern hemisphere autumn (at the opposite time of the year). Where the northern and southern populations "winter," and whether the birds breeding in more equatorial regions are migratory are unresolved problems. Migration in Middle America (where egg-laying occurs from March into May) has been reported (Griscom, *Bull. Amer. Mus. Nat. Hist.*, 64: 163, 1932; Dickey and van Rossem, *Field Mus. Nat. Hist. Zool. Ser.*, 23: 106-108, 1938; Wetmore, *Smiths. Misc. Colls.*, 106: 25-26, 1946). In Panamá I have repeatedly noted migrating flocks of up to 40 Plumbeous Kites between 13 August and 6 September, often with migrating groups of Swallow-tailed Kites (*Elanoides forficatus*). Other observers have seen migrating flocks of *Ictinia* in Panamá from early February through March. Wetmore (*op. cit.*) states that on San José Island in the Gulf of Panamá, Plumbeous Kites did not arrive at their breeding grounds until the second week of March in 1944, and that they were reported by others as fairly common until the latter part of September, with one sight report as late as 12 November. Although recent works on Colombia and Venezuela do not mention migration by *I. plumbea*, I think it is likely that this species may be migratory, at least in the northern parts of those countries. All specimens from these areas in the American Museum of Natural History were taken in the breeding season (which corresponds chronologically with the northern hemisphere spring and summer). These northern areas, like the breeding habitat in Middle America, have a regular annual alternation of long wet and dry seasons, highly important to a species that feeds mainly on large flying insects. From Cali, south-central Colombia, with a more uniform climate, there is a specimen dated 31 January, although that bird could be a returning migrant. F. D. Smith, who spent more than three years in northeastern Venezuela, reports that all his observations of this breeding species were made March through July, and again in September (Friedmann and Smith, *Proc. U. S. Natl. Mus.*, 100: 444). In those areas nearer the Equator (particularly the Amazonian region) where there is no marked seasonal change or long dry season, *I. plumbea* seems to be recorded in almost every month of the year. It is possible, of course, that some of these specimens may represent migrants from north or south. The breeding season in tropical Amazonia may be more extended than at higher latitudes where seasonal changes are more striking. Thus in Amazonian Ecuador a nestling a few days old was found on 25 August and fledged on 16 September (Skutch, *Condor*, 49: 25-31, 1947), while farther south in Amazonian northeastern Bolivia (lower Río Beni) a fledgling taken in May (in the

American Museum of Natural History) has remiges and rectrices only partly grown. Near the southern limits of the breeding range, in northeastern Argentina (Misiones) D. Amadon tells me that in the second week of September recently arrived Plumbeous Kites were beginning to nest, while migrating flocks were still moving southward. All American Museum specimens of *plumbea* from Argentina, Paraguay, and southern Brazil were taken during the southern hemisphere spring and summer (September to February), with the exception of one, labelled "August," from Chapada, Matto Grosso, Brazil (a locality where one resident collector took 19 other examples from September to January, and a nest with parents and egg in early October) (Allen, *Bull. Amer. Mus. Nat. Hist.*, 5: 48, 157, 1893). A juvencal taken in Paraguay on 5 February is not quite full grown.

Distinguishing migrants from local birds presents difficulties, for *I. plumbea* has not been divided into recognizable subspecies over its vast Neotropical range. Possibly there may be geographical differences in iris color, but the labelled material examined is insufficient for this conclusion. The usual iris color in adults and "post-juvencal" birds, as indicated by labels, is red throughout tropical Middle and South America. However three adult examples from São Paulo, Brazil (both sexes) are labelled blue black, dark blue, and purple by two different collectors. One adult example from Venezuela (Guanoco) is labelled yellow, another (San Antonio, Bermudez) postjuvencal bird "rose red." Skutch (*op. cit.*) mentions a breeding pair from Amazonian Ecuador with yellow irides, but six specimens from that country, taken between October and April (adult and postjuvencal dress) are labelled as having red, red-orange, carmine red, or red-brown irides. The difference in time of breeding between populations from the extreme northern and southern parts of the range suggests that stage of molt may provide a clue to recognition of some migrant birds (*cf.* Eisenmann, *Auk*, 76: 530, 1959), but I have not checked this possibility.

It may seem surprising that *I. plumbea* should migrate out of tropical breeding areas which have no significant seasonal change in temperature. But the regular seasonal change in rainfall in areas with a long, severe dry season has an effect on plant and insect life similar to that of the temperature cycle. In addition to *I. plumbea*, several insectivorous birds living in lighter deciduous woodland or more open environments are thought to migrate, prior to the desiccating dry season, out of some breeding regions of Middle America (e.g., *Chordeiles minor*, *C. acutipennis*, *Muscivora tyrannus*, *Myiodynastes maculatus*, *M. luteiventris*, *Legatus leucophaeus*, *Progne chalybea*, *Vireo flavoviridis*). There are probably many more. At lower latitudes recognizing migration is made difficult by the fact that both migrants and local birds may belong to the same subspecies, and the period of absence of the local population may be rather short. Thus in Costa Rica and Panamá, where the dry season is less prolonged, some species known to be migratory begin to reappear in early February and even late January (Skutch, *Pac. Coast Avif.*, 34: 12, 374-376, 451, 1960).

*Distinguishing I. mississippiensis and I. plumbea.*—The main similarities and differences of these allied forms have been well described (Sutton, *Wilson Bull.*, 56: 3-8, 1944; Wetmore, *op. cit.*; Friedmann, *U. S. Natl. Mus. Bull.*, 50, pt. 11: 120-126, 1950). Nevertheless it may be useful to note certain characters that may serve to separate or confuse them in the field and to mention an immature plumage stage of *I. plumbea* which seems not to have been described. An *Ictinia* with unbanded black underside to the tail and with secondaries forming a distinct pale gray or slaty band on the upper wing surface, in contrast with black primaries and blackish slate upper wing-coverts, is an adult *I. mississippiensis*; one with a broad rufous patch on the

spread wing (in a few individuals visible as broad primary edging on closed wing) is *I. plumbea*. The solid black upper surface of the tail is present in both species of all ages; the banded lower surface of the tail and blackish upper surface of the wing, characteristic of all stages of *plumbea*, is also present in immature and juvenal stages of *mississippiensis*. Lack of conspicuous rufous in the spread wing is characteristic not only of all stages of *mississippiensis* but also occurs in some (not all) juvenal and immature individuals of *plumbea*. In juvenal plumage both species have banded tails, blackish secondaries and primaries, and streaked ventral surfaces, but the streaking is brown (somewhat rufescent) in *mississippiensis* and slaty in *plumbea*. Judging by the rarity of juvenal plumaged specimens, this body plumage is apparently molted in the first winter, and replaced by a feather coat essentially like that of adults, but the juvenal remiges and rectrices are retained. *I. mississippiensis* is known to breed in this immature dress. In both species it can be distinguished from the adult (definitive) plumage of *I. plumbea* (which it resembles) by white barring on the under wing coverts and white markings on the inner webs of the primaries (often also on the lower abdomen and thighs). In this plumage separating the two species would be difficult in the field, except for those *I. plumbea* showing rufous on the wings; in skins *I. mississippiensis* has much more white on the under side of the wings, is paler dorsally, generally shows some semi-concealed basal patches of white on the scapulars, and has the wing tips not extending beyond the tip of the tail (in *plumbea* they almost always extend well beyond). One character apparently separating the two species in all plumages (even the juvenal) is the color of the tarsi and toes. In life *mississippiensis* has the exposed front surface of the lower tarsus and the upper surface of the toes mainly dull grayish brown or dusky; in *plumbea* the tarsi and toes are wholly yellow to orange red (specimen labels; Friedmann, *op. cit.*; Sutton, *Condor*, 41: 45, 1939; Skutch, *op. cit.*: 25). In dry skins the tarsi and toes are dusky in *mississippiensis*, dull yellow in *plumbea*.

Of interest is the fact that in all plumages the tropical *plumbea* has considerably longer wings in relation to tail than the northern, probably more migratory, *mississippiensis*. Most skins of the latter (unlike the former) do not have the wings projecting beyond the tail; in life the wings (at least of perched adults) do so extend (see photographs in Sutton, *Condor*, 41: 43, 45, 1939). Despite its long pointed wings, *plumbea*, when on migration, spiraling upwards on thermal air currents, spreads its primaries so that the wing tips look oval, not pointed. Probably the same is true of migrating *mississippiensis*.

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**Additional eastern records of Ross' Goose (*Chen rossii*).**—The first records of Ross' Goose in the eastern Arctic were those of Hearne (S. Hearne. *A journey from Prince of Wales' Fort in Hudson's Bay to the northern ocean in the years 1769, 1770, 1771, 1772 and 1773*. 1795. Cited from new edition, J. B. Tyrrell [ed.], The Champlain Society, 1911.) at Churchill, Manitoba, in 1771. No additional reports were published until 1953, when conclusive evidence was obtained of the recent presence of Ross' Goose in the Hudson Bay area (Cooch, *Condor*, 56: 307, 1954; 57: 191, 1955). In 1956, Barry and Eisenhart (*Auk*, 75: 89–90, 1958) confirmed that nesting occurred at Boas River, Southampton Island, Northwest Territories. Additional records have since become available, indicating that the species is even more widespread in the Hudson Bay region than was formerly thought.