

## GENERAL NOTES

**Two sympatric canaries, *Serinus koliensis* and *S. citrinelloides*, in western Kenya.**—In his review of the genus *Serinus* in Africa, Rand (1968) groups *koliensis*, *citrinelloides*, *frontalis*, *capistratus*, and *scotops* together (his group II). The first four of these species occur in eastern Africa in a confusing way, and he concludes his discussion of the group: "what is found out about the manner in which *citrinelloides* meets *frontalis* and *koliensis* in western Kenya and eastern Uganda will probably influence our species concepts here." As a resident of Sawagongo (near Yala) in Central Nyanza, western Kenya for the past 2 years I have been able to study two of these species, *koliensis* and *citrinelloides*, in some detail. *S. koliensis* occurs from the eastern Congo to western Kenya, and the four races of *citrinelloides* (including that recently described by Traylor, 1970) occur from Ethiopia south through Kenya and Tanzania to Malawi, adjoining Zambia and northern Mozambique. The only area where both *koliensis* and *citrinelloides* occur is extreme western Kenya; *frontalis* is not known from Kenya.

When first described in 1952, *koliensis* was considered a race of *S. capistratus*, but Chapin (1954) and most more recent authors consider it a full species. It is comparatively rare in collections and virtually nothing is known of its biology. In their handbook, Mackworth-Praed and Grant (1955) were able to say only that it had been recorded breeding in a swamp at Kisumu, and that dates of breeding (Uganda and Kenya) were July and August. The nest, eggs, food, call, and immature plumage are apparently still undescribed.

Traylor (1970) recently described *S. citrinelloides brittoni* from western Kenya. In coloration it is remarkably similar to *koliensis*, and it is the lack of information on the latter that caused this west Kenya population of *citrinelloides* to remain undescribed for so long, for it was confused with *koliensis*. Traylor was able to locate and measure 35 specimens of this new taxon. In the same contribution, Traylor discusses the plumage, intrarelations, and distribution of *koliensis*, *citrinelloides*, *frontalis*, and *capistratus* very fully, and the aim of this note is to complement his work with my personal observations on *koliensis* and *citrinelloides* in western Kenya.

Most of my records of *S. koliensis* are from the edge of the vast area of papyrus known as Yala Swamp or from the papyrus-fringed shores of Lake Kanyaboli and Lake Victoria, but as I have recorded it in both areas of papyrus that I have visited at higher elevations (ca. 1,300 m against ca. 1,150 m) it is probably widespread and not uncommon in papyrus throughout Central Nyanza (see Figure 1). Though feeding a great deal out of papyrus, it nests at the edge of papyrus and retreats there for roosting, and in view of this unusual habitat preference I suggest the adoption of the English name Papyrus Canary. No English name has been proposed before.

In describing the adult Mackworth-Praed and Grant (1955) say that the sexes are practically alike, but to the practised eye they have enough sexual dimorphism so that live birds may be readily sexed both in the hand and in the field. The male is brighter, more yellow throughout with far less streaking below, and whereas the male's mask is dusky, the female's gives a hoary effect as feathers are gray-brown edged with pale gray-buff. The female's mask extends onto the forehead. The first plumage is undescribed, and I have been able to collect only one immature, a female, now in the collection of the National Museum, Nairobi. It is quite different from either adult, although closer to the female. The throat to breast is rich buff with broad dark brown streaks; belly yellow with some narrow dusky

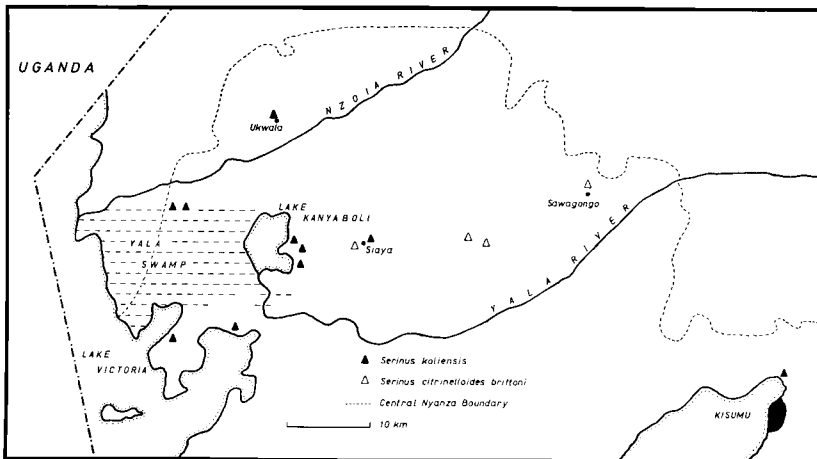


Figure 1. The study area, Central Nyanza, Kenya.

streaks; crown, lores, ear coverts, nape, and mantle rich olive-brown with broad dark brown streaks from crown to mantle; tertial and wing covert edgings very pale buff-white, entirely lacking the greenish wash of the adult female; and rump, tail, and wings (except edgings) like the adult female.

Most of my observations concern breeding, for it is far more conspicuous than at other times. When not breeding it is seldom seen except when returning to papyrus in the evening. Though usually seen singly or in pairs, it is sometimes gregarious and I have noted groups of up to 15 moving about low in papyrus, presumably feeding. It favors places where papyrus has been cleared for small-scale vegetable growing, and I once watched a male eating the seeds of *Tagetes minuta* (Compositae) in one of these gardens. It most often feeds farther afield, where I have seen it in banana plants and maize, and eating *Sorghum vulgare*.

Evidence from eggs, gonad activity, behavior, and molt indicates that egg-laying is restricted to the period March-July; and apart from occasional scolding notes when handled, the bird apparently is silent outside this period. I have not taped its very variable, infrequently uttered song, and I have difficulty describing songs phonetically, but my field notes give "a variety of soft wheezing and slurring notes, including 'see-see-see-surr' with emphasis on the last syllable."

Single observations on the collecting of nesting material and the building of the nest suggest that the male does not assist the female, as one male sang from a nearby papyrus stem while a female avidly collected nesting material, and the male of another pair did not assist the female in any way during building (ten visits to the nest), although the pair remained together throughout. The nest is a loosely woven, unlined cup, 4-5 cm in diameter and 3-4 cm deep, placed in the center of a papyrus head and made almost entirely of strands from papyrus heads. The three nests found were on 26 March (building), 4 April (two eggs), and 21 June (building). The June nest had a single egg on 26 June, but it was empty on 2 July. The papyrus stem supporting the March nest was broken during a storm, and the April clutch was collected for the British Museum (Natural History). All three eggs were dirty white with small beige-brown and

brick-brown blotches throughout, but far more concentrated at the broad end. Measurements (mm) are  $18 \times 12.5$ ;  $19 \times 13$ , 0.6 g;  $18.5 \times 13$ , 0.5 g.

As mentioned above, Traylor recently described *S. citrinelloides brittoni* from western Kenya. In coloration it is remarkably similar to *koliensis*, but biological data on the two forms show this to be coincidental rather than indicating any close relationship between them. In Central Nyanza *brittoni* is locally common in cultivated areas with abundant bananas near water above 1,300 m, and its choice of habitat and nest site are very similar to those of *S. frontalis* in Uganda (see Jackson, 1938). This is a local phenomenon dictated by the lack of other suitable habitat, as I have recorded it at the edge of forest at Kakamega and Mt. Elgon, and it is known from Kongelai, an uncultivated riverine locality dominated by dry acacia savanna. Food taken probably varies from one area to another, but in Central Nyanza it most often eats grass seeds and I once recorded it eating *Sorghum vulgare*. In addition to vegetable matter the crop of a female contained small blackish snails.

I have found three nests, all situated at ca. 3 m above the ground at the top of a bunch of growing bananas. The nest is an attractive, compact cup, 4–4.5 cm in diameter and 2–2.5 cm deep, lined with fine grass and plant wool. It is, therefore, typical of the genus and very similar to that of *S. c. hypostictus* described by Jackson (1938). The three clutches seen (all c/2) were laid in May, June, and July respectively, and an oviduct egg was taken on 2 April. Like *koliensis*, egg-laying in central Nyanza is largely from March to July. The eggs are off-white with very variable purplish-brown spots and smudges mainly at the broad end, and markings are reduced to tiny spots towards the narrow end. One has a large smudge occupying some 15 sq mm at the broad end. Measurements are  $17 \times 12.5$  mm (two eggs, same clutch),  $17 \times 12$  mm (from oviduct).

I have several times heard the male singing from branches 4–6 m above the ground, but I have not tried to transcribe the song phonetically, and I have been unable to tape it. It is a loud, musical, typical canary song quite unlike that of *koliensis*. A. D. Forbes-Watson (pers. comm.) considers it very like the song of *S. c. kikuyuensis*.

The similarly colored *S. koliensis* and *S. citrinelloides brittoni* differ markedly in habitat preference, situation, and construction of the nest, egg markings, and song. They are virtually allopatric (map in Traylor, 1970), but their ranges certainly overlap at ca. 1,300 m near Siaya where *koliensis* has been collected at Nyamawin and *citrinelloides* at Mulaha (see Figure 1). These two riverine localities are 3 km apart at the same altitude, and they differ only in that one stream is fringed with papyrus. Nevertheless the two forms are not known to coexist, despite possible isolating mechanisms like bill shape and song. Traylor (1970) showed that, on average, *koliensis* has a shorter wing than *citrinelloides*, and the data in Table 1 confirm that this is also the case with birds from a limited geographical area with an altitudinal range of only 300 m ( $\delta \delta$ ,  $P < 0.05$ ;  $\text{♀} \text{♀}$ ,  $P < 0.06$ ; *t*-test). But *koliensis* is a little heavier than *citrinelloides* and it has a larger egg.

As Rand (1968) placed *koliensis*, *citrinelloides*, *frontalis*, *capistratus*, and *scotops* together, it is noteworthy that the untidy unlined nest of *koliensis* is significantly different from the nests of the other four (Jackson, 1938; Van Someren, 1956; Skead, 1960; Mackworth-Praed and Grant, 1963). In fact, *koliensis* is an aberrant *Serinus* in its choice of habitat, the form of its nest, and its song, and until further data become available its affinities must remain in doubt.

TABLE 1  
WEIGHTS AND WING LENGTHS OF *SERINUS KOLIENSIS* AND *S. CITRINELLOIDES*  
*BRITTONI* FROM CENTRAL NYANZA, KENYA

		Weight (g)			Wing (mm)		
		Range	Mean	SD	Range	Mean	SD
<i>S. koliensis</i>	15 ♂ ♂	11.3-15.0	13.4	1.21	61-67	64.3	1.48
	15 ♀ ♀	11.9-16.1	13.8	1.20	60-66	63.0	1.75
<i>S. citrinelloides</i>	8 ♂ ♂	11.5-15.3	12.9	1.25	63-67	65.5	1.12
	7 ♀ ♀	11.7-14.7	13.2	0.97	63-66	64.3	1.16
	8 imm.	10.3-13.1	11.7	0.97	61-64	63.3	0.97

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**Common Gallinule breeding biology and development.**<sup>1</sup>—The breeding biology of the Common Gallinule (*Gallinula chloropus cachinnans*) in North America is little known. While studying the American Coot (*Fulica americana*) in north-western Iowa during the summers of 1963 through 1966 (Fredrickson, 1967), I had an opportunity to study Common Gallinules.

The Ruthven Area is a small remnant of glacial lakes and marshes in Clay and Palo Alto counties. Although many marshes have been drained, the Iowa Conservation Commission has purchased the best remaining wetlands and maintains water

<sup>1</sup> Journal paper No. J-6603 of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. Project No. 1504.