A New Subspecies of the Senegal Firefinch *(Lagonosticta senegala* (L.)) from West Africa

By
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(Med et dansk resumé: En ny underart af Amarant (Lagonosticta senegala *(L.)) fra Vestafrika.)*

When working up a small collection of birds from Liberia and Guinea, West Africa, I found that all the specimens, and especially the adult females, of the Senegal Firefinch *(Lagonosticta senegala)* differed considerably from other West African skins of this species in the Zoological Museum, Copenhagen (HALD-MORTENSEN 1970). As these lastmentioned skins only represented northern localities such as Dakar, Senegal (WOLFF 1950) and Bamako, and Timbuktu, Mali (PALUDAN 1936) the large series of *Lagonosticta senegala* in the British Museum was borrowed for comparison. After this it was clear that the specimens in the HEROLD OLSEN Collection could be considered a new form for which I suggest the name:

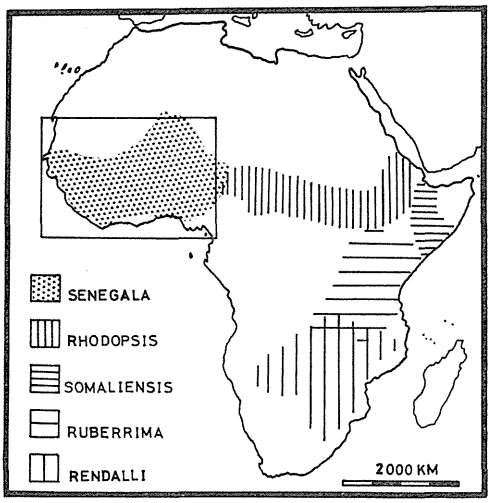


Fig. 1. Distribution of the hitherto known subspecies of *Lagonosticta senegala.* After BANNERMAN (1949) and WHITE (1963).

Fig. 1. Udbredelsen af de hidtil kendte underarter af Lagonosticta senegala.

Lagonosticta senegala guineensis
new subspecies

Type: ♀ ad., N'Zerekore, Guinea, 2nd July 1953, coll. K. HEROLD OLSEN, in the Zoological Museum, Copenhagen, collector's number 5049.

Description: Adult ♀♀ can be separated from ♀♀ of nominate *senegala* by the underparts which are tawny olive instead of buff (colours from GROSSMAN & HAMLET 1964). The difference is partly due to a richer pigmentation in the barbules of *guineensis* in which even the most distal barbs have their barbules filled with melanin, while the 2-3 most distal barbs of each feather in *senegala* are always completely lacking pigments in all barbules and several others have no pigments in their outermost parts. Also the barbs of *guineensis*

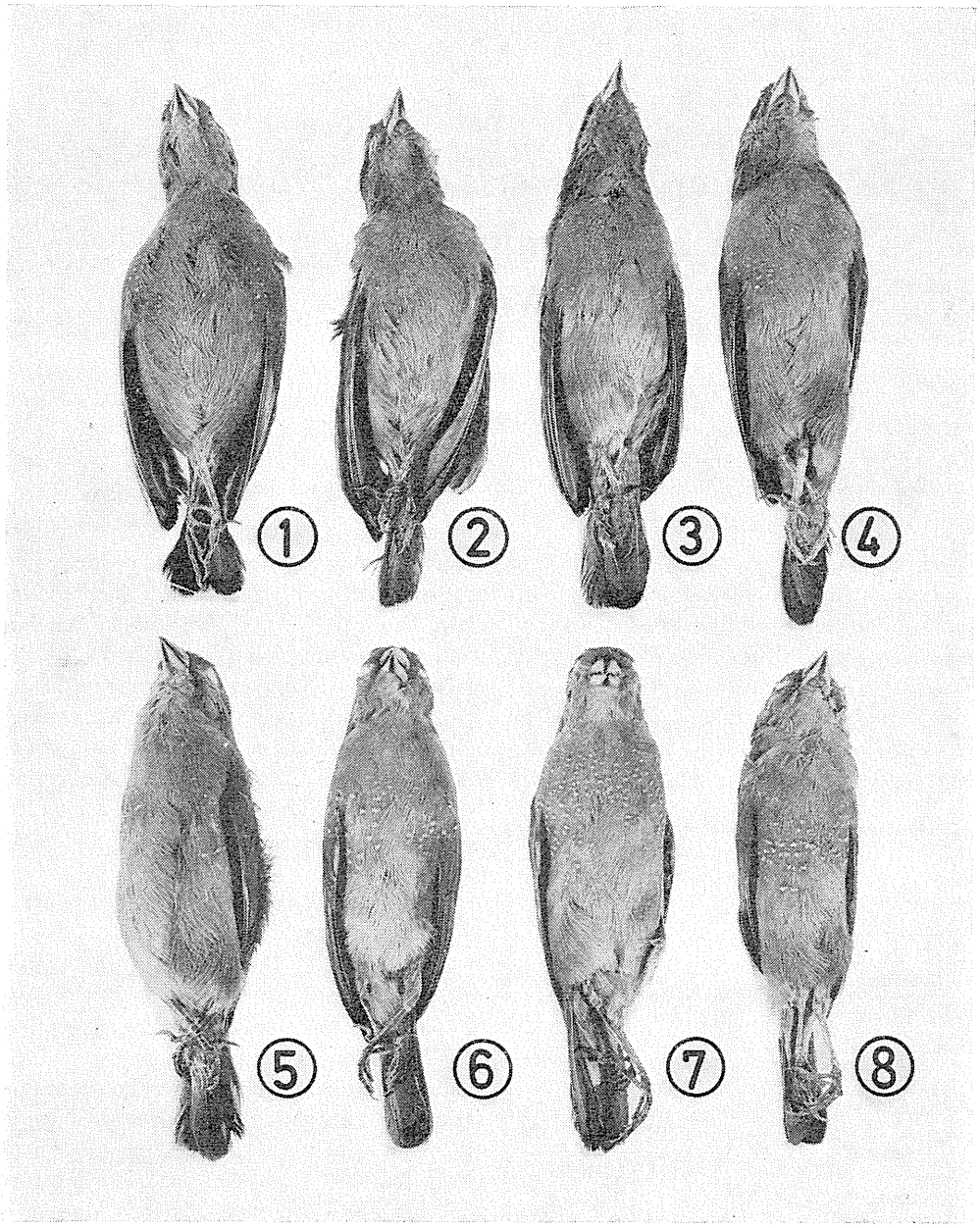


Fig. 2. This photograph of adult females gives only a faint indication of the darker colouration of *L. s. guineensis* (upper row) compared to *L. s. senegala* (lower row); whereas the difference in the number and size of spots is pronounced (see fig. 4). The localities of these specimens are shown in fig. 3, *viz:* 1. Tumbo, Sierra Leone; 2.-4. N'Zerekore, Guinea; 5. Timbuktu, Mali; 6.-7. Richard-Toll, Senegal; and 8. Gaya, Niger.

Fig. 2. Fotografiet af adulte hunner giver kun et dårligt indtryk af den mørkere farve hos L. s. guineensis *(øverste række) sammenlignet med nominatformen (nederste række). Derimod er forskellen i pletningen på de to seriers undersider fremtrædende. Fuglenes lokaliteter, som er nævnt ovenover, er vist på fig. 3.* (GEERT BROVAD *photo).*

are generally more pigmented than those of *senegala*. In *guineensis* the spots on the breast are fewer and smaller than in *senegala*. The neck and nape usually have a reddish tinge never found in females of *senegala*. The upperparts of *guineensis* are olive-drap, whereas *senegala* has a colour intermediate between pale gray-brown and gray-brown.

Adult ♂♂ differ only slightly from ♂♂ of nominate *senegala* in being a little darker red on the breast and reddish on crown, nape, and mantle, whereas males of *senegala* usually have only little or no red on the lastmentioned parts. Microscopic study (50x) of the breast feathers reveals that the males of both subspecies have all their barbules pigmented to the tip, but generally there is more pigment in those of *guineensis*.

Immature specimens are darker on the upper- and underparts than *senegala*, but here the difference is not as pronounced as in adult females.

Measurements: Proportions are similar to those of *senegala* (see table 1). The largest spots in the females of *guineensis* (covering 5 barbs) measure 0,6 × 1,2 mm,

Table 1. Measurements of the two subspecies are seen to be fairly identical – the males being slightly larger than the females.

Tabel 1. Målene viser, at de to underarter er ret ens i proportioner, og at hanner er større end hunner.

Sex *Køn*	Subspecies *Underart*	Number *Antal*	Wing (mm) *Vinge*		Bill (mm) *Næb*	
			Variation	Average *Gnsnt.*	Variation	Average *Gnsnt.*
♀♀	senegala	5	45,7-51,0	48,4	8,8- 9,6	9,4
	guineensis	5	47,0-50,1	48,3	9,0- 9,6	9,3
♂♂	senegala	4	48,5-50,9	49,9	9,1-10,0	9,6
	guineensis	4	47,1-52,0	49,8	9,5-10,0	9,7

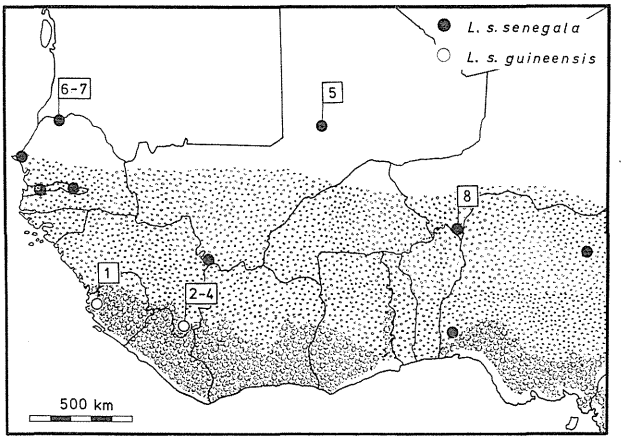
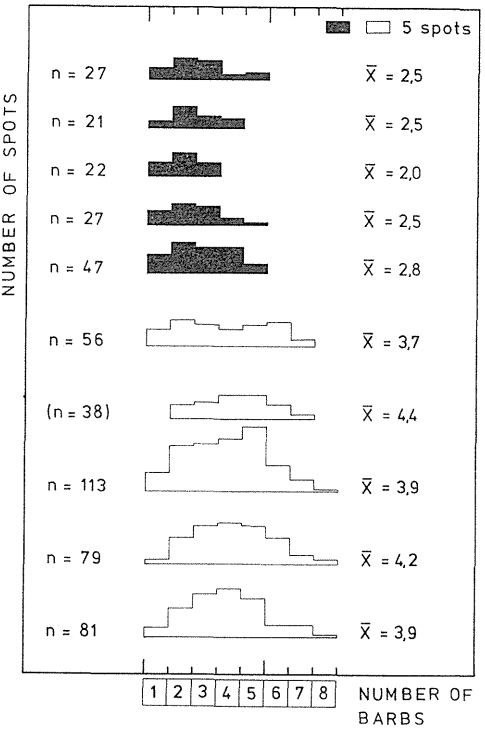


Fig. 3. The map shows from which localities the author has had material for examination (ad. ♀♀). Numbers refer to specimens in fig. 2. The main distribution of desert and steppe to the north (no signs), savanna areas in the middle of the map, and rain forest to the south is from KEAY et al. (1959). Notice the narrow lowland area between the rain forest and the coast which is often covered with a coastal savanna.

Fig. 3. På kortet er vist fra hvilke lokaliteter forf. har undersøgt materiale (ad. ♀♀). Numrene refererer til individerne på fig. 2. Vegetationszonerne er taget fra KEAY *et al. (1959). Bemærkelsesværdig er tilstedeværelsen af det ofte med åben savanna bevoksede, smalle lavlandsområde mellem regnskoven og kysten.*

Fig. 4. In the histograms specimens of *guineensis* are symbolized by black colour, whereas those of *senegala* are white. The sequence is, *guineensis:* no. 1-4 (fig. 2) + 1 extra from N'Zerekore; and *senegala:* no. 5-8 (fig. 2) + 1 extra from Bamako, Mali. For each specimen is shown the number of barbs covered by every single spot. n is the specimen's total number of spots on the breast. The seventh specimen (n in brackets) had lost many breast feathers. All individuals are adult ♀♀. The difference in amount of spotting between the two populations is highly significant ($P < 0{,}001$).

Fig. 4. På figuren er individer af guineensis *vist med sorte og* senegala *med hvide histogrammer. I sammenstillingen er medtaget endnu et individ af hver form ud over de 8 vist på fig. 2. For hvert eksemplar er angivet det totale antal brystpletter (n), samt (i histogrammet) hvor mange stråler de enkelte pletter dækker. Forskellen mellem de to populationer er stærkt signifikant med hensyn til denne karakter. Det 7. individ (n i parentes) havde tabt en mængde brystfjer.*



whereas the largest in *senegala* (covering 8 barbs) measure 0,9 × 1,8 mm (see fig. 4).

Material examined: 5 ad. ♀♀, 4 ad. ♂♂, and 3 imm., N'Zerekore, Guinea (Zoological Museum, Copenhagen). 1 ad. ♀, Tumbo, Sierra Leone (British Museum, London).

Range: Known only from Tumbo (near Freetown), Sierra Leone, and N'Zerekore, Guinea (see fig. 3) but probably also occurring south of these localities.

Remarks: In this form adult ♀♀ are easy to recognize from any other form of *Lagonosticta senegala* (shown on fig. 1). Already HOLGERSEN (1956), who had no material for comparison, noticed that the specimens of the Senegal Firefinch from N'Zerekore had very few spots on the underparts.

The darker colouration of *L. s. guineensis* is in agreement with GLOGER's Rule, and tentatively I suggest that the subspecies may have evolved in isolation in the old and rather stable coastal savanna (MORTON 1968, VOORHOEVE 1968) found south and southwest of the Upper Guinean block of lowland forest. BANNERMAN (1949) mentions that *Lagonosticta senegala* is common in these areas (Freetown and Accra are mentioned), but with the exception of the abovementioned specimen from Tumbo, Sierra Leone, I have not had the opportunity to examine material from these regions. The presence of this subspecies at N'Zerekore may be explained by a later immigration after the cultivation of former woodland areas.

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DANSK RESUMÉ

En ny underart af Amarant (Lagonosticta senegala *(L.)) fra Vestafrika.*

Der beskrives fra Guinea en ny underart af Amarant *(Lagonosticta senegala)*, som adskiller sig fra nominatformen i Vestafrika (fig. 1) ved, især for de adulte ♀♀ vedkommende, at være mørkere og mindre plettet på brystet (fig. 2 og 4). Forskellen på de adulte ♀♀ skyldes dels, at *guineensis* har en mørkere pigmentering af den enkelte fjers skaft og stråler, dels at denne form har melanin i alle bistråler på brystfjerne, mens *senegala* kun har lidt eller slet intet pigment i de yderste stråler bistråler. Den nye underart adskiller sig næppe fra nominatformen i mål (tabel 1), men dens afvigende, mørkere dragt er i overensstemmelse med GLOGER's Regel. I øjeblikket kendes *guineensis* kun fra det sydlige Guinea og Sierra Leone (fig. 3), men det er muligt, at den også forekommer syd for disse områder, specielt da formen kan være opstået i det savanneprægede område mellem regnskovene og kysten.

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