FURTHER NOTES ON THE PENARD OÖLOGICAL COLLECTION FROM SURINAM

by

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With plate V

In a previous paper (Hellebrekers, 1942) I stated my intention to give some more details on imperfectly known eggs, based on material of the collection of the Penard's. The description of these hitherto imperfectly known or incorrectly described eggs will be strongly aided by the coloured plate accompanying the present paper, this plate represents a number of eggs of four species of birds from Surinam, of each species such eggs are figured as to show the variation in shape and colour. Moreover I have the opportunity to give a number of corrections concerning some of the data given in my previous paper. When the latter appeared I sent a copy to Mr. M. Schönwetter, one of the foremost living authorities in oölogy, asking him for a critical comment on my paper. Mr. Schönwetter kindly took a great deal of trouble to verify my statements and he could point out that among the data in my paper there are a number of mistakes and misprints regarding weights and measurements. Whilst in the following pages I give the necessary corrections to my previous paper I want to express my sincerest thanks to Mr. Schönwetter for drawing my attention to these mistakes.

In all the cases where doubt might arise concerning the data in my previous paper I have taken new measurements and weights. Behind the name of each species dealt with below I have cited the page on which the species was mentioned in my previous paper.

Dendrocygna autumnalis discolor Scl. & Salv. (l. c., p. 241). I have already drawn attention to the fact that among these eggs there are a number which show a pronounced gloss whilst others are nearly glossless. The different sets show the following data:

1/15, July 16, glossless and strongly stained. Measurements in mm: average 51.5 × 37.9 (47.8-54 × 35.7-38.8). Average weight: 4.81 g.

1/12, August 26, nearly glossless and slightly stained. Measurements in

mm: average 51.2 × 37 (47.8-56.2 × 34.9-38.5). Average weight: 4.35 g.

1/11, August 26, white and glossy. Measurements in mm: average 50.3 × 37.8 (46.3-52.9 × 36.9-38.5). Average weight: 4.45 g.

1/8, August 26, white and glossy. Measurements in mm: average 51.3 × 36.4 (49.4-55 × 35.6-37.3). Average weight: 4.34 g.

The small differences in measurements and weights do not furnish any evidence for a separation of the material into two distinct groups.

Guara rubra (L.) (l. c., p. 242). As average weight of 100 eggs I found 3.14 g. In Mr. Schönwetter's opinion this weight is too small, according to him the average weight of the eggs of this species is 3.43 g. I found as average weight of another series of eggs from Surinam 3.24 g, which is slightly higher than my previous record, but still appreciably lower than Mr. Schönwetter's data.

Mycteria americana L. (l. c., p. 242). The weight of the eggs from Surinam is 17.2 and 13.8 g, instead of 15.5 and 12 g, as stated in my previous paper.

According to Mr. Schönwetter these eggs do not belong to *Mycteria americana* (L.), but to *Jabiru mycteria* (Licht.). The name *Mycteria americana* should be a synonym of *Tantalus loculator* L., a species which has much smaller eggs. In the collection of the Penard's there are three sets of two and one single egg, collected in U. S. A., these have as average measurements and weight 64.2 × 45.5 mm and 7.34 g.

Ardea cocoi L. (l. c., p. 242). Instead of 3.2 g, as stated in my previous paper, the weight is 4.5 g. Mr. Schönwetter found as average weight of 25 eggs 6.05 g.

Florida coerulea (L.) and **Hydranassa tricolor** (P. L. S. Müller) (l. c., p. 242). According to Mr. Schönwetter the Penard's by mistake have interchanged the names of the two birds, so that the data referred to the one belong to the other. The larger and heavier eggs (1.46-2.04 g) belong to *Florida coerulea,* the smaller and lighter eggs (1.19-1.37 g) belong to *Hydranassa tricolor.* In my opinion the mistakes of the Penard's as far as concerns these birds are not so striking, for they state that the eggs of *Florida coerulea* measure 43 × 32 mm and those of *Hydranassa tricolor* 41 × 31 mm. As already remarked in my previous paper the eggs of these two species are not distinctly separated in the collection. A few sets only are accurately identified, the data of these are:

Florida coerulea: 1/4. Measurements 42.8 × 32.1 (41.7-43.6 × 31.7-32.8) mm; weight 1.64 g.

Hydranassa tricolor: 1/3, 2/2, 1/1. Measurements 41.3 × 30.4 (39-43.2 × 29.9-30.9 mm; weight 1.20 g.

The measurements therefore are slightly different, but the difference in weight is striking.

Butorides striatus striatus (L.) (l. c., p. 243). The average weight is 0,910 g instead of 0.210 g, as stated in my previous paper.

Porzana albicollis typhoeca Peters (l. c., p. 244). The average weight is 0.785 g instead of 0.530 g, as stated in my previous paper.

Porphyrula martinica (L.) (l. c., p. 245). The average weight is 1.25 g instead of 2.42 g, as stated in my previous paper.

Aramus scolopaceus scolopaceus Gm. (l. c., p. 245). For comparison with the data given in my previous paper I mention here those of a set of six eggs of *Aramus scolopaceus pictus* (Meyer) from Florida, April 5, 1885: average measurements 59.8 × 44.9 mm, average weight 5.61 g. Five of the six eggs possess a distinct veil, just as this sometimes occurs in the eggs of certain birds of prey, e. g., in buzzards.

Crypturellus variegatus variegatus (Gm.) (1 c., p. 246). The average weight is 2.47 g instead of 1.47 g, as stated in my previous paper.

Zenaidura auriculata rubripes (Lawrence) (l. c., p. 246). Mr. Schönwetter remarks that the eggs of this species according to his data have a weight of 0.60 g. In my previous paper I gave as weight 360 mg. I checked the measurements and weight again and found that the data as given in my previous paper are correct.

Buteogallus aequinoctialis (Gm.) (l. c., p. 248). The average weight is not 4.3 g, as stated in my previous paper, but slightly higher, 4.71 g.

Glaucidium brasilianum phaloenoides (Daudin) (l. c., p. 248). The average weight is 1.07 g instead of 1.63 g, as stated in my previous paper. According to Mr. Schönwetter, however, *Glaucidium* has much smaller eggs. Those in the collection identified as the eggs of *Glaucidium* in all probablity belong to *Otus* (*Scops*) *choliba crucigerus* (Spix) or possibly to *Otus atricapillus* (Temminck).

Forpus passerinus passerinus (L.). The average weight of 1.31 g, as given in my previous paper, of course is erroneous, the average weight being 0.131 g.

Chrysoptilus punctigula punctigula (Bodd.) (l. c., p. 249). Although Mr. Schönwetter does not possess eggs which undoubtedly belong to this species, in his opinion the measurements of the eggs attributed by the Penard's to *Chrysoptilus punctigula* are too large for such a small bird. I checked the measurements and weight again and found them to be as given in my previous paper. Possibly the eggs were wrongly identified by the Penard's.

Crotophaga ani L. (l. c., p. 252). I obtained a chemical analysis of the

typical coat of white chalky matter which covers nearly the whole of the eggs. This layer chiefly consists of calcium carbonate, it contains traces of magnesium and silicium dioxide, moreover organic matter in which the test for uric acid proved negative. Quantitatively the layer consists of 19 % organic matter and 81 % calcium carbonate. It is interesting to compare these results with those mentioned by Van Pelt Lechner (1911-1913) for the white patches on the eggs of *Ardea cinerea* L., which contain a very small quantity of calcium carbonate but consist chiefly of uric acid mixed with sodium urate, possibly also ammonium urate.

Chordeiles acutipennis acutipennis (Hermann) (Peters, 1940, p. 187) (*Chordeiles acutipennis,* Bodd., Penard & Penard, 1910, p. 86). In my previous paper I did not include the data of the eggs brought by the Penard's to this species, because they are so strongly different among each other and I doubted whether they were correctly identified. Penard & Penard, however, already point to the strong variation in the eggs of this species, which differ according to the colour of the ground on which they are laid. The data of the material are as follows.

1/2, Texas. Measurements and weight: 30.9 × 21.2 mm, 465 mg, and 26.4 × 20 mm, 405 mg. Ground greyish white, marked with small spots of a yellowish-brown colour and purplish under markings.

1/1, no data. Measurements and weight: 30.7 × 20.3 mm, 395 mg. As the former, but somewhat darker.

1/1, 1899. Measurements and weight: 25.4 × 19.1 mm, 375 mg. Ground reddish white, marked with small spots of a reddish brown colour, purplish under markings.

1/1, 1897. Measurements and weight: 25.7 × 18.4 mm, 430 mg. Ground reddish white, very slightly marked with reddish brown.

Note. Notwithstanding the fact that the egg without data is much larger than that of 1897 the latter is heavier than the former.

Pipra aureola aureola (L.) (l. c., p. 256). The eggs of this species are not described by Oates (1903), Ogilvie-Grant (1912) or Nehrkorn (1910, 1914). In my previous paper I gave a description of the material, eight eggs of different shape and colour are represented on Pl. V figs. 1-8. The figures show the pronounced variation in shape and colour of the eggs.

The ground colour of the eggs is white with various tints of other colour: yellowish white, greenish white (this does not distinctly appear in the figures), reddish white (fig. 8) or light yellowish brown. Moreover the markings are highly variable, some eggs are very sparingly spotted in a more or less diffused way (figs. 1 and 2), whilst others show spots with rather distinct contours on a clear ground colour (figs. 3 and 4). In other

eggs the rather vague spots are gradually passing into the ground colour (figs. 6 and 7). In some cases almost the whole of the egg is covered with markings (figs. 5 and 8). The eggs of one set show a distinct cap or zone on the larger end formed by confluent spots (figs. 1 and 2).

Legatus leucophaius leucophaius (Vieill.) (l. c., p. 259). Oates (1903, p. 198) gives the following description: "The eggs of the White-necked Tyrant-bird are of a blunt oval shape and devoid of gloss. They are of a pinkish-white colour, blotched and spotted, chiefly round the larger end, with purplish red and lavender, and sometimes with lilac-red in addition. Five examples measure respectively: .84 by .65; .77 by .62; .78 by .58; .78 by .57; .84 by .65". Nehrkorn (1910, p. 166) characterizes them as follows: "Crêmefarben mit dicken violetten und schwarzbraunen Flecken, die meist nur am stumpfen Ende stehen. 20 × 15,5 mm". Schönwetter (1928, 1933) already pointed out that these descriptions are incorrect. In my previous paper I described the material of the collection of the Penard's, Plate V figs. 9-16 show a number of specimens from the collection of different size and colour.

The ground colour of the eggs in this species also is strongly variable: yellowish white, light and darker brown, sometimes more or less reddish (fig. 14). The greater part of the 28 eggs in the collection of the Penard's is of a comparatively dark brown tint. Taken as a whole the series therefore is of a darker colour than one might assume on account of the figures, the plate namely shows more or less the extremes in shape and colour. The brown colour is not clear, but has a more or less "dirty" appearance. The markings are more sparsely distributed than those of the previous species, the dots are vague and diffused, so that the eggs tend to show an appearance of having a uniform colour. Only a few eggs show a number of dark brownish black spots (fig. 12) or dark hair-lines (figs. 10 and 14). The egg represented in fig. 9 differs, together with the other egg of the same set (fig. 10) from all other eggs of this species. These two eggs are not only much lighter in colour, but they are also more pointed and more glossy, whilst all the other eggs are completely devoid of gloss. Fig. 11 shows a comparatively light egg that with two eggs of the common dark type belongs to one set. Another egg, belonging to a set of two of corresponding shape and colour (fig. 14) has a more or less purplish colour.

Generally the eggs of this species are of a prolonged oval shape, in some cases this is rather pronounced (fig. 13). Eggs of a more roundish shape, as the one of fig. 15, are of much rarer occurrence.

Pitangus lictor lictor (Licht.) (l. c., p. 260). The description of these eggs by Oates (1903, p. 201) reads as follows: "The eggs of the Lictor

Tyrant-bird in the Collection are of an ordinary oval shape, moderately glossy and cream-coloured, delicately marked with specks, spots, and tiny blotches of deep blackish brown and lavender. They measure respectively: 1·03 by ·75; 1·04 by ·75". This description is not correct in all respects, as was already pointed out by Penard & Penard (1910, p. 246). Nehrkorn, who received his eggs of this species from the Penard's, gives a better description. In my previous paper I described the material of the Penard collection, Plate V figs. 18-24 represent some eggs of *Pitangus lictor* from Surinam, Plate V fig. 17 a specimen from Argentina, which possibly belongs to another subspecies.

The ground colour of the eggs varies from nearly pure white to light whitish cream, in some cases the ground colour has a more or less yellowish tint. As representatives of the whole series the figured eggs have a somewhat too whitish appearance, for generally the eggs of this species are rather densely spotted, the specimens represented in figs. 21, 22, and 23 form the usual type. The spots, which as a rule are evenly distributed over the whole of the surface (in the eggs of figs. 17, 19, and 20, however, they are chiefly found on the larger end), are of a dark purplish brown, sometimes more or less reddish brown (fig. 23) or nearly black (figs. 19 and 22). In reality the spots are slightly brighter than appears on the plate. The egg of fig. 20 has large confluent spots, a feature which is of rare occurrence in this species.

The egg from Argentina (fig. 17) is much lighter than those from Surinam; as already remarked above this may belong to another subspecies.

Cacicus haemorrhous haemorrhous (L.) (l. c., p. 265). In my previous paper I already stated that the set of six eggs differs from the five single eggs by their being rather glossy. Mr. Schönwetter kindly informed me that this species never lays six eggs, but two and occasionally three. There is, however, no doubt that the six eggs belong to one set, moreover it was labelled by the Penard's as such. Possibly it belongs to some other species of bird, but at present it is impossible to ascertain this. Some more data on the particulars of these eggs may be given here.

1/6. Shape and texture: spherical and glossy. Average measurements in mm: 26.5 × 21.2 mm. Average weight: 351 mg.

5/1. Shape and texture: elongated and glossless. Measurements in mm and weight: 30.9 × 20, 330 mg; 27.5 × 18.6, 255 mg; 30.4 × 18.3, 280 mg; 29.9 × 18.9, 305 mg; 30 × 19.1, 300 mg; average 29.7 × 19, 294 mg.

Three eggs from British Guyana (not from the Penard collection) are also glossless and gave the following data: 30 × 21.1 mm and 380 mg; 28.3 × 18.3 mm; 30.2 × 20 mm; the two last have an average weight of 315 mg.

Ogilvie-Grant (1912, p. 370) also describes the eggs of *Cacicus haemorrhous* as glossless, the measurements given here are 1·11 by ·75, and 1·08 by ·75 (28.2 × 19 mm and 27.4 × 18.5 mm).

The eggs of the set of six differ therefore from all the eggs which undoubtedly belong to *Cacicus haemorrhous* by being rounder, more glossy, and heavier.

Psomocolax oryzivorus oryzivorus (Gm.), forster **Xanthornus** (l. c., p. 265). The average measurements of 17 eggs are 35.7 × 24.3 mm, not 35.7 × 34.3 mm, as stated in my previous paper. These eggs bear a strong resemblance to extremely large eggs of *Oriolus oriolus oriolus* (L.).

In my previous paper (l. c., p. 266) I quoted a communication by Mr. Schönwetter in which he refers to two eggs in the Penard collection labelled as "*Icterus puniceus*". I did not succeed in finding these in the collection, moreover it remains a problem which bird is meant with the cited name.

Cyanerpes cyaneus cyaneus (L.) (l. c., p. 272). According to Mr. Schönwetter the eggs referred to this species in reality belong to *Chlorophanes spiza spiza* (L.) (Hellmayr, 1935, p. 243). In the first edition of his Katalog Nehrkorn (1899) referred the almost black eggs to *Coereba cyanea* (L.), in the second edition (Nehrkorn, 1910), however, he brings these eggs to *Chlorophanes spiza* (L.), whilst he describes the eggs of *Cyanerpes cyaneus* as whitish. In all probability Nehrkorn and Schönwetter are right. The eggs of this species were not described by Oates (1903) or by Ogilvie-Grant (1912).

Donacobius atricapillus atricapillus (L.) (l. c., p. 273). As far as I know the eggs of this species never were figured. Plate V figs. 25-30 shows a number of these eggs of various colour and design.

The ground colour of the eggs is purplish white (figs. 25, 27, 28, and 29) or yellowish (figs. 26 and 30). They are nearly completely covered with small spots or diffuse markings of a reddish brown or a purplish brown colour. Taken as a whole the eggs with the purplish spots show more of the ground colour than those with reddish brown markings. Generally in the eggs with a more or less purplish colour the markings are more distinct than in those with a reddish brown colour. Both types are equally common in the material. Two sets are extremely light (fig. 25). Rarely the eggs are comparatively self-coloured, as that of fig. 30.

LITERATURE

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EXPLANATION OF PLATE V

Fig. 1-8. *Pipra aureola aureola* (L.). 1-2, two eggs of one set, 1898; 3, 1898; 4, April 1, 1904; 5, without date; 6, February 2, 1901; 7, March 22, 1901; 8, March 18, 1903. All the eggs are from Surinam.

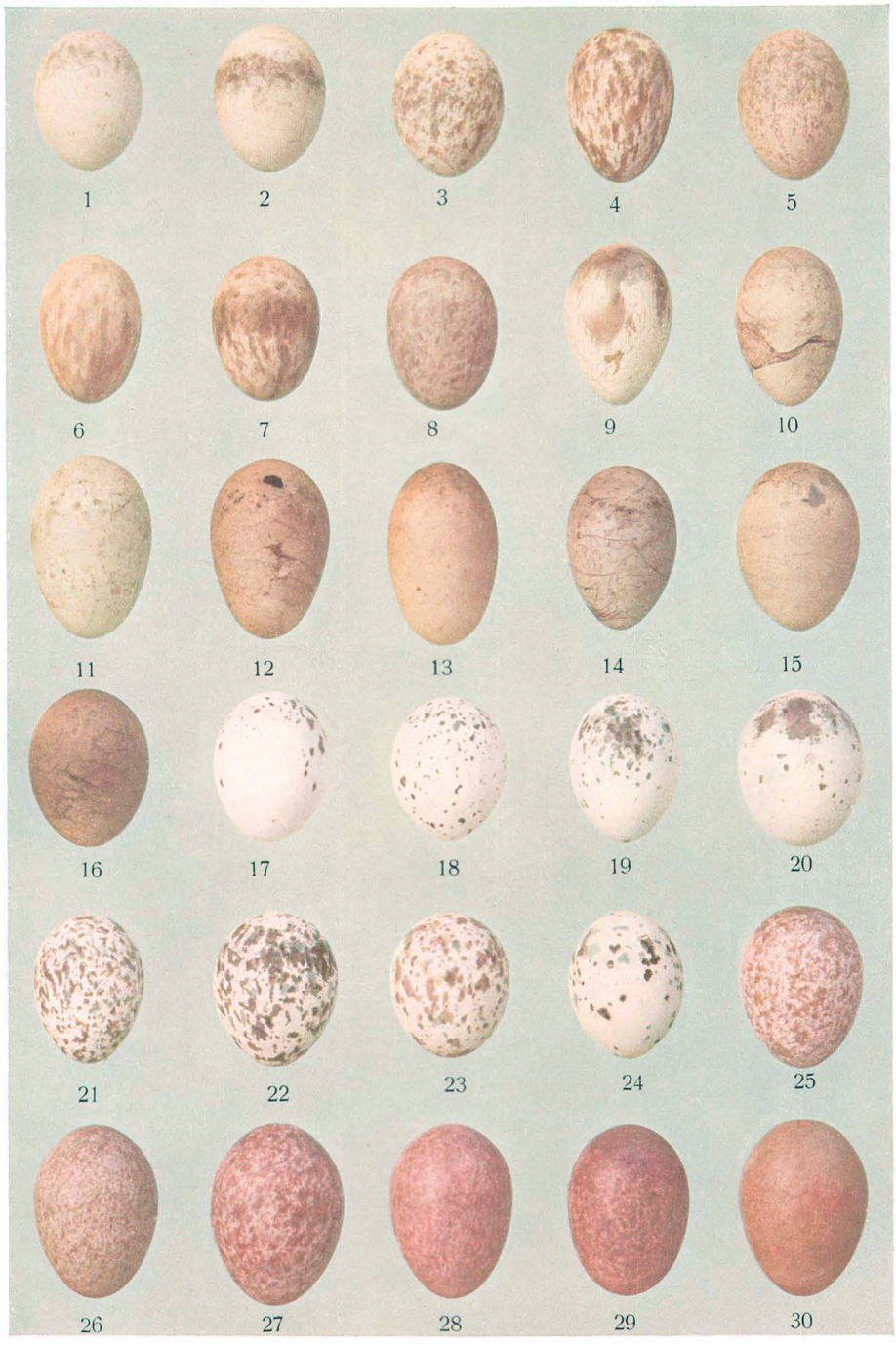
Fig. 9-16. *Legatus leucophaios leucophaios* (Vieill.). 9-10, two eggs of one set, March 1, 1903; 11-12, two eggs of one set, June 5, 1897; 13, without date; 14, February 19, 1903; 15, April 4, 1903; 16, April 26, 1903. All the eggs are from Surinam.

Fig. 17. *Pitangus lictor* (Licht.), Argentina, November 17, 1901.

Fig. 18-24. *Pitangus lictor lictor* (Licht.). 18, March 30, 1897; 19, August 3, 1902; 20, June 17, 1902; 21, May 1, 1902; 22, February 19, 1898; 23, June 1, 1902; 24, May 14, 1901. All the eggs are from Surinam.

Fig. 25-30. *Donacobius atricapillus articapillus* (L.). 25, May 15, 1903; 26, January 7, 1898; 27, February 24, 1903; 28, 1900; 29, June 21, 1901; 30, April 10, 1897. All the eggs are from Surinam.

All figures natural size.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