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## A LIST OF THE BIRDS KNOWN FROM ROTI AND ADJACENT ISLETS (LESSER SUNDA ISLANDS)

by

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With 1 text-figure and 2 plates

### INTRODUCTION

Father Verheijen (in press) has given a narrative of his visit to Roti, with a list of all birds recorded from material, personal observations, and hearsay. Although several of Verheijen's own field observations are entirely reliable, other species mentioned by him cannot be regarded as of anything but very doubtful occurrence. Therefore I have considered it useful to compile a list of those birds which are now known from collected specimens.

Previous to Father Verheijen's studies, ornithological knowledge of Roti rested entirely on a visit to the island made by the anthropologist Dr. H. F. C. ten Kate in 1891 (22 August — 9 September). During his stay ten Kate did some collecting of miscellaneous zoological objects, which he forwarded to Leiden. His first consignment, containing six bird skins representing five species, became the subject of a paper by Büttikofer (1892a), which is important as the only publication specifically dealing with birds from Roti.

Two further small lots of birds forwarded by ten Kate: 8 specimens in October 1892 and 10 in 1893, were not published as such, but ten Kate (1894), Finsch (1901a, 1901b), van Oort (1909, 1910) and Mees (1961a) mentioned five species in addition to the five recorded by Büttikofer. The eight specimens of ten Kate's second lot were received in spirits; apparently five of them were useless and have been thrown away, two may have been made into study-skins but are missing, and one was prepared as a skeleton. The last lot consisted of skins, but of these also some cannot now be found. This leaves a total of 15 skins and one skeleton, in 13 species, all of which will be recorded in the following list.

Father Verheijen's collection from Roti and the adjacent islands of Pulau Dao and Doö contains 45 species, which together with those from ten Kate (ten of which were not obtained by Verheijen) make a total number of 55 species represented in our collection by material from Roti and its satellite islands.

As all Verheijen's material was collected in 1969, I have listed only the dates, but not the year of collecting in the systematic list.

As was to be expected on geographical grounds, the avifauna of Roti is very closely related to that of the neighbouring larger island Timor. Roti is, however, certainly much poorer in species as its highest hills rise only to ca. 430 m, so that it lacks mountain birds which form such an important element in the avifauna of Timor. In how far the avifauna of Roti is impoverished compared with that of the lowlands of Timor, cannot be known until its bird fauna has been more completely investigated.

Although ten Kate collected only 14 species, of which no more than seven were passerines, he obtained a very well-marked endemic subspecies, *Rhipidura rufiventris tenkatei*. It appeared reasonable to expect that Verheijen's much larger collection would provide additional evidence of geographical differentiation, but that is not the case. One reason for this may be that Verheijen visited only a very small part of Roti, and probably not the zoologically most interesting part. Ten Kate, on the other hand, travelled extensively, and he mentioned especially that at the time of his visit the districts of Talai and Keka were well forested. Of course only the greatest optimist will expect that a country well wooded in 1891, is still in the same condition today. Information about the island in those days may be found in ten Kate (1894) and Wichmann (1892a, 1892b).

All localities mentioned in the text are shown on the map which is copied (and reduced) from the 1: 100 000 map prepared by the Topografische Inrichting, Batavia (1924: sheets 221, 225, 229, 230). The area of the island is 1220 km<sup>2</sup> (information received from the Topografische Dienst, Delft, in April 1973).

Roti is divided in 18 landschappen (districts); to avoid overcrowding only the names of those mentioned in the text are shown on the map.

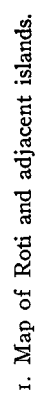
#### SYSTEMATIC LIST

##### ***Ardea purpurea manilensis* Meyen**

*Ardea purpurea manilensis*; van Oort (1910: 84).

An unsexed specimen, 3 or 4 September 1891, Dengka (TK).

Peters (1931) did not list this species for any of the Lesser Sunda



Islands, but our collection contains a mounted individual collected as long ago as January 1880 at Bima, Soembawa (van Lansberge), and another one from Lombok. Subsequently Rensch (1931a, 1931b) recorded specimens from Soembawa and Flores. Van Oort's (1910) short paper in which the specimens from Roti and Soembawa are listed, appears to have been overlooked by the mentioned authors. The species is not yet known from Timor.

***Ardea novaehollandiae novaehollandiae* Latham**

♀, with large gonads, 24 March, Baä. Wing-length 293 mm. A very small pullus, 23 March, Namo-Dale.

***Egretta intermedia intermedia* (Wagler)**

♀, ovary very small, 18 April, Palau Dao.

Iris light straw yellow, its outer margin brownish; bare skin around eyes and base of bill greenish yellow; bill warm yellow, with some brown near the tip on the maxilla; legs black, tibia on the inside greenish yellow. Wing 292 mm.

Since Sharpe (1898), Mathews (1914) and Hartert (1920) two subspecies have been generally recognized in the Indo-Australian region: the nominate race, widely distributed in south and east Asia, east to Java (type locality) and Celebes, and *E. i. plumifera* from Australia (type locality New South Wales), New Guinea, and several of the Moluccan islands. The last-mentioned race would be: "Wie *E. intermedia intermedia*, aber der nackte Teil der Schenkel grössenteils oder doch teilweise gelb, Schnabel immer gelb. Etwas kleiner. Flügel 280-295 mm", whereas the characters of the nominate race were given as: „Der unbefiederte Teil der Schenkel durchaus schwarz. Schnabel gelb mit schwarzbrauner Spitze, in der Brutzeit ganz schwarz. Flügel etwa 290-320" (Hartert, 1920). Some time ago, however, when studying material from New Guinea, I observed that the legs of specimens from Sibil (cf. Mees, 1964a: 6-7) and from Koerik (leg. Hoogerwerf), which on geographical grounds one would expect to be *E. i. plumifera*, had the leg-colour indicated on the labels as black, without qualification, and in the skins also, which were comparatively fresh at the time, the legs were entirely black. This caused me to doubt the validity of *plumifera*, but in our collection only a few old mounted specimens from Australia were present (with brownish legs, undoubtedly decolourized); therefore I asked Mrs. LeCroy of the American Museum of Natural History, New York, for information. From the very full notes which Mrs. LeCroy supplied, it is apparent that the majority of birds from Australia have

entirely black legs, whereas size differences between the various Indo-Australian populations are no more than average ones. Remains the colour of the bill, which was supposed to change to black in the breeding-season in the nominate race, whereas in Australian birds it was supposed to be always yellow. It is surprising that in Australia it has been discovered only a few years ago, that there also the bill (and the legs) change colour in the breeding-season (Lendon, 1966). Birds in breeding plumage have the: "face, blue-green; bill and upper legs, red; lower legs and feet, black" (van Tets in Frith, 1969: 72). It might be argued that this indicates a subspecific difference: in the nominate race the bill turns black, in the Australian population red, but it is likely that this difference is apparent rather than real: dark red may look blackish when observed from some distance, and it would almost certainly change to blackish in skins. As far as bill-colour is concerned, the paper by Junge (1948) should also be consulted; in addition he published measurements of material in Leiden. The conclusion appears to be justified, that *E. i. plumifera* is a synonym of *E. i. intermedia*<sup>1)</sup>.

Junge (1948) has also demonstrated that *E. i. palleana* Deignan (1947) is a synonym of the nominate race, and this has been generally accepted (cf. Ali & Ripley, 1968: 71), even although Deignan (1963) still retained *palleana*.

*E. intermedia* has rarely been recorded in the Lesser Sunda Islands; it is not known from either Flores or Timor, but has once been collected on Soemba (Meyer, 1882). Mr. S. Eck has been so kind to examine this specimen in the Dresden Museum, where it is registered under no. C 6265, and to confirm its identification.

### ***Nycticorax caledonicus hilli* Mathews**

♀, with large gonads, 14 April, Doö.

### ***Dendrocygna arcuata arcuata* (Horsfield)**

♂ juv., gonads small, 27 March, Namo-Dale; 3 pulli, 21 March, Namo-Dale.

In the juvenile, all flight-feathers are only just beginning to grow, and the specimen is listed as belonging to the nominate race on geographical grounds only, as the only difference between this and the Australian race *D. a. australis* is one of wing-size.

<sup>1)</sup> The statement in my paper (Mees, 1964a) that the specimens from Sibil have black bills is a lapsus or misprint, as both have yellow bills. The few specimens in our collection with (partly) black bills are from Japan, Sumatra, Java and the Celebes.

The three pulli, small downy young, had been marked by Father Verheijen, with a query, as *Nettapus coromandelianus*. Comparison with the plate in Frith (1967: pl. V) convinced me that they belonged to *Dendrocygna*. Judging from Frith's plate the specimens were, unexpectedly, closer to *D. eytoni* (an Australian species never recorded from the Lesser Sunda Islands) than to *D. arcuata*. As I still felt very uncertain, I asked and obtained permission to forward one of the ducklings to the C. S. I. R. O. Division of Wildlife Research, where Dr. Schodde identified it as *D. arcuata*; he moreover informed me as follows: "It is worth noting that the names identifying the pulli of *Dendrocygna* species on the plate of downy ducklings in Dr. Frith's Waterfowl in Australia have been transposed in error".

***Anas gibberifrons gibberifrons* S. Müller**

Two unsexed immature specimens, 24 April, Namo-Dale.

The wings are short, the primaries basally in sheaths.

***Accipiter fasciatus hellmayri* Stresemann**

*Astur sylvestris*; Finsch (1901b: 239).

*Accipiter fasciatus hellmayri*; Wattel (1973: 131, Roti).

One unsexed specimen (= ♂ juv.), 1891, Roti (TK).

This bird is in the juvenile plumage, the feathers of the upper parts broadly edged with rufous. Wing 204, tail 162 mm, tarsus 54, culmen from skull 26, culmen from cere 15 mm. Büttikofer identified this specimen as *Astur torquatus* (which equals *Accipiter fasciatus hellmayri*); this identification was changed to *Astur sylvestris* (= *Accipiter novaehollandiae sylvestris*) by Finsch, who believed the individual to be a female, and changed again to *A. f. hellmayri* by Wattel. Curiously, I have been unable to find an *Accipiter* mentioned on any of the lists of material received from ten Kate, and I wonder if this is perhaps the missing bird received under the name *Tinnunculus*, as the rust coloured upperparts lend it a superficial resemblance to *Falco moluccensis*.

***Circaetus gallicus gallicus* (Gmelin)**

♀, 11 April, Baä.

Iris yellow, bill blackish grey, legs grey and whitish.

This species has been known from the Lesser Sunda Islands for a long time; it was discovered as early as 1829 by S. Müller, who collected a spe-

cimen on Timor. The record was published by Schlegel (1862: 24). A second specimen, from Flores, reached Leiden in 1863 (Schlegel, 1866, 1873: 112); both specimens are still present in our collection, the first one is mounted, the other is a study-skin.

As far as published evidence goes, seven specimens appear to be known from the Lesser Sunda Islands; apart from the three in Leiden, they are: one from Lombok (leg. Everett: Hartert, 1896), one from Flores (leg. Everett: Hartert, 1898a), one from Timor (leg. Stein: Mayr, 1944)<sup>1</sup>) and one from Soembawa (Rensch, 1931a). The first three specimens are in New York, where they have been studied by Mayr (1941a), the last-mentioned one is in Berlin.

Mayr (1941a) took these birds for migrants: "Die Kleinen Sunda-Inseln sind das Winterquartier einer kleinen noch unbeschriebenen Rasse. Da ich dagegen bin, Wintervögel unbekannter Herkunft zu beschreiben, schlage ich vor mit der Benennung zu warten, bis Brutvögel vorliegen. Das Brutgebiet liegt vermutlich in Ostasien". To me, the evidence at present available suggests that *Circaetus gallicus* is a resident on the Lesser Sunda Islands, and not a migrant. There are several arguments for this. The first is, that of the seven specimens known, one has been collected in April, one in the second half of May, and one on 29 May. Whereas it is logical to assume that individuals of a migrant would occasionally oversummer in their winter quarters, it is also likely that such individuals would be very few. The fact that three of the six dated specimens have been collected in months that they ought to have been breeding in the Northern Hemisphere, is certainly significant. To this comes that *Circaetus gallicus* is elsewhere not known from nearer than Malaya and Indo-China, where it occurs as a rare vagrant. If there was a regular migration from Central Asia to the Lesser Sunda Islands, one would have expected at least a few records from Sumatra, Java, Borneo, Celebes, the Philippines and Formosa, all of which are ornithologically as well known or better known than the Lesser Sunda Islands. A further argument is that in the Palaearctic region, going from west to east, *Circaetus gallicus* shows a gradual increase in size. It is not very likely (but of course very well possible) that this gradient would be suddenly reversed at the extreme eastern end of the range. A population wintering in the Lesser Sunda Islands would have to live pretty far east for the migration to make any sense at all. On the other hand, one would

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1) Mayr listed this specimen as a "first record for Timor". He appears to have overlooked Schlegel's publications, although they had been referred to by Rensch (1931a). The reason is probably that Mayr based his list entirely on Hellmayr (1914), who ignored Schlegel's record.

almost expect a resident subspecies of the Lesser Sunda Islands to be smaller than its Palaearctic relatives. A further argument is that the specimen from Roti is in an advanced stage of primary-moult: the two outer primaries are old, the third is just growing out, all others are new. In the Northern Hemisphere (at least in Europe), the main moult begins in April of May, and is completed in September (Niethammer, 1938: 271). It looks therefore as if Lesser Sunda Island birds moult in a different season from northern birds, which would be difficult to explain if they belonged to the same populations. Finally, it is worth drawing attention to the fact that the occurrence of an isolated population of a Palaearctic species in the Lesser Sunda Islands is not without precedent. A very similar pattern of distribution is found in *Hieraaetus fasciatus* (cf. Stresemann, 1932), and there is also the case of *Muscicapa (Alseonax) latirostris* with its close relative *Muscicapa segregata* confined to Soemba.

If I am right in supposing that there is an indigenous breeding population of *Circaetus gallicus* in the Lesser Sunda Islands, it ought to be subspecifically separable. Mayr, quoted above, left no doubt that he did consider it separable on the basis of small size. Although the measurements of my specimens confirm the small size, they are not clearly below the minima found in European birds, and, however unsatisfactory this is from the zoogeographic point of view, for the moment I have no option but to leave them in the nominate race. In future I hope to make a more comprehensive study of the moult and plumages of this species, which may lead to reconsideration.

Wing-measurements of material in our collection (in mm):

France: ♀ 545.

Germany: ♂ 520, 525, ♀ 560, 580.

Romania: ♂ 535, 540, 550, ♀ 530.

Beirut, Lebanon: ♂ 520.

Flores: sex uncertain 525.

Roti: ♀ 510.

Timor: ♂ 515.

For additional measurements of Eurasian birds, see Dementiew (1932), and Glutz von Blotzheim, Bauer & Bezzel (1971: 278). Additional measurements from the Lesser Sunda Islands are: ♂ 527 + x (moulting) (Rensch 1931a: 515), ♂ 507, 520, ♀ 519 (Mayr, 1941a).

Since the preceding paragraphs were written, Father Verheijen has informed me that on Flores he has received alive a young individual not or barely able to fly (plate I). Although the native who brought the bird



in was somewhat hazy about the circumstances under which he found it, this provides proof of breeding in the Lesser Sunda Islands.

***Falco moluccensis timorensis* Mayr**

One unsexed specimen ("♂ juv." added in the handwriting of Finsch), 1891, Roti (TK); ♀ ad., 14 April, Pulau Dao.

As Mayr (1941a) notes, the species still requires a thorough revision, and I am calling the birds from Roti *F. m. timorensis* on geographical grounds only.

Amongst the ten birds forwarded by ten Kate in 1893, were two specimens of *Falco moluccensis*, but only one is in our collection, and only one is entered into our register so that the other has presumably been thrown away soon after it was received, but see remarks made under *Accipiter fasciatus*.

***Synoicus ypsilophorus raaltenii* (S. Müller)**

2 ♂ ad., 2 ♀ ad., ♂ half grown, sex? half grown, pullus (very small), 28 March, Namo-Dale.

These specimens agree well with material of *S. y. raaltenii* from Timor (the types of which are in our collection). Father Verheijen has also provided us with a large series from Flores. Mayr (1944) gave a discussion of *Synoicus ypsilophorus* in the Timor region, in which he included Flores in the range of a newly described subspecies *S. y. castaneus* (type-locality Alor). As I am unable to see any clear difference between birds from Timor, Roti and Flores (there is a considerable individual variation, as opposed to geographical variation), Flores should in my opinion be included in the range of *S. y. raaltenii*.

In Father Verheijen's notes reference is made to a pullus of *Turnix maculosa* collected on Roti. The specimen is not amongst the material received.

***Rallus philippensis* subsp.**

♂, April, Mok-Dale; sex?, juvenile, 1 April, Namo-Dale.

The geographical variation of this rail is still insufficiently understood (cf. Mayr, 1944: 145-146; van Bemmelen, 1948: 389; Junge, 1953: 11-16), for which reason I prefer not to apply a subspecific name.

***Amaurornis phoenicurus leucomelanus* (S. Müller)**

♀, 23 March, Mengge-Lama; pullus, 23 March, Namo-Dale; ♀, 31 March, Namo-Dale; ♀, 5 April, Ti.

The pullus is entirely covered with glossy black down; on the lower

belly this is shorter, less glossy, and blackish brown; the bill is black with a white tip to the mandible, the legs are brownish black.

***Porphyrio porphyrio* subsp.**

One unsexed specimen, 1891, Roti (TK).

This bird has a wing-length of only 223 mm, and therefore is certainly a resident and not a migrant from Australia. In our collection this specimen is catalogued under the name *P. p. mertoni* Berlepsch (type-locality Kei Islands), a name used by Peters (1934) for the population from Timor. Mayr (1944), on the other hand, referred his specimens from Timor to *P. p. melanopterus* Bonaparte (type-locality Ceram). In the description of *mertoni*, no mention was made of *melanopterus*, and nobody has ever indicated differences between the two, although *mertoni* is generally recognised (cf. Hartert, 1924; van Bemmelen, 1948).

Another possibility is that birds from Timor and Roti would belong to a separate subspecies; indeed a subspecies from Timor was described by Schönwetter (1934), apparently unintentionally, in an oological article: "*Porphyrio melanotus steini* Neum. Timor. Grundfarbe hellrötlichbraun; Flecken mittelgross, dunkelbraun und grau, wenig dicht, aber ziemlich gleichmässig verteilt; in der Regel im Ganzen dunklere Eier als bei den anderen *Porphyrio*-Arten". This is followed by figures of weights and measurements. The name *Porphyrio melanotus steini* was probably copied from a label, and I am not aware that Neumann has ever published it. Schönwetter has, however, validly published the name, as cited above, and must be regarded as its author. The name was republished, now in the combination *Porphyrio poliocephalus steini* "Neumann", by Schönwetter (1962: 352).

In the circumstances it seems best not to apply a subspecific name to the bird from Roti.

***Irediparra gallinacea gallinacea* (Temminck)**

One unsexed specimen, 1891, Roti (TK).

***Charadrius peronii* Schlegel**

♂, 13 April, Doö.

***Himantopus himantopus leucocephalus* Gould**

*Himantopus leucocephalus*; Büttikofer (1892: 206); ten Kate (1894: 216, 226).

Three unsexed specimens, 1891, Roti (TK).

According to ten Kate (1894) these birds were collected at the small freshwater lake Oindoei, Landoe, on 26 August 1891; two of them were already listed by Büttikofer, the third skin was received with ten Kate's last consignment, which contained two individuals of this species, the second one of which is no longer present. According to our register, the missing specimen was exchanged with Count von Berlepsch in December 1892.

### ***Stiltia isabella* (Vieillot)**

*Glarcola grallaria*; Büttikofer (1892: 206); ten Kate (1894: 216, 226).

One unsexed specimen, 1891, Roti (TK). Ten Kate shot this bird at the same place as the preceding species, at the Lake Oindoei, Landoe, on 26 August 1891.

*Stiltia isabella* has since long been known from Timor, but Hartert (1898b), and Rensch (1929, 1931a) did not list it for Flores and Alor. Our collection contains a specimen from Larantoea, Flores, 1863 (leg. Semmelink), and Father Verheijen forwarded a series of seven from Roeteng, Flores, collected in June and July 1969. The record from Larantoea was published long ago by Schlegel (1865: 18). We have also three specimens from Alor (Ombai): two were collected in September 1880, by Governor-General J. W. van Lansberge, and one in July 1897 (purchased from Rolle in 1898). These specimens were recorded by Finsch (1901b: 230 footnote).

### ***Sterna anaethetus anaethetus* Scopoli**

♂, 21 April, Pulau Dao.

The nearest localities from where this tern was previously known are Sangeang off the north-east coast of Soembawa (Meise, 1930) and Goenoeng Api (van Bemmelen & Hoogerwerf, 1940). On Goenoeng Api, Hoogerwerf found the species breeding, but not in large numbers.

### ***Sterna fuscata* subsp.**

♀ with small gonads, 17 April, Pulau Dao.

Wing 287, tail to tip of outer rectrix 142, entire culmen 46, exposed culmen 36 mm. Moults in primaries and tail.

This species does not appear to have been recorded previously from any of the Lesser Sunda Islands. Elsewhere in the Indian Archipelago it is also little-known. For example, in the Moluccas, van Bemmelen (1948: 381) knew it only from Boeroe (based on a mounted specimen in our collection, leg. van Musschenbroek, 10 November 1873). Christian's (1950) field-

observations indicate, however, a comparatively common occurrence off Halmahera, and Hoogerwerf (1939) found it in hundreds on Goenoeng Api, Banda Sea, where the species breeds.

All authors agree that *Sterna fuscata* is badly in need of revision and that the application of trinomials is purely tentative (cf. Peters, 1934: 338 footnote; Murphy, 1936: 1120; van Bemmél & Hoogerwerf, 1940: 468; Baker, 1951: 161). Note also that Mayr (1941b: 36) calls birds from New Guinea and the Moluccas *S. fuscata serrata* Wagler, whereas van Bemmél (1948) and van Bemmél & Voous (1953) refer Moluccan birds to *S. fuscata nubilosa* Sparrman<sup>1</sup>). Lacking the material and the time for a serious revision, I prefer to leave the subspecific identity of this bird undecided.

**Anous stolidus pileatus** (Scopoli)

♀, 17 April, Pulau Dao (at sea, ca. 3 km from the coast), found dead.

Neither Hellmayr (1914) nor Mayr (1944) listed this species for Timor, but there is a mounted specimen from that island in our collection (1867, leg. von Rosenberg). Hoogerwerf (1939) found *Anous stolidus* breeding in large numbers on Goenoeng Api in the Banda Sea, and it is likely that this species, like the preceding one, is widely distributed and common at sea.

**Treron pompadora psittacea** (Temminck)

♂, 20 March, Danau Bais.

**Ptilinopus regina flavicollis** Bonaparte

♀, 18 March, Danau Bais; ♀, 9 April, Pulau Dao.

**Streptopelia chinensis tigrina** (Temminck)

♂ (?) juv., 15 March, Baä; two unsexed fledgelings, 17 March, Baä; ♂ fledgeling, 27 March, Namo-Dale; an unsexed juvenile, 28 March, Namo-Dale; 4 ♂, 1 ♂ im., 4 ♀, 5-19 April, Pulau Dao.

**Geopelia striata maugei** (Temminck)

♀, 24 March, Baä; ♀, 27 March, Namo-Dale; ♀, 7 April, Ti; ♂ and ♀, 9 April, Dengka.

There has been confusion over the spelling of the subspecific name, which was introduced as *Columba Maugeus* Temminck (1811). The spelling

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<sup>1</sup>) Van Bemmél (in van Bemmél & Hoogerwerf, 1940: 468) mentioned that in applying the name *S. f. nubilosa* to birds from Goenoeng Api, he only followed Peters (1934); however, Peters (mistakenly) omitted the Moluccas as well as the Lesser Sunda Islands from the range of the species.

*maugeus* has been used, amongst others, by Hellmayr (1914), Peters (1937) and Goodwin (1967). Other authors have emended it to *maugea* (cf. Rensch, 1931; Mayr, 1944) and to *maugei*. From the fact that Temminck (1811, Index: xiv; 1813: 363, 490) has without comment corrected the name to *maugei*, it is evident that the spelling *maugeus* was no more than a misprint, so that, under art. 32a (ii) of the Code, Temminck's emendation is valid.

The species described by Temminck (1808-1811) in his first great work, are nearly always misquoted, even by authors who ought to have known better. In the authoritative list of Peters (1937) one finds these forms quoted as from: "Temminck, in Knip, Les Pigeons", meaning that Knip is regarded as the main author of this book. Goodwin (1967) does the same in several places, and in others assumes a shared authorship: "Temminck, in Temminck and Knip, Les Pigeons".

The reason for this confusion was fully explained by Temminck (1815: 640-644), who stated that there were only twelve authentic copies (copies approved by the author) of the book in existence. All other copies had been mutilated and provided with a different title-page by Madame Knip (see also Ronsil, 1957). It is evidently from these mutilated copies that later authors have taken their bibliographical references. On the original title-page Temminck alone appears as author. As the authentic edition is very rare (it would be interesting to now where the twelve copies have gone), I add a reproduction of the title-page of Temminck's own copy of the work (plate II); this copy was purchased for the Rijksmuseum van Natuurlijke Historie from one of Temminck's descendants, in December 1942 (cf. Boschma, 1943).

### ***Chalcophaps indica timorensis* Bonaparte**

♀, 27 March, Namodale; ♂, 5 April, Pulau Dao; ♂, 8 April, Dengka; ♂ and ♀, nestlings, 16 March, Baä; ♀, nestling, 19 March, Namodale.

### ***Aprosmictus jonquillaceus jonquillaceus* (Vieillot)**

♂ and ♀, 31 March, Mok-Dale.

This parrot was hitherto only known from Timor (the nominate race) and Wetar (*A. j. wetterensis*). The specimens from Roti do not appear to differ from material from Timor.

### ***Chrysococcyx lucidus plagosus* (Latham)**

♂, ♀, ?♀, 8, 10 and 11 April, Pulau Dao.

Iris grey-brown, bill black, legs lead colour or slate, slightly tinged with olive. All three specimens are in immature plumage; they are also very poor skins. Wing ♂ 103, ♀ 96, ♀ ? 100 mm.

I owe the identification of these specimens to Mr. S. A. Parker. *C. lucidus plagosus* is known from the islands of Flores, Soemba and Wetar but has not, apparently, been recorded from Timor.

Friedmann (1968: 9) has, with remarkable confidence, claimed that the three species *C. lucidus*, *C. basalis* and *C. malayanus* are: "quite readily distinguished". My own experience leads me to disagree with Friedmann and his optimistic statement is not supported by the facts that even leading ornithologists have confused these species and that many specimens in collections are misidentified or have been re-identified several times by successive revisers.

Contrary to what one has become resigned to, the suppression of the genus *Chalcites*, and its inclusion in *Chrysococcyx*, has been supported by proper arguments (Berger, 1955) and that is the reason why I have — albeit reluctantly — decided to accept the change. Generally speaking I consider that stability and continuity of nomenclature are far more important than subjective opinions on generic limits.

#### **Centropus bengalensis sarasinorum** Stresemann

2 ♀, 31 March, Mok-Dale; ♂, 8 April, Dengka. Wing ♂ 153 mm, ♀, 149, 159 mm.

The females are much smaller than one would expect members of their sex to be; admittedly the smallest specimen shows traces of the juvenile plumage, but even so the birds ought to have been larger. Both are indicated as having contained an ovum of about 1 cm, but I suspect that these specimens are males with developed gonads and that the single large testis of each has been mistaken for an egg: an error easily made when one is not aware that in this species the males have only a single developed testicle.

#### **Collocalia esculenta neglecta** G. R. Gray

Two specimens, ♂ and ♀, 21 March, Namo-Dale.

#### **Halcyon sancta sancta** Vigors & Horsfield

2 ♂, 8 and 9 April, Pulau Dao.

#### **Halcyon chloris chloris** (Boddaert)

♂ ?, 20 March, Danau Bais; 1 ♂, 4 ♀, 8-19 April, Pulau Dao.

**Merops ornatus** Latham

5 ♂, 1 ♀, 3-19 April, Pulau Dao; ♂, 11 April, Baä.

**Hirundo tahitica** subsp.

An unsexed specimen, 3 April, Pulau Dao.

This bird is immature; the wing-length is only 96 mm. I believe that, contrary to current usage, the populations of this swallow inhabiting the Lesser Sunda Islands should be included in the subspecies *H. t. javanica* Sparrman, instead of in *H. t. frontalis* Quoy & Gaimard, and hope to present the evidence for this elsewhere. The one specimen from Roti, however, being immature and unfullgrown, cannot be identified subspecifically.

**Anthus novaeseelandiae medius** Wallace

5 ♀, one unsexed fledgling, 10-19 April, Pulau Dao.

**Coracina novaehollandiae personata** (S. Müller)

Two nestlings (♂ and unsexed), 26 March, Namo-Dale.

**Coracina novaehollandiae** subsp.

♀, 19 April, Pulau Dao.

Wing 176, tail (very worn) 130, tarsus 27, entire culmen 29, exposed culmen 23 mm.

Presumably a migrant from Australia. This bird is immature as proved by its whitish throat, with indistinct grey spots, and its faintly barred breast, but even so it is remarkably small. On several previous occasions I have discussed these small birds, wintering on the islands north of Australia, but I have never been able to arrive at a definite opinion regarding their subspecific identity (cf. Mees, 1961b, 1964a, 1964b).

**Lalage sueurii sueurii** (Vieillot)

An unsexed fledgling, 21 March, Namo-Dale; ♀, 5 April, Dengka; ♂, 8 April, Pulau Dao.

**Saxicola caprata pyrrhonota** (Vieillot)

*Pratincola caprata*; ten Kate (1894: 211).

♂, 20 March, Dano Bais; 3 ♂, 1 ♀, 3-18 April, Pulau Dao.

Wing ♂ 67½, 69, 71, 72 mm, ♀ 68 mm.

The female and two females from Timor, are rufous brown below, without spots; females from Java with which I compared them are colder brown on these parts and usually (not always) more or less spotted. It is clear therefore that the specimens from Roti belong to the race *pyrrhonota* and not to *S. c. fruticola*, which ranges from Java to Alor.

Ten Kate's specimen was received in October 1892; it can no longer be found and may not have been retained.

### ***Saxicola gutturalis* subsp.**

*Oreicola melanoleuca*; Büttikofer (1892a: 204); ten Kate (1894: 211); van Oort (1907: 238).

♀, 1891, Roti (TK); ♀ (skeleton), 1891, Roti (TK).

This species is known from the islands of Timor (the nominate race), Samao (*S. gutturalis luctuosa* (Bonaparte)), and Roti. The occurrence on Roti, although published three times by different authors as quoted above, has been overlooked in recent years (for example Ripley, 1964: 115). Hellmayr (1914: 16-20), under the name *Oreicola melanoleuca*, has discussed the two races and indicated the characters by which they can be distinguished. Nobody since Hellmayr appears to have studied the species and examination of our material (7 ♂, 3 ♂ im., 2 ♀ from Timor, 1 ♀ from Roti, and 2 ♂, 1 ♂ im. and 1 ♀ from Samao) leads me to differ in several respects from Hellmayr's conclusions.

As Hellmayr pointed out, the difference between the males of the two forms is in the amount of white in the tail: *S. g. gutturalis* has a considerable albeit variable quantity of white on the basal part of the rectrices, whereas in *S. g. luctuosa* the white is very much reduced in extent. The fact that our specimens, the two examined by Hellmayr in the British Museum, and the bird studied by Salvadori (1890) all show this reduction of white, shows that it is a good subspecific character and not a matter of individual variation.

I agree with Hellmayr and Büttikofer (1891) that the white supercilium is not a good subspecific character as it varies in our specimens from Timor between being well-developed and conspicuous, and being entirely absent.

Having described the differences between the adult male birds of both races very clearly, Hellmayr proceeds to describe the females. There is no need to cite the whole descriptions, but the most conspicuous differences stressed by Hellmayr are that females of the nominate race have the: "Oberschwanzdecken und Schwanzfedern tiefschwarz, die Basis der vier äusseren Paare, wie beim ♂ ad. in grosser Ausdehnung weiss", whereas



in the female of the race *luctuosa*: "die Oberschwanzdecken sinds keineswegs schwarz, sondern noch lebhafter rotbraun als der Rücken; die Steuerfedern zimtrotbraun (ohne jedes Weiss an der Basis), die mittleren schwarzbraun mit rotbraunen Säumen".

date	locality	collector	wing	tail	tarsus	entire culmen	exposed culmen
ad. April 1829	Timor	S. Müller	77	63	25½	16½	12
" May 1829	Nassi Koo, Timor	"	74	61	24½	17	12¾
" 1829	Mikonoffo (?), Timor	"	81	71	26½	17	13
" "	Timor	"	78	64	26	18	13 <sup>1)</sup>
" "	"	"	80	68	26	16	12 <sup>1)</sup>
" —	"	—	75	63	26½	16	12 <sup>2)</sup>
" 1880	"	v. Lansberge	77	64	26	16½	12¾
" March 1829	Samao	S. Müller	76	65	26	17	13 <sup>3)</sup>
" 1891	"	ten Kate	76	66	25	17	13
im. March 1829	Timor	S. Müller	71	60½	24	16½	13
" 1828/1829	"	"	72	64	26	16½	12½
" 1880	"	v. Lansberge	76	63	25½	15¾	12
" July 1891	Samao	ten Kate	73	63	24	16	12
1828/1829	Timor	S. Müller	77½	63+	25	17¾	13¾
July 1891	Koepang, Timor	ten Kate	75	64	25½	17½	12½
March 1829	Samao	S. Müller	73	63	24	17	12½
1891	Roti	ten Kate	74	63	26	16½	13

1) Syntype of *Saxicola melanoleuca* Bonaparte, 1850.

2) Holotype of *Lalage nycthemera* Bonaparte, 1850.

3) Holotype of *Saxicola luctuosa* Bonaparte, 1850.

There are therefore three types of plumage: black-and-white adult males; brown birds with black tails, and brown birds with rufous brown tails. Hellmayr, as quoted above, regarded all the brown birds as females, and as his two specimens from Timor had black tails, and the one from Samao a rufous brown tail, he believed this difference to be of subspecific value.

Previously, however, Büttikofer (1891) had suggested that a bird in the brown plumage with a black tail was not a female but: "a young male in the transitional stage of plumage", and the material now in our collection

amply confirms this as we have brown birds with rufous brown tails and brown birds with black tails from Timor as well as from Samoa. Incidentally, Hellmayr appears to have overlooked that the brown bird with black tail described by Büttikofer came from Samoa.

It appears therefore that, contrary to Hellmayr, there is no difference between the females of both races (there may exist slight differences in nuance, which cannot be ascertained in our old material). This means also that the female from Roti cannot be subspecifically identified: it could belong to either race, and may even represent a third, undescribed race, as its underparts are a little whiter than those of our other females.

### ***Cisticola juncidis fuscicapilla* Wallace**

An unsexed fledgling, 22 March, Namo-Dale; two unsexed fledglings, 23 March, Namo-Dale; ♀ ad., tail missing, 31 March, Namo-Dale.

The young bird from 22 March is on the underparts, especially throat and breast, of a pale but bright yellow; in the other two fledglings, although they are of the same age, there is no trace of yellow on the underparts, the throats being pure white (cf. Rensch, 1931a: 576).

### ***Gerygone inornata inornata* Wallace**

Two small unsexed nestlings, 15 March, Baä; ♂ ad., 26 March, Baä; ♂ im. and sex? im., 26 March, Namo-Dale; ♀ ad., 31 March, Namo-Dale.

The immature birds are distinguished by their pale yellow underparts, a colour entirely lacking in the adult birds. The nestlings have already the normal brown plumage on the upperparts, but especially on the sides of the head, on the nape, and above the base of the tail, a number of white downy feathers stick out, giving these birds a most peculiar appearance.

All skins are in poor condition and as our comparative material from surrounding islands is old and very inadequate, their subspecific identification is based on geographical probability.

### ***Rhipidura rufiventris tenkatei* Büttikofer**

*Rhipidura tenkatei* Büttikofer (1892a: 205); Büttikofer (1892b: 91); ten Kate (1894: 211).

*Rhipidura rufiventris tenkatei*; Hellmayr (1914: 31).

♀, 1891, Roti (TK), holotype and unicum.

The bird differs conspicuously from *R. r. rufiventris* occurring on Timor in that chin, throat and breast are slate with broad white stripes; in this it resembles *R. r. bouruensis* from Boeroe. All other forms of the region

have a purely white chin and throat, clearly demarcated from the grey breast. On the other hand, *R. r. tenkatei* resembles *R. r. rufiventris* and differs from *R. r. bouruensis* in that the outer rectrices have conspicuously larger pale ends. This is a very well-marked subspecies. Our register indicates that in a later consignment (October 1892) another four specimens were received from ten Kate, but these were in spirits and have apparently been thrown away, so that the type remains unique. It may have been collected on 22/25 August 1891, near the village Namo-Dale, but ten Kate (1894) is not quite clear about this, and he describes the surroundings of Namo-Dale as arid and barren during his visit, whereas I would expect *R. r. tenkatei* to inhabit woodland. It is a pity that Verheijen failed to find this interesting form, on present evidence the only endemic element in the avifauna of Roti.

I take this opportunity to comment on the subspecies of *R. rufiventris* inhabiting the smaller islands east of Timor. The names *R. Hoedti* Büttikofer (1892b), based on a bird from Leti, and *R. buttikoferi* Sharpe (1892), based on a bird from Damar. Finsch (1901: 256) considered these the same; he used the name *R. büttikoferi* and placed *R. hoedti* in its synonymy. In this Finsch has been followed by later authors (Hartert, 1904). However, Büttikofer's description was published in October 1892, and Sharpe's description on 31 December 1892, so that the former has clear priority. Note also that Sharpe gave a full bibliographical reference to Büttikofer's paper, which clearly was in his hands when he drew up the description of *R. büttikoferi*.

If, therefore, *R. hoedti* and *R. büttikoferi* are the same, the name should be *Rhipidura rufiventris hoedti* Büttikofer. Hartert (1911: 165), however, considered them different, so that both names would be valid.

### ***Rhipidura rufifrons semicollaris* S. Müller**

♂, 14 March, Baä; 3 ♂, 1 ♀, 5-17 April, Pulau Dao.

The female (14 April) is noted as having had a nest with young; the males had large gonads.

### ***Myiagra ruficollis ruficollis* (Vieillot)**

♀, 22 March, Mok-Dale, on nest.

### ***Dicaeum maugei maugei* Lesson**

*Dicaeum mackloti*; Büttikofer (1892a: 205); ten Kate (1894: 211).  
An unsexed specimen, 1891, Roti (TK).

The rump of this bird is orange rather than red in colour, a fact already

commented upon by Büttikofer, who ascribed it to discoloration as a result of preservation in spirits. No doubt he was right. As the islands of Timor, Samao and Sawoe are all inhabited by the nominate race, it is unlikely that Roti would have a different form.

***Zosterops citrinella citrinella* Bonaparte**

*Zosterops neglecta*; Finsch (1901a: 16-17, Rotti).

*Zosterops chloris citrinella*; Mees (1961a: 29, Rotti).

An unsexed specimen, 1891, Roti (TK). A series of 20 ♂, 4 ♀, 4? from Pulau Dao, Namo-Dale, Danau Bais and Baä.

Mayr (1944) was the first to unite a large number of Indo-Australian forms of *Zosterops* to one species (*Z. lutea*) and I followed him in treating *Z. chloris* and *Z. citrinella* as conspecific, so that birds from Timor received the trinomen *Z. chloris citrinella* (Mees, 1961a). Recently, however, I changed my mind and re-instated *Z. citrinella* as a separate species, with three subspecies (Mees, 1969: 276, 277, 305). The correct name for the nominate race from Timor, Roti, Sawoe and Soemba is now *Z. citrinella citrinella*.

***Lichmera indistincta limbata* (S. Müller)**

A series of 8 ♂, 12 ♀, one ?, 14 March-17 April, from Namo-Dale and Pulau Dao; an unsexed nestling, 18 April, Pulau Dao.

***Philemon buceroides buceroides* (Swainson)**

♀, 15 March, Mok-Dale; ♀, 18 March, Baä; ♂ nestling, 27 March, Namo-Dale; sex?, 24 March, Baä; ♂ nestling, 31 March, Namo-Dale; ♀, 7 April, Ti.

The nominate race of this species is otherwise known from Timor, Samao and Sawoe, and has recently, and most unexpectedly, been discovered in Arnhem Land (Parker, 1971). There are several other subspecies on the Lesser Sunda Islands.

***Amandava amandava flavidiventris* (Wallace)**

♂, ♀, 17 March, Baä; ♀ (breeding), 21 March, Namo-Dale; ♂, 22 March, Namo-Dale.

***Poephila (Taeniopygia) guttata guttata* (Vieillot)**

3 ♂ ad., 3 ♀ ad., 4 ♂ im., and two immatures of uncertain sex, 19 March-18 April, from Pulau Dao (8), Mok-Dale (1) and Baä (1).

**Lonchura quincolor** (Vieillot)

♂, 20 March, Namo-Dale; 3 ♀, 21 March, Namo-Dale; sex? (collected on nest with eggs), 24 March, Baä; 2 ♀, 3 April, Baä.

**Lonchura pallida pallida** (Wallace)

♀, 10 April, Pulau Dao.

This species is known from the Lesser Sunda Islands from Lombok to Alor, from Sawoe, and from some of the small islands east of Timor, but has not been recorded from Timor itself.

**Oriolus melanotis melanotis** (Bonaparte)

One unsexed specimen (= ♂ ad.), 1891, Roti (TK); ♀ juv., 25 March, Baä; ♂, 27 March, Namo-Dale; ♀ ad., 28 March, Mok-Dale; ♀, 29 March, Namo-Dale.

Unfeathered parts: iris bloodred (♂), red to reddish brown (♀) and brown-grey (♀ juv.), bill light reddish brown (♂), blackish brown (♀), and brown, the mandible transparent reddish (♀ juv.), legs olive slate (♂), dark slate (♀), yellowish slate (♀ juv.).

The three adult birds are in full moult (primaries and rectrices).

For the use of the name *O. melanotis* for this species rather than *O. viridifuscus*, under which name it has been recorded in recent literature, cf. Mees (1965: 194).

**Sphecotheres viridis** Vieillot

*Sphecotheres viridis*; ten Kate (1894: 211).

An unsexed specimen (= ♂), 1891, Roti (TK).

This bird is a little brighter below and on the wings than our specimens from Timor, but all these are even older than the specimen from Roti (mostly leg. S. Müller, 1829) and are mounted. Moreover Hellmayr (1914: 45) has mentioned that males are rather variable. The occurrence of the species on Roti was recorded by ten Kate (1894), but appears to have been overlooked by all later authors, so that in ornithological literature it was thought to be confined to Timor.

**Artamus leucorhynchus albiventer** (Lesson)

♀, 3 April, Pulau Dao.

The bird shows moult in its primaries (almost completed), and rectrices. The wing-length (to the tip of the longest, second, primary, which is old) is 132 mm, entire culmen 26, exposed culmen 21 mm.

*Artamus leucorhynchus* is the most widely distributed member of its genus, ranging throughout the Indo-Australian islands, from the Andamans and the Philippines to northern and eastern Australia, the New Hebrides and Fiji. Apart from a few well-marked peripheral subspecies which are much darker, geographical variation in this huge range is slight, consisting mainly of average differences in size and bill-length. Many subspecies have been based on these characters, several of which are probably insufficiently differentiated for recognition. The latest revision of the species was by Stresemann (1913), now more than sixty years ago. Stresemann used the name *A. l. celebensis* for birds from the Lesser Sunda Islands, but Mayr (1944) demonstrated that there is a difference in size between birds from Celebes and Timor, and that moreover the name *Ocypterus albiventer* Lesson, 1830, given to a bird from Timor, has priority over *Artamus leucorhynchus* var. *celebensis* Brüggemann, 1876, given to birds from Celebes. The species requires a serious revision, the material for which is certainly available in the museums of the world, but as the name *O. albiventer* is older than any other one given in the species, except the nominate race from the Philippines, there is little doubt that the specimen from Roti is correctly called by it. I have compared birds from Roti and Timor with Australian specimens, which are equally small, but found that the latter (*Artamus leucorhynchus leucopygialis* Gould, 1842) are distinguished by their smaller bills. Stresemann (1913) stressed differences in colour between the various populations, but there is a lot of variation in this character: the feathers of well-made skins are powdery and look lighter than those of poorly prepared and much-handled skins.

#### SAMENVATTING

Het eiland Roti (oppervlakte 1220 km<sup>2</sup>), gelegen ten zuid-westen van Timor en van dit grotere eiland gescheiden door de 12 km brede Straat Roti, was tot voor kort ornithologisch nog nauwelijks onderzocht. De anthropoloog Dr. H. F. C. ten Kate schoot gedurende een bezoek van een kleine drie weken in Augustus en September 1891 wat vogels, die naar het Rijksmuseum van Natuurlijke Historie werden gezonden, en daar bleef het bij. Ten Kate verzamelde in totaal slechts 14 soorten vogels; daarbij was echter een bijzondere interessante nieuwe waaierstaart-vliegenvanger: *Rhipidura rufiventris tenkatei*.

Toen derhalve Pater J. A. J. Verheijen in de eerste helft van 1969 Roti en de voor de westkust gelegen eilandjes Dao en Doö bezocht, betrad hij een ornithologisch vrijwel onbekend gebied. Het is dan ook geen wonder dat zijn waarnemingen (die hij zelf publiceert) en verzamelingen de avi-

faunalijs van Roti sterk hebben uitgebreid. In dit artikel wordt alleen het verzamelde materiaal behandeld, dit bestaat uit 45 soorten (nauwkeurig gezegd 44 soorten, waarvan één wordt vertegenwoordigd door twee sterk verschillende rassen). Tien van de dertien of veertien door ten Kate gezonden soorten werden niet door Verheijen verzameld, wat voor Roti (met Pulau Dao en Doô) een totaal geeft van 55 soorten.

Enige der verzamelde soorten worden nader besproken. De Slangenarend *Circaetus gallicus* staat te boek als een broedvogel van het Mediterrane gebied, Oost-Europa, Zuid-West en Midden-Azië. Reeds in 1829 verzamelde S. Müller echter een exemplaar op Timor, wat gevolgd werd door vermeldingen van Lombok, Flores en Soembawa. Ter verklaring van dit voorkomen gold dat de Kleine Soenda Eilanden de winterkwartieren zouden zijn van een in Oost-Azië broedende populatie. Het van Pater Verheijen ontvangen exemplaar werd aanleiding tot een critisch onderzoek van de beschikbare gegevens, hetgeen leidde tot de conclusie dat de Slangenarend broedvogel en standvogel is op de Kleine Soenda Eilanden.

Van enkele andere soorten, b.v. *Egretta intermedia*, *Saxicola gutturalis*, *Rhipidura rufiventris* en *Artamus leucorhynchus* worden problemen van nomenclatuur en geographische variatie besproken.

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Zoölogisch Insulindefonds.



Juvenile individual of *Circaetus gallicus*. Ruteng, Flores, 3 October 1971 (photographs by Fr. Jos Kližan).

# HISTOIRE NATURELLE GÉNÉRALE DES PIGEONS;

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AVEC FIGURES EN COULEURS,  
PEINTES PAR MADEMOISELLE PAULINE DE COURCELLES,  
GRAVÉES, IMPRIMÉES ET RETOUCHÉES SOUS SA DIRECTION.

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PARIS,  
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1808.

Original title-page of the "Histoire Naturelle des Pigeons", reduced.