The avifauna of Flores (Lesser Sunda Islands)

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The avifauna of the island of Flores (Lesser Sunda Islands) is reviewed. Introductory sections, which include a chapter on the history of ornithological discovery, are followed by the main part, a systematic account in which each species and subspecies known from Flores is treated separately. A discussion of the zoogeography, a gazetteer, a list of references and an index complete the volume. At present 214 forms (210 species) are accepted as having been reliably recorded. Of these, ca. 160 are, or may be assumed to be, residents, and of ca. 100 the eggs have been collected and are described. The balance consists of visiting sea and freshwater birds, migrants from the North and migrants from the South. It is likely that few additions remain to be made to the list of residents, but migrants from the North and visiting seabirds have obviously been under-recorded, and in these two categories another 20 to 25 species are to be expected as regular visitors. *Lonchura punctulata insulicola* subspec. nov. is described from Mauritius, Réunion and Mahé (Seychelles Is.).

Contents

1. Introduction

That the Lesser Sunda Islands, forming a connecting link between the strikingly different faunas of Asia and Australia, belong to the zoogeographically most fascinating regions of the world, is no news. Important zoogeographical studies have been based on their avifauna (particularly Rensch, 1928d, 1930, 1936; Stresemann, 1939; Mayr, 1944a, 1944b). Yet, in spite of an early start, and of their acknowledged crucial

importance for an understanding of the zoogeographical relationship between Asia and Australia, most islands are at present no more than moderately well-known ornithologically.

Collections have been made during (usually short) visits by professional collectors, heavily relying on native helpers, rather than by ornithologists, and much of the collecting has been rather haphazard.

For Flores, this situation has now been changed through the efforts of two long-time residents, the Fathers J.A.J. Verheijen, SVD, and E. Schmutz, SVD, who, during their stay, devoted much time to ornithological investigations. It has been my privilege to receive and study the collections resulting from their activities, and the paper here presented is the outcome of my involvement.

This paper is far less comprehensive than I should have liked it to be. Many species, dealt with only superficially, require a revision before their zoogeographical significance in the fauna can be evaluated properly, but any work is a compromise between time and means available, and the desired result.

As in the preparation of their admirable work on the birds of Wallacea, White & Bruce (1986) have had free access to all the material and notes brought together by the Fathers Verheijen and Schmutz, one might wonder, and indeed I have wondered, whether after the appearance of their publication, there was still any need, or even justification, for a separate paper on Flores. However, it will be evident that a paper exclusively on the birds of Flores, can go into much greater detail than a work covering the whole of Wallacea, and therefore deserves publication. In addition, there was the obligation to the collectors, who were entitled to see the published result of all their work. Finally, it seems worth publishing these collections for their own sake. Complaints have repeatedly been made, that collections present in the Leiden museum remained unpublished. The truth is that, for the size and importance of its collections, the museum has always been understaffed and that the complaint was justified. Catalogues of the collections were begun by Schlegel, and anew by Finsch, but they never got very far. To save the Flores collections made by the Fathers from oblivion, a paper was evidently required.

Authors of faunistic and systematic works aspiring to scientific accuracy are increasingly confronted with the question of what to do with field observations. At present the ornithologically more sophisticated countries even have panels of specialists sitting in judgement over observations made by others, at best a risky matter. There is a danger here of taking ourselves too seriously. When, however, birdwatchers and 'ticklisters' from the above-mentioned countries, where they would not hesitate to subject their unusual observations to the whole rigmarole, travel abroad, they suddenly shed this serious approach and seem to believe that a cross on their pre-printed ticklist should be all the documentation required to have their observations accepted. Thus the acceptance of such records, for which there is no tangible evidence, becomes guesswork or a matter of faith. When my interest in the avifauna began, in the mid-nineteen sixties, the problem did not yet exist as the Lesser Sunda Islands, even Bali, were well outside the range of ornithotourism, which at that time was only just beginning to develop. This situation is now changing rapidly.

A comparatively recent development, of which the region has not remained entirely free, is that of multi-author papers, combining observations made by different observers

at different times. Superficially this may seem rational, but frequently it is impossible to distil from these texts, who is responsible for certain records and observations, so that in practice these are anonymous. The custom, also becoming popular, of referring to unpublished notes and reports, irritates: one tries to check a statement made in the text with a reference, and finds it to be based on unpublished notes, and therefore of no help at all.

Another aspect has to be mentioned: several recent visits to the Lesser Sunda Islands have been made under the auspices of conservation organizations. Nothing wrong with that, but in a few instances I got from the text of their reports the impression that actually bird material had been collected, but is not clearly mentioned, or glossed over (as conflicting with the avowed purpose of these visits?). This means that important documentation is withheld: a report should clearly state what has been collected, and in which institution such material is held, so that other students will know where to go for further information.

Originally I had not intended to include in this report any species not based on collected material, but gradually this has been relaxed, with the inclusion of *Fregata ariel, Pandion haliaetus, Hieraaetus kieneri* and *Phalaropus lobatus.* This relaxation has also induced me to list some (not all) of my own field observations made on Sumba and Sumbawa, as far as they are relevant to the avifauna and understanding of the zoogeographical position of Flores.

2. Acknowledgements

From the introduction, my debt to Fathers Verheijen and Schmutz will be evident. It is on their collections, and often stimulating correspondence, that this paper has been based.

Help with information about specimens in their care, loans, etc., was received from: D. Amadon and Mrs M.K. LeCroy (American Museum of Natural History, New York: AMNH); G. Cowles, M. Walters (British Museum (Natural History), Tring: BM); R.W.R.J. Dekker (Rijksmuseum van Natuurlijke Historie, Leiden: RMNH); S. Eck (Staatliches Museum für Tierkunde, Dresden, MTD); K. Größler (Leipzig); J.T. Marshall, Jr. (National Fish and Wildlife Laboratory, Washington, D.C.); the late S.A. Parker (South Australian Museum, Adelaide: SAM); R.A. Paynter, Jr. (Museum of Comparative Zoology, Cambridge, Mass.: MCZ); C.S. Roselaar (Zoölogisch Museum, Amsterdam: ZMA); H. Schifter (Naturhistorisches Museum, Wien, MV); R. Schodde (Australian National Collection, Canberra: ANC, CSIRO); S. Somadikarta (Museum Zoologicum Bogoriense, Bogor: MZB); B. Stephan (Zoologisches Museum, Berlin, ZMB); E. Sutter (Naturhistorisches Museum, Basel: NMB); C. Voisin (Muséum National d'Histoire Naturelle, Paris, MHNP). Mr T.J.G.M. van Oyen (RMNH) helped with the weighing of egg-shells on an electric balance. Acknowledgements are also due to A. van Haasteren (Leiden University) and H.J. van Grouw (RMNH) for photographing the eggs and to E.J. Bosch (RMNH) for drawing the maps.

As also mentioned in the Postscript, without considerable assistance from my former colleague, J. van der Land, this paper could not have been completed. In recent years, my old friend A.C. van Bruggen helped greatly in keeping things moving. C.R. Trainor, a field worker in the Lesser Sunda Islands (at present in Timor-Leste), recipient

of a copy of the manuscript, encouraged its publication, writing stimulating letters both to me and to Leiden, thus helping to push through bottlenecks.

With sadness I must mention that three more of the persons acknowledged above (Amadon, Paynter, Sutter) have passed away. I gratefully remember their friendship and help, not only in the preparation of the present paper, but on many previous occasions.

3. Topography

The island of Flores derives its name from its easternmost cape, which was named by the Portuguese, the first European navigators to reach the Lesser Sunda Islands, Cabo de Flores. The name has stuck and has been extended to include the whole island, although the name of the cape itself has in later years been translated to Tandjong Boenga.

Until past the middle of the 19th century, Portugal maintained some posts on the eastern and southern coasts of Flores, but by the treaty of Lisbon, which was ratified on 20 April 1859, these posts (Paga, Sikka, and Larantoeka with the fort Posto), were transferred to the Netherlands, by which the whole island came, nominally, under Dutch sovereignty. A garrison was established in Larantoeka. It is perhaps worth mention that the colonial yoke was not very heavy for at least another forty years: inland tribes continued to raid the coastal villages. When in July 1896, Everett arrived in Endeh, there was even shooting down the streets, so that he was unable to use the place as a base for exploration of the interior, as he had planned. In 1907, during a conflict between coastal and mountain tribes, the whole of Endeh was burned down. This finally led to intervention by the Netherlands Indian Government, and a stronger colonial administration.

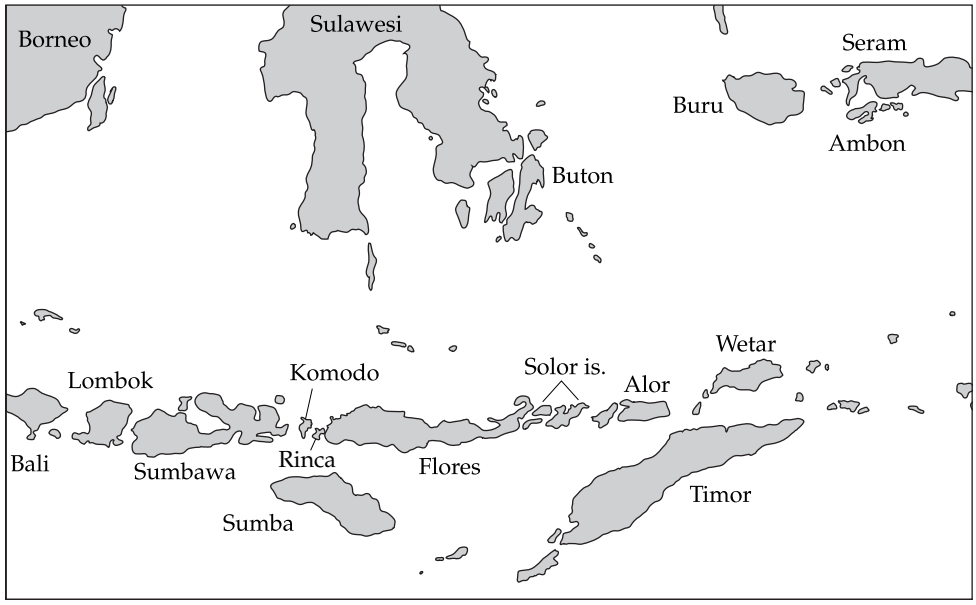

Fig. 1. Flores and surrounding islands.

Flores is situated between 119°48′ (Tg. Rasé) and 123°1′30″ (coast south of Tg. Matandoi) E., and between 8°4′ (Toro Kopondai or Floreshoofd) and 8°58′ (Ngaloe Nageh, south coast of Ngada) S., its greatest length is ca. 354 km, its axis almost West-East (fig. 1). The shape of the island is somewhat bizarre, perhaps best likened to the body of a scorpion, with its heaviest, broadest part in the west, tapering eastwards to a tail, terminating in a sting, curved upwards, at the eastern end. In the western part (Manggarai), the width is over 60 km, but in the middle (Endeh), it is no more than 20 km, and farther east, at the narrowest part (Maumere) only ca. 12 km. The total (flat) surface area is ca. 15,175 km^2. The country is strongly mountainous: extensive highlands, and the highest mountains, are found in the broad western part (Manggarai), where several peaks attain over 2000 m, the highest one ca. 2400 m; in the middle and east the mountains may be lower but are by no means negligible. The famous coloured crater lakes of Geli-Moetoe are in the eastern part of the island, north-east of Endeh.

In the mountains the rainfall is high (fig. 2), especially in Manggarai: in the mountains south and west of Ruteng it averages over 4000 mm a year, and in the mountains farther eastwards it is still over 3000 mm; this contrasts with some of the coastal lowlands, especially along the north-west coast, where the annual average is less than 500 mm. The gradient is very steep here, for the mountains with the highest rainfall are little more than 25 km away.

4. Adjacent smaller islands

The islands of Endeh, in the Bay of Endeh off the south coast (visited by Rensch), Palué or Rusa Radja in the Flores Sea north of Flores (visited by Weber and Verheijen), and Groot Bastaard or P. Besar, off the north coast of Flores (visited by Ten Kate), have always and quite correctly been included with Flores, ornithologically, as they are in this paper.

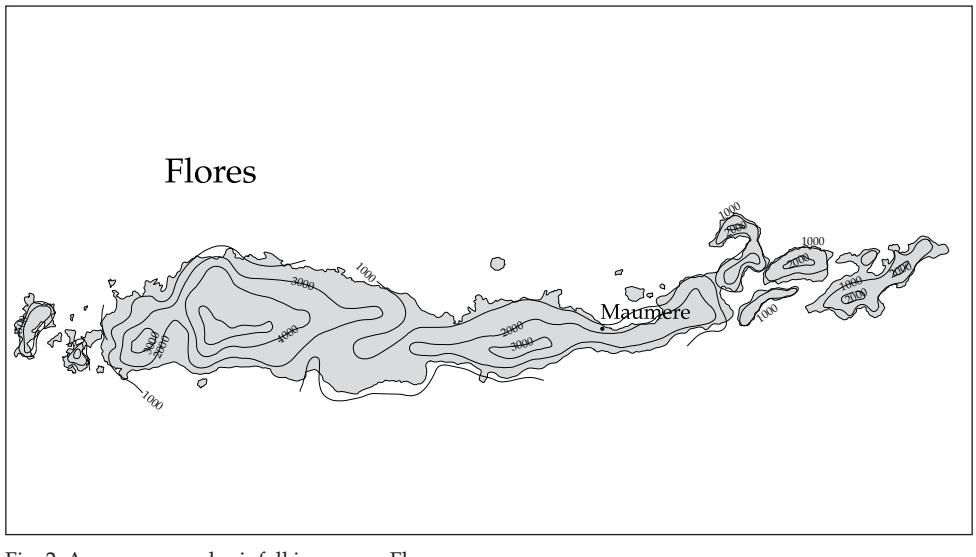

Fig. 2. Average annual rainfall in mm on Flores.

It would make sense, geographically, to include the smaller islands to the west, viz., Rintja, Padar and Komodo, with Flores. Strait Molo, separating Rintja from mainland Flores, is at its narrowest part less than a kilometer wide; the strait between Rintja and Padar, perhaps 2 km, and Strait Linta, separating Komodo from Rintja and Padar, about 5 km. Strait Sape, on the other hand, which separates Komodo from eastern Sumbawa, is much wider and deeper, about 20 km, or 15 + 5 km when measured through the small island of Kelapa.

The avifauna of these islands has become known through Hoogerwerf (1954b, 1956), who visited all three of them in June 1953. He claimed that the total number of species observed on the three islands combined, was 69. An unrecorded, but probably fairly large, proportion of these were collected. It is a pity that Hoogerwerf's published paper, through its ecological arrangement (according to habitat), rather than systematic arrangement, makes it difficult to extract exact information from it, and has already caused confusion. Moreover, as pointed out on a later page, some species included were almost certainly misidentified. This would leave about 65 species for the three islands. Especially because of doubt of some of them, a list of the collections made, split out to island, would be useful. Hoogerwerf (1966) wrote a special paper on a few specimens from Komodo and Rintja, belonging to three species (*Accipiter novaehollandiae, Coracina novaehollandiae, Philemon buceroides*), showing that a further study of the avifauna of these islands would be not without interest. Pfeffer stayed some weeks on Rintja, and visited Komodo; on Rintja he collected seven species of birds, enumerated in the historical section (p. 16), one of which (*Stiltia isabella*) was not recorded by Hoogerwerf.

The eastern end of Flores is in equally close contact with adjacent islands. Opposite Larantoeka, across the Flores Strait, Adonara is at most little more than a kilometer away, and farther southwards, the distance from Solor is less than 5 km. Ornithologically, Adonara and Solor are very inadequately known. Semmelink visited Adonara early in 1862 and collected one bird (*Pitta elegans*), Colfs in August 1880 at least two (*Arenaria interpres, Terpsiphone paradisi*), and Ten Kate spent a few days on Adonara and Solor in May 1891. On Adonara, Ten Kate collected *Halcyon chloris, Pachycephala fulvotincta, Anthreptes malacensis* (cf. Büttikofer, 1892), and *Oriolus chinensis* (cf. p. 12). On his way to or from Flores, Allen must have landed on Solor, where he obtained a syntype of *Treron floris* and the holotype of *Gerygone sulphurea*. I have not investigated what else he may have collected on Solor: scanning of the pages of the "Catalogue of Birds" might yield a few more species. As mentioned above, Ten Kate visited Solor, but I am not aware that he collected birds there.

From the western islands, Hoogerwerf (1954b, 1956) recorded eight species which are not known from Flores, viz.:

Falco severus: island not specified
Charadrius peronii: Komodo and Padar; on Rintja heard but not seen; a specimen was collected
Numenius arquata: Padar
Tringa totanus: Padar
Ducula bicolor (with a query, see below)
Caloenas nicobarica: Komodo
Cypsiurus parvus (= *balasiensis*): island not specified
Dendrocopos macei: island not specified

The record of *Ducula bicolor* was, as Hoogerwerf (1954b: 130) clearly stated, based on an observation by the photographer F. Huysmans, a non-ornithologist, who saw a

flock of white birds with black wing-tips come from the sea and disappear into a valley. Hoogerwerf (who was obviously responsible for the identification) commented that the occurrence of the species was of course very likely, but stressed the point that he himself had not seen it. He mentioned *Ducula bicolor* again, with a query, but this time without explanatory text, in his following publication (Hoogerwerf, 1956: 111). I consider the evidence too vague for acceptance.

Besides *Ducula bicolor*, the identification of at least three other species on the above list may be questioned: *Falco severus, Cypsiurus balasiensis* and *Dendrocopos macei* have never before been recorded from the Lesser Sunda Islands east of Bali. The casual way in which Hoogerwerf mentions them, shows a complete lack of awareness that observations of these species were in any way unusual. In the case of *Falco severus*, one can think of confusion with *F. longipennis*, not mentioned by Hoogerwerf. In the case of *Cypsiurus balasiensis*, it may be recalled that its occurrence in Sulawesi has recently been established (Escott & Holmes, 1980): very likely a recent extension of its range. The same could be happening in the Lesser Sunda Islands, for, as Hoogerwerf said, there is no lack of suitable nesting trees. Hoogerwerf's record of *Caloenas nicobarica* from Komodo is acceptable, but the listing of Padar and Rintja by White & Bruce (1986: 192-193) is not.

Hoogerwerf was surprised by the number of migrant waders from the Northern Hemisphere which he found still present in June. He observed *Pluvialis fulva, Charadrius leschenaulti, Numenius arquata, Numenius phaeopus, Tringa hypoleucos, Tringa totanus*.

With the knowledge in mind that Hoogerwerf has made misidentifications, one might legitimately wonder about the validity of the June records of these waders. Restricting myself to the two species not yet recorded from Flores, I have tried to find how likely it is that they still occur in their winter quarters in June.

Material from the Archipelago in the RMNH collection, split out over the months, is given in the table below, which shows that June records of neither species are exceptional. When Junge (1936: 18) discussed the two June specimens of *Tringa totanus* from Simalur, he was worried by their dates, and by their winter plumage, and speculated that an error in labelling might have been made. This is very unlikely, because both have original labels. In the light of present knowledge, there is no reason to doubt the June dates. One other point has, however, to be mentioned. Whereas in the western part of the Archipelago, *Numenius arquata* is a more common winter visitor than *N. madagascariensis* (cf. Hoogerwerf, 1948b: 54), farther east, east of the Sunda Shelf, the situation is reversed to the extent that there is only a single specimen record of *N. arquata* from the whole of Wallacea (the specimen from Halmahera, listed above: ♂, 20.xi.1861, Kaou, leg. Bernstein, RMNH cat. no. 17; cf. Schlegel, 1864c: 89, where it is cat. no. 29). One might therefore think of confusion between these two, but Hoogerwerf certainly knew the difference and moreover, in his first publication (Hoogerwerf, 1954b: 145) he states expressly that the bird he had seen belonged to the large white-rumped species. Further support is provided by recent field-observations from Timor (Andrew, 1986). Records from Australia (Darwin and Point Peron) have not found general acceptance (cf. Blakers et al., 1984: 656; Higgins & Davies, 1996: 116-117), and a sight record from New Guinea (Van den Assem, 1960) has been rightly ignored in later literature: it was almost certainly due to confusion with *N. madagascariensis*.

Material of *Numenius arquata* and *Tringa totanus* from the archipelago in the RMNH collection, arranged by month.

	s.d.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Numenius arquata													
Sumatra	1	–	–	–	–	–	–	–	–	–	4	–	–
Bangka	1	1	–	–	–	–	–	–	–	1	–	–	–
Borneo	2	–	–	–	–	–	–	–	–	–	–	–	–
Java	6	–	3	–	3	–	1	1	2	5	–	6	1
Halmahera	–	–	–	–	–	–	–	–	–	–	–	1	–
Tringa totanus													
Sri Lanka	3	–	1	–	–	–	–	–	–	–	–	–	–
Sumatra	1	–	–	–	–	–	–	–	–	–	4	–	3
Simalur	–	–	–	–	–	–	2	–	–	3	–	–	–
Bangka	–	–	–	–	–	–	–	–	–	1	2	–	–
Borneo	2	–	–	–	–	–	–	–	1	–	–	–	–
Bawean	1	–	–	–	–	–	–	–	–	–	–	–	–
Java	6	5	7	–	2	13	3	–	13	9	3	5	5

How these (and other) records were transferred to Rintja, and claimed by Pfeffer (1958) as his own, will be explained in the next section.

Before leaving the western islands, I want to mention that on 19.ix.1984, from the islet of Sabita, off the east coast of Komodo, I observed an individual of *Numenius madagascariensis* (very large, brown rump, calling), flying past over the strait separating Sabita from an even smaller islet to its south.

Of the few birds recorded from the eastern islands Adonara and Solor, only one, *Arenaria interpres*, is not yet known from Flores proper.

The preceding evaluation leaves six species which would be added to the avifauna of Flores if the satellite islands to the east and to the west were included: *Charadrius peronii, Numenius arquata, Numenius madagascariensis, Tringa totanus, Arenaria interpres*, and *Caloenas nicobarica*.

Addendum.— A summary of the species added to the avifauna of Flores on the basis of sight records, published by Verhoeye & Holmes (1998) is given in the Postscript. This leaves one form recorded by these authors from Komodo but not from Flores, which therefore deserves mention in this chapter. It is *Anas gracilis* (which the authors prefer to treat as a separate species, not as a subspecies of *A. gibberifrons*). Five individuals were seen in a small pond behind the beach on 7.vii.1992. The record is not unlikely, but is the first for any of the Lesser Suna Islands. I regret the absence of any information on how the birds were identified: females and juveniles of nominate *gibberifrons* do not have the high forehead of the drakes and must be very difficult to distinguish from *gracilis* in the field. This is also why I prefer to keep the two forms together in one species.

Through a short visit (14/18.xii.2000) by Trainor (2002a) the island of Adonare has become ornithologically better known. As was to be expected its avifauna is impoverished compared with that of Flores. Not only its small size as such (497 km^2), moderate elevations (although with a peak reaching 1659 m) and fairly low annual rainfall (1000-2000 mm) would be responsible but certainly not in the last place the dense human population (165/km^2). The list of about fifty species is not entirely critical, some species having been included on the basis of hearsay information from locals.

Trichoglossus euteles is the only species on the Adonare list not known from Flores. Considering the proximity of Adonare to Flores, where *T. euteles* is replaced by *T. weberi*, the relationship between these two parrots requires further study. The occurrence of *Halcyon fulgida* and *Tesia everetti* on Adonara constitutes a slightly eastward extension of their known ranges. The same might be true for *Zosterops palpebrosa*, listed as common, without comment: it is a species I would not expect on Adonara, where *Z. chloris*, not mentioned by Trainor, is more likely to occur.

5. History of ornithological exploration

The first two collectors who worked on Flores: Semmelink for the Rijksmuseum van Natuurlijke Historie, and Allen on behalf of A.R. Wallace, were both there in 1862. Unfortunately, very few specimens belonging to either of these early Flores collections are dated exactly. But Semmelink is known to have collected a bird on the second of March on the off-shore island of Adonara, so it may be presumed that he was present on Flores for the whole calendar year. I have seen no dated specimen of Allen's, but considering that he only stayed for four months on Flores, chances are that he started collecting later than Semmelink. Therefore I have decided to place Semmelink ahead of Allen in the chronological sequence of collectors.

J. Semmelink (1837-1912), Officier van Gezondheid (Military Surgeon), was stationed at Larantoeka, where there was a garrison, during 1862/1863. He collected material of various animal groups for the Rijksmuseum van Natuurlijke Historie, and possessed a private shell-collection. According to our register, 55 bird skins were received on 19.viii.1863, and one more on 15.xii.1863. These birds were, with a few exceptions, not individually labelled, but Semmelink wrote that they had been: "Verzameld te Larantoeka en omliggende plaatsen in den loop van 1862". Included in the collection was one specimen from Adonara, which is an island only a few kilometers off Larantoeka (*Pitta elegans concinna*, 2.iii.1862, Adonara, RMNH cat. no. 4; cf. Schlegel, 1874a: 14). I have been able to find 45 species collected by him, 9 of which were not obtained by Allen. In spite of the small size of the collection, it contains several uncommon species: *Ardea alba, Spizaetus floris, Circaetus gallicus, Ptilinopus regina flavicollis, Dicaeum agile tinctum*.

C. Allen (ca. 1838 - ca. 1900), spent almost four months of 1862 collecting on Flores (cf. Wallace, 1864: 480), but there is no exact information (dates and localities) on his stay. It does not look as if Wallace had given his assistant very clear instructions, or as if he was interested in proper data (sex, date, locality) of the collected material, for Weber (1890/1891: vii) wrote: "Auch brieflich konnte mir Herr Wallace keine Auskunft ertheilen, welche Gegend von Flores Ch. Allen besuchte". Allen's labels give merely the year of collecting, and the name of the island.

Only speculation is therefore possible about Allen's stay. I speculate, then, that Larantoeka is the most obvious place for him to have visited: at that time it was the only place with a garrison, and therefore the only place with regular connections with the outside world. The fact that Allen also visited Solor, just off Larantoeka, supports this speculation (cf. Wallace, 1869, II: 385). Rensch (1931a: 454) also supposed that Allen collected: "wohl hauptsächlich im Osten der Insel". On the other hand, if Allen had stayed in Larantoeka for any length of time one would expect him to have met

Semmelink, and to have been mentioned in one of Semmelink's letters to Schlegel.

According to the list published by Wallace (1864), Allen collected 86 species of birds on Flores. A few of these records are doubtful, being either based on misidentification, or on specimens erroneously labelled as having been obtained on Flores. For example, *Munia ferruginea* (= *Lonchura malacca ferruginosa*) is in its natural distribution confined to Java and is not known from any of the Lesser Sunda Islands. As Wallace also enumerates all four species of *Lonchura* known from Flores, the specimen may come in the second rather than in the first category. It is possible that the specimen still exists somewhere, but I have not traced it.

More serious is the case of *Trichoglossus euteles*, of which Allen is supposed to have collected several individuals on Flores (cf. Hartert, 1898a: 43-44; Hellmayr, 1914: 78). *T. euteles* is known from Timor and from the smaller islands to the east of Flores, from Lomblen to Nila. Chances that it might be present on Flores are remote. This shows that material, forwarded from Flores by Allen, may have originated elsewhere. Therefore, species which have been recorded from Flores only by Allen, and the occurrence of which has not been confirmed by subsequent collectors, have to be considered very critically. Besides the two species already mentioned, *Lonchura malacca ferruginosa* and *Trichoglossus euteles*, this concerns the following: *Gallinula tenebrosa frontata, Loriculus flosculus, Petrochelidon nigricans timoriensis* and *Lichmera indistincta limbata*. The occurrence of none of these four species on Flores is a priori improbable, and therefore I have found no reason to eliminate them from the list.

Wallace was a professional collector, whose material has been widely dispersed through trade channels. At least a large proportion of his material, including types of the majority of species, has gone to the British Museum, either directly, or later, through bequests of private collections. There is also material in the RMNH, and undoubtedly in many other museums.

Very little is to be found in the literature about the person of Charles Allen. Wallace (1869, I: 72) says that, in May 1855, he was: "an English lad of sixteen", which places his date of birth in 1838 or early 1839. Towards the end of 1862 (id., II: 385-386), "he obtained employment in Singapore, and I lost his services as a collector". His name is mentioned a few times in Wallace's published letters (Marchant, 1916: 40, 48, 49, 51, 60-61, 79): Wallace and Allen apparently (but not quite certainly) travelled on the same boat from England, and arrived together in Sarawak, in 1854, and when Wallace left, Allen stayed behind with the Bishop of Sarawak: "who wants teachers and is going to try to educate him for one". The most informing is a note inserted by L.V. Helmes (Bishop of Sarawak): "When Wallace left Sarawak after his fifteen months' residence in the country, he left his young assistant, Charles Allen, there. He entered my service, and remained some time after the formation of the Borneo Company. Later, he again joined Wallace, and then went to New Guinea, doing valuable collecting and exploring work. He finally settled in Singapore, where I met him in 1899. He had married and was doing well; but he died not long after my interview with him. He had come to the East with Wallace as a lad of 16, and had been his faithful companion and assistant during years of arduous work".

I cannot help feeling that Wallace has barely done justice to Allen who, young as he was, worked independently on the Sula Islands, Morotai, Misool, Flores, evidence that Wallace had full confidence in his abilities and integrity. From Allen's Flores collection

alone 18 new species and subspecies of birds were described (mainly by Wallace and Sharpe). There is an *Accipiter fasciatus wallacii*, occurring on Flores, and numerous other species bear Wallace's name. But Allen, the collector of many of these species, has not been honoured a single time in such a manner, and therefore his name is not mentioned in Wynne's (1969) useful work.

Addendum.— Recently I came across another reference to Allen, taken from Wallace's letters to his sister (Severin, 1999: 192-193). It is apparent that Wallace brought Allen out with him from England as his assistant. Later, in Sarawak, Wallace considered the boy useless, so that he was happy to leave him behind with the Bishop of Sarawak. I find it astonishing that Wallace, who was not a wealthy man, should have taken the boy with him without first ascertaining his qualities (or the lack thereof). If Allen was as incompetent as Wallace wrote, it is even less explicable that he re-entered Wallace's service later. In summary, I do not believe that my remarks given above are unfair to Wallace. I also realise that letters written by Wallace to his sister were not meant for publication and that he may well have changed his opinion on Allen in later years.

K.E. von Martens (1831-1904) was a zoologist of the "Preussische Expedition nach Ost-Asien". From 6-30 January 1863, he stayed in Larantoeka, as a guest of Dr Semmelink. In this period, he also made trips to Adonara and Solor, off Larantoeka, without apparently collecting any birds. He did, however, collect a few near Larantoeka: *Tinnunculus Moluccensis* (= *Falco moluccensis*), *Cacatua sulfurea, Scythrops Novae Hollandiae, Halcyon collaris* (= *Halcyon chloris*), *Tropidorynchus* sp. indet. (= *Philemon buceroides*), *Nectarinia solaris, Gracula* cf. *venerata* (= *Gracula religiosa venerata*), *Treron* sp. indet. (= *Treron floris*) and *Geopelia striata* (cf. Martens, 1876: 244, 365-373). These nine species had also been collected near Larantoeka by Semmelink and (possibly near there) by Allen the year before, so that Martens's contribution to the ornithological knowledge of Flores is negligible.

In a letter addressed to Schlegel, dated 23.iii.1863, Semmelink mentioned this visit: "Dr Eduard von Martens uit Berlijn, die toen bij mij logeerde, was mij behulpzaam bij het bestemmen en inpakken der zaken en stelde mij in de gelegenheid UEd. eene opgave van de vogels te kunnen zenden, die naar Uwe Handleiding tot de beoefening der Dierkunde bestemd werden" [1]).

P.F.A. Colfs (1853-1882) was a collector employed by Governor-General J.W. van Lansberge. Colfs stayed in West Flores from 7.ii-25.iii and from 11.iv-15.vi.1880; on 16.vi.1880 he left by ship for Maumeri (Maoemere), where he arrived on the 19th. He later sailed regularly between East Flores, Timor and Alor, although he did not visit Flores (Larantoeka) after 29.ix.1880. In 1882 the RMNH received from Van Lansberge 143 bird specimens from Sumbawa, Flores, Ombaai (= Alor) and Timor. A list of this material, dated 31.vii.1884, was prepared by Büttikofer; it includes 36 specimens in 23 species marked as being from Flores, but two of these are from Adonara, and of one, *Zoothera peronii*, an error in labelling may be suspected. Vorderman's (1888) little volume is less informative than one might hope, and throws no further light on Colfs's collecting activities.

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[1]) Dr Eduard von Martens of Berlin, who was my guest at that time, assisted me with identifying and packing of the items and enabled me to send Your Honour a list of the birds, named according to your Handleiding tot de beoefening der Dierkunde.

M.W.C. (Max) Weber (1852-1937) explored Flores from 21.xi.1888 to 9.i.1889. In the introduction to his work, Weber (1890) gives an itinerary, but the only dates mentioned in it are those of arrival and departure. I owe Mr Roselaar the following approximate reconstruction of Weber's itinerary: Reo (23/25 November), Bari (26/28 November), island Rusa Radja, now known as Paloë or Palué (29 November), Maumeri (1/18 December), Kotting and Mbawa (19/24 December), Sikka (25/31 December), Endeh (1/8 January 1889), Rokka near Endeh (9 January). The ornithological results of Weber's visit were quite important; they included the discovery of several undescribed species (Büttikofer, 1894). The greater part of the material (66 skins, 13 skeletons) was retained in Leiden, but a considerable proportion (52 specimens) was returned to the Zoölogisch Museum in Amsterdam (of which Weber was Director). A total of 60 species was obtained.

H.F.C. ten Kate (1858-1931) visited Flores in 1891, his itinerary being as follows: Endeh (28/30 January); on the last-mentioned date he left for Timor, but he returned to Flores in April: Sika and surroundings (13/24 April); from there, he walked to Koting, where he stayed three days until the 27th, and then walked on to Maumeri. On 1 May, he sailed from Maumeri to Groot Bastaard; on 5 May, he arrived at Hading, from where he went overland to Larantoeka; on 11 May, he left for Adonara and Solor, returning to Larantoeka on the 17th. The next two days were spent writing and packing, and on 20 May, he travelled on to Koepang (cf. Ten Kate, 1894). In his first article on Ten Kate's birds, Büttikofer (1891), lists only three birds from Flores: *Artamus leucorhynchus* (1) and *Philemon buceroides neglectus* (2, syntypes of *neglectus*); in his following article, 11 species from Flores are enumerated (including Groot Bastaard, but without Adonara). As one of the 11 was a species mentioned in the 1891 paper, Ten Kate's total score was 12 (Büttikofer, 1892).

A.H. Everett (1848-1898), a famous professional collector in the service of Lord Rothschild, visited Endeh in August 1896, but was not allowed into the interior because of unsettled conditions, and left almost at once (for Savu), after having shot only a few common birds. On his way to Endeh, he seems to have called at Maumeri (cf. p. 86). Accompanied by his "native collectors", he returned to Flores in October of the same year, making his headquarters at Nanga Ramau (Nangaramoe, Nanga Roma, Nanga Ramo, Nanga Ramut), a village on the south coast of Manggarai, in western Flores. From his account (in Hartert, 1897b: 513-514), it is apparent that his hunters were unable to penetrate very far inland, but did succeed in reaching levels of about 5000 ft. in the directions of Puchu Reah (not identified, but probably towards the Golo Radjong, 1490 m) and Puchu Leoh (probably = Potjo-Léok with Golo Mompong, 1383 m), all within a radius of ca. 10 km of Nanga Ramau. The material sent home by him included a number of typical mountain birds, thus confirming this altitude. The exact duration of his stay is apparently not known: his material is dated October and November 1896, and in December he was on Sumba, so that his stay cannot have lasted more than about six weeks. In his various publications, Hartert is very reticent about Everett's exploits, and no exact information is provided by him. I have enquired whether there are any letters in the BM-archives (into which the archives of the former Rothschild Museum have been incorporated), which might provide more exact data, but the reply from the Archivist was, unexpectedly, that the Rothschild correspondence for 1896 does not include any letters from A.E. Everett (Thackray, in litt., 11.

x.1993). Subsequently, Mr Walters (in litt., 4.xi.1993) enlightened me: "I deeply regret to have to say that letters to Rothschild/Hartert, if not among the Rothschild correspondence in London, are certainly destroyed. Both Rothschild in his lifetime, and subsequently 'officials' of the BMNH, burned sackfull after sackfull of Rothschild's papers...even as late as the 1960s...Nobody knows what was destroyed...but it is fairly certain that this included the catalogues of Rothschild's mounted skins, and Max Kuschel's catalogue of Count Roedern's egg collection. The loss of the Roedern catalogue rendered this fine collection almost valueless".

The number of species collected was 114, of which some 15 species and subspecies were new (mainly from the previously unexplored mountains): an impressive result for a comparatively short stay. The material went to the Tring Museum, and most of it is now in the American Museum of Natural History, but, soon after it was received in Tring, some of it was sold to the dealer Rosenberg and became widely dispersed. Unfortunately, Hartert (1897a, 1897b, 1898a) only recorded the actual number of specimens collected when they were few. His text abounds with expressions like: "a fine series", "several skins", etc. Rensch (1931a: 455), placed Everett's collecting work much too far east: "in Mittelflores (wohl hauptsächlich Gebiet des Keo- und Inerie-Vulkans)".

G.A.J. van der Sande (1863-1910), a Naval Surgeon, collected 19 birds on the islands of Flores and Sumba, at various times between December 1907 and March 1909. These are in the Zoölogisch Museum, Amsterdam. Of this total, 11, belonging to 10 species, are from Flores. Three species, *Elanus caeruleus, Haliaeetus leucogaster* and *Esacus magnirostris*, were new records for Flores. For biographical particulars of Van der Sande, I refer to Pulle (1910).

J. Elbert (1878-1915), leader of the "Sunda-Expedition", visited several of the Lesser Sunda Islands as well as Sulawesi (Celebes), and fairly large collections of birds were made. His stay on Flores was, however, short: 24.I-10.ii.1910. According to Van Bemmel & Voous (1951: 28), Elbert's bird collections were divided between: "the Buitenzorg Museum and the Senckenberg Museum at Frankfurt; some of the specimens are now in the museums at Amsterdam and Leiden". This does not look as if the authors were aware that 105 specimens were presented to the RMNH directly (100 of which remain; five were sent to the MZB). Rensch (1931a) discussed the material from the Lesser Sunda Islands in the Senckenberg Museum. He did not mention specimens from Flores. In Leiden, there is only a single specimen from Flores: *Eudynamys malayana*. But there are several interesting species from other islands, such as two specimens of *Dendrocygna javanica* from Lombok.

Endih, the anonymous "Javanese" preparator mentioned by Rensch (1931b: 400), collected a few birds at Réo on the north coast in 1911. The number of species listed by Rensch is nine, the number of specimens 13. It seems, however, that Rensch has missed some of Endih's specimens (cf. Somadikarta & Noerdjito, 1982). In spite of its small size, this collection is important, as it contains a specimen of *Falco cenchroides*, the only record from Flores.

B. Rensch (1900-1990), as participant in an expedition which included also his wife, the botanist Ilse Rensch-Maier, the anthropologists G. Heberer and W. Lehmann, and the herpetologist R. Mertens, stayed on Flores from 6.vi-25.vii.1927. Rensch arrived at Endeh. A visit of two days was made to Poeloe Endeh; a motor vehicle was rented, with which he travelled over the east-west road, which was at that time still under

construction, to Badjawa (1200 m), Aimere (coast), Mborong (coast), Sita (700 m), Rana Mesé (1200-1400 m) and Waë Renó (1000 m). After the return to Endeh, over the same road, a shorter excursion was made in an easterly direction, to the Geli Moetoe (ca. 1500 m). Descriptions of the main collecting-localities are to be found in Rensch (1931a: 459-460). Thanks to the help of four experienced preparators ("Fleißige und anstellige Leute") made available by the Zoölogisch Museum Buitenzorg (the senior one of whom was Denin, the bird-preparator Darna), Rensch managed to bring together a collection of 91 species of birds in this short period. Several of these were new for Flores. He described 10 new subspecies from this collection, four of which are accepted here.

J.K. de Jong (1895-1972), at that time on the staff of the Zoölogisch Museum Buitenzorg, and assisted by two preparators from that Museum (one of whom was the mantri Madzoed), made a collection of birds in western Flores (Mboera, Laboean Badjo, Wai Sano), in October-November 1929. The list, of 69 species, was published by Rensch (1931b). Several species were new for Flores; one of these was described by Rensch as a new subspecies, *Collocalia francica dammermani* (= *Collocalia fuciphaga fuciphaga*). It may be assumed that most of the ornithological collecting was done by Madzoed, as De Jong was a herpetologist, and his main interest was in *Varanus komodoensis*.

Jonkheer W.C. van Heurn (1887-1972), in the first half of May 1930, spent about ten days on Flores. He had no opportunity for ornithological collecting, and only in the second of his two articles (Van Heurn, 1931, 1932) are a few birds mentioned: *Streptopelia chinensis, Geopelia striata, Cacatua sulphurea, Graucalus* sp. (= *Coracina* sp.), *Saxicola caprata, Philemon buceroides*. More interestingly, a group of 12 *Ciconia episcopus* was seen in the lowlands near Reo, and *Gallus varius* seemed to be particularly common near Pota. Bee-eaters listed as *Melittophagus leschenaulti* would have been *Merops ornatus*. Some unidentified herons, ducks and noisy green parrots, probably of more than one species, complete the list of his observations.

E.R. Sutter (1914-1999), a member of the Swiss "Sumba-Expedition" spent, on the return voyage from Sumba, in November 1949, some three weeks on Flores (cf. Sutter & Wegner in Bühler & Sutter, 1951: 214-215). In this period he collected only two birds, both at Todabelu, and both on 13.xi.1949: one *Turnix maculosa floresiana*, and one *Cecropis striolata* (♀ ad.) from the breeding-colony at the school. Notwithstanding the modest ornithological results of this stay, it requires mention here, as one of the specimens has been recorded in the literature (Sutter, 1955: 122). This would make readers wonder, whether more had been collected (as it did me), so that the point had to be cleared up.

J.A.J. Verheijen, SVD (1908-1997). Father Verheijen arrived on Flores as a missionary in 1935 and, apart from a period of internment during the second world war, has remained there until 1993, when he retired to a monastery in the Netherlands. His interest in natural history in general and birds in particular was aroused and stimulated by L. Coomans de Ruiter (1898-1972) during their stay in Japanese internment camps in Sulawesi (Celebes) (cf. Verheijen, 1964: 194), with the result that after his return to Flores he started observing birds and from 1952 onwards assembled a large collection of eggs, later also of bird-skins.

Originally (ca. 1954-1960), the skins were sent for identification to the Museum of Comparative Zoölogy, Cambridge, Mass. This first collection already contained a number of additions to the known avifauna of Flores (cf. Paynter, 1963). The MCZ-collection consists of 335 skins, of which 34 are from Palué (*Turnix suscitator, Amaurornis*

phoenicurus, Ptilinopus melanospilus, Lalage sueurii, Rhipidura rufifrons, Monarcha cinerascens, Parus major, Nectarinia jugularis, and *Zosterops chloris*). The total number of species in this collection is 88, of which 8 (3 from Palué) are not represented from Flores in the RMNH-collections: *Porzana pusilla, Gallinago stenura, Chlidonias hybridus, Tyto longimembris, Lalage sueurii, Rhipidura rufifrons, Monarcha cinerascens*, and *Lonchura pallida*. In this period, specimens were also sent to Bogor (cf. Jany, 1955). The later material (ca. 1968-1978), as well as some material, mostly common species, from the first collection, came to Leiden and forms the main subject of this paper. The bulk of the skin collection is from Ruteng and its wider surroundings, in central Manggarai, as Father Verheijen lived in Ruteng when it was assembled (figs 3-4).

Very important is the large collection of over 4000 eggs, belonging to ca. 100 species, mainly brought together in the period 1952/1962. In Verheijen's (1964) paper, based on this collection, he acknowledges the help of several assistants and colleagues; amongst the latter the Fathers J. Geeraeds (Rekas), J. Klizan (Borong), A. Mommersteeg (Soa), and P. Rehmet (Nanga Rema and other localities). The greater part of the egg collection is also from Manggarai, but it includes material from the island of Palué (Verheijen, 1961), from Soa (received from Father Mommersteeg, as just mentioned), and from Mataloko (=Todabelu), where Father Verheijen worked in 1960 and 1961/62. Soa and Mataloko are outside Manggarai, in south-western Ngada. The collection was purchased by the Rijksmuseum van Natuurlijke Historie in 1973, with the exception only of the eggs

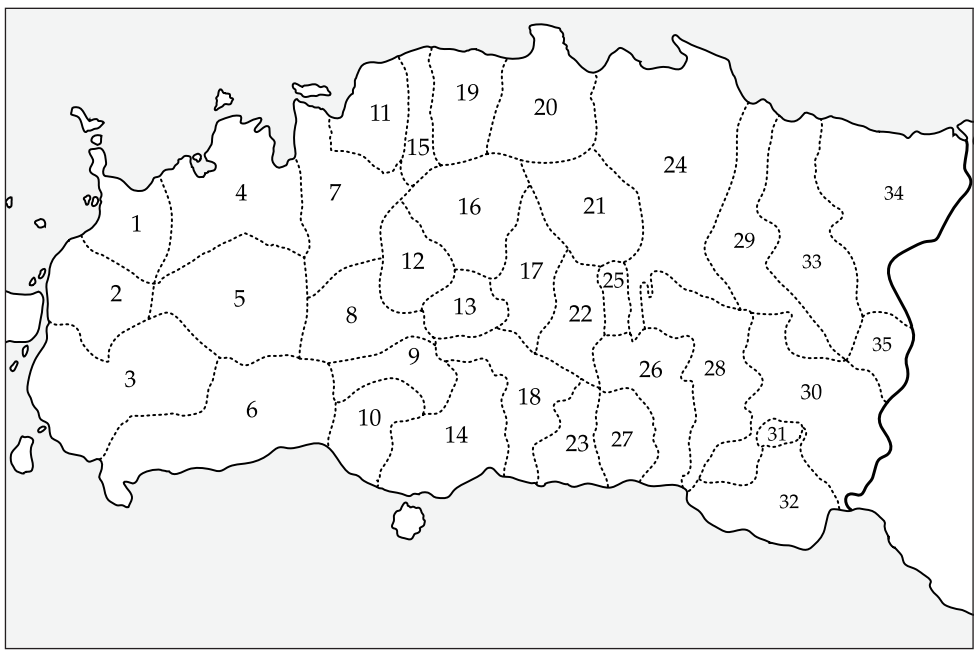

Fig. 3. Kedaluans (districts) of Manggarai (Western Flores). 1. Nggorang; 2. Mburak; 3. Mata-Waé; 4. Boléng; 5. Kempo; 6. Badjo; 7. Patjar; 8. Wélak; 9. Wontong; 10. Mules; 11. Berit; 12. Kolang; 13. Lelak; 14. Todo; 15. Rého; 16. Ndoso; 17. Rahong; 18. Pongkor; 19. Nggalak; 20. Ruis; 21. Tjibal; 22. Ruteng; 23. Potjo-Léok; 24. Lamba-Léda; 25. Ndé; 26. Sita; 27. Torok-Golo; 28. Riwu; 29. Tjo; 30. Manus; 31. Kepo; 32. Rongga-Koé; 33. Biting; 34. Rembong; 35. Radjong.

of the parasitic cuckoos, which had previously been sold separately to J. Ottow. This means that eggs of the following species, although collected by Verheijen, are not represented in the collection acquired: *Scythrops novaehollandiae, Eudynamys scolopacea, Cacomantis variolosus*. Some eggs are shown in figs 12-18 on pp. 254-261.

P. Pfeffer (*1927) visited the islands of Komodo, Rintja and Flores between 18.iv and 14.vii.1956. He spent five weeks of this period on Flores: in the South at Endeh and 'Mont Keli-Mutu' (one day), and in the West around Labuanbadjo, Soknar and Lenteng. His report (Pfeffer, 1958) is very confused; he gives an ecological classification of vegetation-types, listing the birds occurring in each, but there is not a single date or locality; frequently, it is not even clear whether Komodo, Rintja, or Flores are meant. Many records of birds are so vague that one suspects them not to be based on personal observations, but copied from the literature. This suspicion becomes a certainty when one compares his article with Hoogerwerf's (1956) paper on the birds of Komodo, Padar and Rintja; Pfeffer's paper is little more than a translation of Hoogerwerf's contribution, except that for Flores he has added a few species highly unlikely to have been found in the coastal lowlands around Soknar, where he stayed most of the time, e.g. *Accipiter virgatus, Cuculus poliocephalus* (= *C. saturatus lepidus*) and *Brachypteryx floris*. Much of Hoogerwerf's (1956) paper was based, almost verbatim, on the ornithological chapters of a report with a limited distribution, issued two years earlier (Hoogerwerf, 1954b) and Pfeffer has apparently used the report rather than the publication. Very

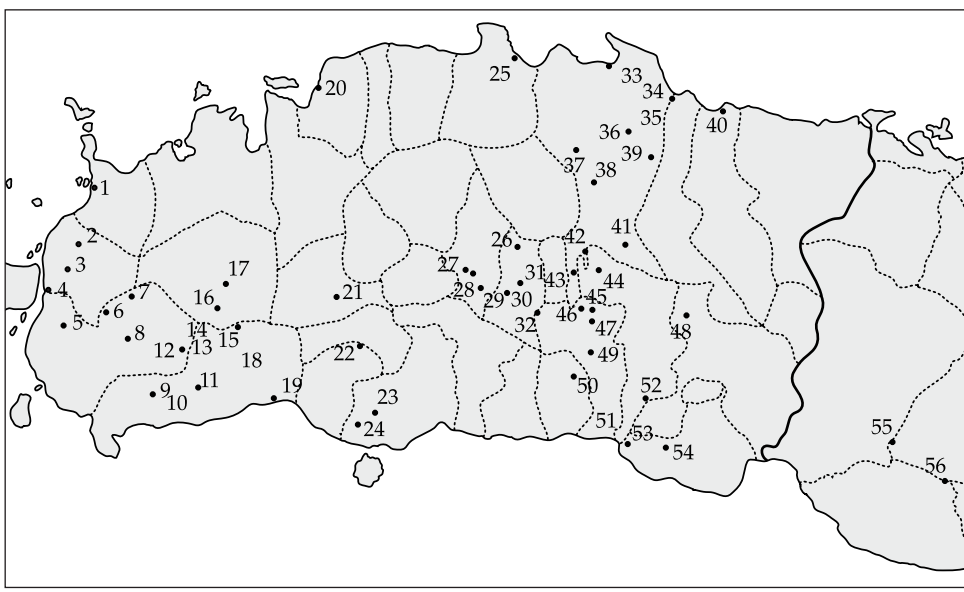

Fig. 4. Localities in Western Flores. 1. Labuanbadjo; 2. Mburak; 3. Renari; 4. Soknar; 5. Look; 6. Tjeréng; 7. Paku; 8. Naga; 9. Nisar; 10. Waé Radja; 11. Sésok; 12. Nunang; 13. Waé Sano; 14. Goang; 15. Waé Wako; 16. Tado; 17. Rekas; 18. Waé Djamal; 19. Nanga-Lili; 20. Bari; 21. Orong; 22. Léma; 23. Déngé; 24. Lamba; 25. Réo; 26. Rua; 27. Tjantjar; 28. Wangkung; 29. Tjumbi; 30. Ruteng; 31. Kumba; 32. Rua; 33. Dampék; 34. Nanga-Rema; 35. Nanga Rema; 36. Waé Tua; 37. Waé Rambung; 38. Béntég Djawa; 39. Nunuk; 40. Peta; 41. Lawir; 42. Rotjong; 43. Mano; 44. Pongkor; 45. Rana; 46. Potjo Rana-Ka; 47. Méné; 48. Rembong; 49. Sita; 50. Puntu; 51. Waé Reca; 52. Léwé; 53. Mborong; 54. Kisol; 55. Badjawa; 56. Toda-Belu.

likely he was not even aware of the existence of the latter. The impractical ecological arrangement is also taken from Hoogerwerf.

In Pfeffer's paper, there are no acknowledgements, and there is no literature list. Hoogerwerf is mentioned twice, the second time: "M. Hoogerwerf signale avoir rencontré *Ducula bicolor* et le Pigeon à crète, *Caloenas nicobarica*, que je n'ai jamais eu la chance d'apercevoir". This is apparently to emphasise that Pfeffer himself did observe all the other species mentioned in his paper (which is, of course, not so). Generally, Pfeffer's translation is a good one, but occasionally he has gone astray. Discussing *Haliaeetus leucogaster,* Hoogerwerf notes: "Wij zagen van deze soort eens 5 exemplaren bijeen in de lucht, maar 1 of 2 stuks werden dagelijks gezien, zowel volwassen exemplaren als nog in het jeugdkleed gestoken vogels, ofschoon vaker op Komodo dan op Padar en Rintja. Die zee-arend werd ook in het binnenland van Rintja aangetroffen bij een zoetwaterreservoir waarin nogal wat visjes leefden. Zulk een verblijf was ons van deze grote roofvogel volkomen onbekend, want een dergelijke plaats is bij uitstek het biotoop van die andere arend, *Ichthyphaga ichthyaetus* en - maar in mindere mate - van *Pandion*, de visarend" [2]). There is no mention of the occurrence of *Ichthyophaga ichthyaetus* here; only the statement that *Haliaeetus leucogaster* occurred here in a habitat where (elsewhere) one would rather expect *Ichthyophaga ichthyaetus* and *Pandion haliaetu*s.

Pfeffer, after discussing *Haliastur indus* and *Haliaeetus leucogaster*, birds so common and conspicuous that he was able to give some personal observations, comes with this: "Moins nombreux que les deux espèces précédentes sont *Pandion haliaetus* et *Ichtyophaga ichtyaetus*, cependant on peut être assuré de rencontrer au moins un individu ou un couple de chacune de ces deux espèces en une matinée d'observation". Pfeffer even copied from Hoogerwerf the erroneous spelling *Haliaetus* for *Haliaeetus*, and from Hoogerwerf (1954b: 217) the erroneous spelling *Ichtyophaga ichtyaetus* for *Ichthyophaga ichthyaetus*, for Hoogerwerf's (1956) error (*Ichthyphaga*) was a different one. Bruce (in White & Bruce, 1986: 118) noted about *Ichthyophaga ichthyaetus*: "From Rinca it was also recorded by Hoogerwerf, perhaps the source of Pfeffer's error". Bruce was correct in pointing out the source of Pfeffer's error, but did not realize that Hoogerwerf's "record" was not a record at all. Verhoeye & Holmes (1998: 12) not only transferred Hoogerwerf's discussion of *Pandion haliaetus* from Rintja to Komodo, but moreover seem certain that he observed there two individuals of the species he stated clearly that he had not seen!

Pfeffer's observations of *Numenius arquata* and *Tringa totanus* in June, allegedly on Rintja, which were rightly questioned by White & Bruce (1986: 170, 173), were presumably also copied from Hoogerwerf, and were from Padar, an island not visited by Pfeffer. Hoogerwerf is also responsible for the record of *Cypsiurus parvus* (= *C. balasiensis*): "de Apodidae *Collocalia esculenta, Collocalia* sp. en *Cypsiurus parvus* ... maar deze laatste soort kwam hier toch in geen verhouding voor tot de prachtige nestel-gelegenheid,

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[2]) Of this species we once saw 5 individuals together in the air, but 1 or 2 were noted daily, adults as well as birds in juvenile plumage, although more frequently on Komodo than on Padar and Rintja. This sea-eagle was also found inland on Rintja, at a freshwater reservoir containing numbers of small fishes. Such a habitat was completely unknown to us for this large bird-of-prey, for such a place is especially the biotope of that other eagle, *Ichthyophaga ichthyaetus* and - to a lesser degree - that of *Pandion*, the Osprey.

welke de lontarpalmen haar konden bieden" [3]). Pfeffer: "Les Apodidés sont bien représentés aussi: *Collocalia esculenta, Collocalia* sp. (*francica*?) et *Cypsiurus parvus*, qui nichent tous à la base des palmes de lontar". The statement that the *Collocalia* species nest in Lontar Palms (*Borassus flabellifer*) is another mistranslation.

The supposed common occurrence of *Dendrocopos macei* originated also with Hoogerwerf. As Hoogerwerf's article deals with the islands of Komodo, Padar and Rintja, and not with Flores, there is no need here for a discussion of his paper and for speculation as to whether he has actually seen *Cypsiurus balasiensis* and *Dendrocopos macei* (I regard it as very unlikely).

The observation that *Ninox scutulata* is: "commune à Flores et Rintja" is not derived from Hoogerwerf, but is Pfeffer's own, and is unexpected, both because otherwise only three specimens are known from the island, and because only in the first one or two weeks of Pfeffer's stay might this northern migrant have been likely still to be present. Pfeffer continues, however: "d'après autopsie d'un individu, il semble que cet oiseau serait plutôt insectivore que franchement carnivore". This certainly suggests that a specimen was collected. In reply to my request for a loan from the Paris Museum, I received a Pfeffer specimen of *Ninox scutulata*, but it was from Borneo, not from Flores, and the enumeration of Pfeffer's skins from Flores and Rintja, given below, shows that he did not collect the species there. More about the specimen from Borneo will be said in the main text. Enough about Pfeffer's publication: in the rest of this paper, it shall be ignored.

The preceding notes were necessary to clear up the record, but it would be unfair to Pfeffer not to mention that he has published a very readable book about his visit to Flores and Rintja (Pfeffer, 1965). Throughout, the book has the ring of truth, and some of its stories (like the addiction to "soentik") look very familiar, being similar to my own experiences in the East. The 17 bird species mentioned in the text (of which the scientific names are given in an appendix) are common lowland birds, of which there can be no reasonable doubt that he has observed them.

During his stay on the islands, Pfeffer collected a small number of birds for the Paris Museum. The acquisition-register of the Museum shows the following specimens to have been received. From Flores: *Halcyon chloris* (2), *Pachycephala fulvotincta, Philemon buceroides* (2) and *Dicrurus hottentottus*. From Rintja: *Stiltia isabella, Chalcophaps indica, Halcyon sancta, Anthus novaeseelandiae* (2), *Coracina floris, Nectarinia jugularis* and *Poephila guttata*.

E. Schmutz, SVD (*1932) arrived on Flores in 1963 and, mainly from 1968/1978, but again in 1982/1983, collected birds, of which the great majority was sent to Leiden. Like Father Verheijen, with whom he cooperated closely, his main field of activity was in Manggarai, West Flores. He lived in Nunang, and his collections are mainly from the south-western corner of Manggarai. Especially in the earlier years, material collected by him was labelled and numbered in the Verheijen collection, which makes it in some cases difficult to be sure whether a bird was collected by Schmutz or by Verheijen. Perhaps it does not matter much: for example, interesting material from the locality Poco

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[3] the Apodidae *Collocalia esculenta*, *Collocalia* sp. and *Cypsiurus parvus* . . . but the latter species did not occur here in proportion to the beautiful nesting opportunities offered it by the Lontar Palms.

Nernancang (near Ruteng) was actually obtained by the native collector Lazarus, and was forwarded by either Verheijen or Schmutz. Father Schmutz has been particularly successful in collecting a number of rare or little-known birds such as *Podiceps novaehollandiae, Pernis ptilorhynchus, Columba vitiensis, Caprimulgus macrurus, Coracina novaehollandiae*. From his collections, I was able to describe one new species (*Monarcha sacerdotum*) and one new subspecies (*Accipiter virgatus quinquefasciatus*). During a visit to Leiden in 1995, I was shown another small collection of birds from Flores (ca. 80 specimens), received from Father Schmutz after my retirement. I took notes of the more interesting specimens and included them in this paper.

In recent years bird collections have been made in the Lesser Sunda Islands (including Flores) on behalf of the Western Australian Museum, Perth. Mainly for the sake of completeness, I should have liked to include these, but my request for access to this material was declined.

Several authors (e.g. Junge, 1954: 311; White & Bruce, 1986: 71) list Flores amongst the islands visited by the great Italian botanist and ornithological collector O. Beccari (1843-1920), but that is hardly correct. On his first expedition, with L.M. d'Albertis (1841-1901) to New Guinea, the route was from Makassar through Strait Flores to Timor (Koepang and Dilli). Departure from Makassar 24 February 1872, arrival Koepang the 28th. The voyagers must have seen the eastern end of Flores from their ship, and they may even have spent a few hours in the roads of Larantoeka, but it could not have been more than this (cf. d'Albertis, 1880: 5).

6. The egg collection

Until Father Verheijen started his investigations, practically nothing was known of the nidification of birds of the Lesser Sunda Islands. Rensch noted the condition of the gonads of the birds he collected, and photographed the nest of a sea-eagle *Haliaeetus leucogaster* with a chick on the island of Endeh. The title of a short article by Schönwetter (1934) promises more than it gives, as eggs of only five species of birds from Timor are described in it, and all are widely-distributed species, the nidification of which was already well known in other parts of their range (*Podiceps ruficollis, Anas superciliosa, Rallus philippensis, Porphyrio porphyrio, Chalcophaps indica*). And that is about all, as far as published evidence goes. It may truly be said that Verheijen did pioneer work, and his article on breeding seasons of birds on Flores is a contribution which deserves more attention than it has received.

Verheijen (1964) lists 101 species which have been found breeding, of which 9 with a query:

Ixobrychus cinnamomeus
Accipiter virgatus
Rallus pectoralis
Porzana cinerea
Porzana fusca
Streptopelia bitorquata
Ptilinopus melanospilus
Pnoepyga pusilla
Culicicapa ceylonensis

Of these nine, I have been able to confirm four: *Ixobrychus cinnamomeus, Rallus*

pectoralis, *Porzana cinerea*, and *Culicicapa ceylonensis*. With much hesitation, I have also accepted *Ptilinopus melanospilus*, which will be further discussed below. Moreover, the following species have to be eliminated from Verheijen's list: *Otus alfredi* = *Otus silvicola* (as suggested by Verheijen in a footnote), *Collocalia inexpectata* (there are no eggs that could be ascribed to this species, now *C. salangana*, in the collection; see p. 219), *Geocichla interpres* (no eggs in the collection), *Erythrura hyperythra* (identification doubtful). The case of *Rhipidura diluta* is interesting: at first rejected (the eggs had been misidentified), it could subsequently be re-instated, as a clutch ascribed to its congener *R. rufifrons* was found to belong to it. On the other hand, the following species can be added: *Accipiter novaehollandiae, Falco longipennis, Otus silvicola, Caprimulgus macrurus, Merops philippinus, Orthotomus cucullatus*, and *Passer montanus*.

When these corrections are carried out: 8 species subtracted, and 7 added, the total number of species of which the eggs have been collected is exactly 100 (of which 97 in the RMNH; the eggs of three parasitic cuckoo-species in the Coll. Ottow). Consultation of the register will show that this is close to two-thirds of the total number of species which may reasonably be assumed to be breeding birds. This means that, rich and important as the collection is, it is far from being complete. This was pointed out by Verheijen (1964: 194): "Hardly anything has been collected on the coastal islands, along the beach and in the coast vegetation, nor above 1300 m". Even keeping these limitations in mind, the absence of eggs of some species, particularly *Lophozosterops superciliaris* and *Lichmera lombokia* is surprising, seen in the light of the large numbers of skins of these species that have been obtained, and show them to be common.

The collection contains a number of unidentified clutches. Further study of these will probably lead to the addition of a few species to the list of 100. A much greater problem than unidentified eggs, are misidentified eggs. Inevitably, large collections brought together with the help of natives, must contain misidentified eggs, and the collection from Flores is no exception. In a few instances (such as the eggs ascribed to *Accipiter virgatus, Rhipidura diluta*) such errors were easy to detect. Real problems are caused by the white eggs of the Columbidae: unless the birds are seen attending the nest, there seems no possibility of separating eggs of *Streptopelia bitorquata* from those of *S. chinensis*; the problem is not confined to within a genus, for the eggs of *Ptilinopus melanospilus* also agree in measurements although perhaps not in weights. In this and several other cases, the original identification by the finders has just to be accepted, as a verification on the basis of the eggs alone is not possible. The same difficulties apply to the pair *Zoothera interpres* / *Zoothera dohertyi*, the *Lonchura* species, and several others.

Father Verheijen has been generous with his eggs. He presented several clutches to Coomans de Ruiter and to Hoogerwerf, who described some of them in a paper on the oology of Java (Hellebrekers & Hoogerwerf, 1967: 53, 122, 135, 136, 149, 158). The egg-collections of both these gentlemen have since been incorporated into the RMNH collection; included is an egg of *Chrysococcyx minutillus*, which was already in Hoogerwerf's possession before the eggs of the parasitic cuckoos were sold to Ottow. I am personally indebted to Father Verheijen for presenting me with clutches of Zosteropidae, then undescribed, for inclusion in my revision (Mees, 1969: 203, 211, 280).

As regards seasonality, Verheijen's (1964) enumeration of the combined totals of nests found each month, shows that some breeding activity takes place throughout the year, but that there are clear maxima in April and May, and minima in December,

January, and February. The period of minimal breeding activity corresponds to the wet season (heavy rainfall), whereas the peak period, in April and May, corresponds to the end of the rainy season, and the beginning of the dry season. Of course, Verheijen's table shows only a rough approach and undoubtedly there is some bias in it. For example, Verheijen visited the island of Palué from mid-April to the first week of May, 1960, and during this short period, large numbers of clutches of a limited number of species were obtained (15 of *Turnix* sp., 17 of *Nectarinia jugularis*, 65 of *Zosterops chloris*). Although the Palué records have certainly boosted the figures for April and May, I believe that they have accentuated rather than distorted the general picture.

When comparing Verheijen's table with the numbers of clutches now in his collection, it will be noted that the former in many cases contains more. This is only as was to be expected, as the table was based on all the nests and eggs found, not all of which would have been collected. On the other hand, some clutches have been added to the collection after the manuscript was closed (in June 1962). There are, however, several discrepancies that cannot be explained in this way. An extreme example is *Nectarinia jugularis*, of which Verheijen lists 36 clutches (or nesting records) divided over the months as follows: March (4), April (3), May (23), June (6). His collection, however, contains clutches collected in March (4), April (19), May (11), June (7), and July (3).

Perhaps more interesting than the general (main breeding activity in April-May at the beginning of the dry season), is the particular: the species that do not conform. Verheijen (1964: 197) already mentioned *Saxicola caprata* as an example of a pronounced dry-season breeder, which begins breeding only towards the end of July, and stops abruptly in the beginning of November. Other dry season breeders are *Caprimulgus affinis, Merops philippinus, Cecropis striolata, Terpsiphone paradisi, Dicrurus hottentottus, Artamus leucorhynchus, Corvus florensis* and *Corvus macrorhynchos*, and of course, perforce, the brood-parasites of these species: *Cacomantis variolosus, Eudynamis scolopacea* and *Scythrops novaehollandiae*. None of these other cases is based on such an impressive material as that of *Saxicola caprata*, and one seems dubious: Verheijen listed nesting of *Terpsiphone paradisi* in October (1), November (2) and December (1), which certainly is suggestive, but his collection contains, in addition, a clutch taken in March.

Are there also birds with a preference for the wet season? Not unexpectedly, the data for some of the Rallidae (*Rallina fasciata, Amaurornis phoenicurus*) suggest this, and one would expect it of the Anatidae (about the breeding of which there is little information).

Finally, there is the category of species that have been found breeding in all months of the year. There are not many: *Turnix suscitator/maculosa, Rallus philippensis. Anthus novaeseelandiae, Tesia everetti* and *Dicaeum annae* have also a remarkably extended season (11 months in Verheijen's table), although the egg-material of *A. novaeseelandiae* available to me, covers only 9 months, but including May, the month for which no breeding was listed by Verheijen. Of *Tesia everetti,* material collected in 10 months is present. On the other hand, eggs of *Philemon buceroides* are represented in the collection from 10 months, although listed by Verheijen from 8 months only. In many other species, there is a clear and predictable relation between the number of clutches present, and the extent of the breeding season that can be deduced from them. It is apparent that these species, although they have a distinct and fairly short peak in their breeding, do occasionally nest in other months. As observed by Verheijen, *Philemon buceroides* appears to

have a double peak in its breeding-activity, in April/May, and September. A second example of a double peak, *Gerygone sulphurea*, is less convincing. This brings me to a concluding remark about the value of Verheijen's egg collection. Originally I was inclined to judge it by the number of species represented in it, and to regret as unnecessary the large series of some of the commoner birds. However, only these large series can show where the peak period of breeding activity lies, and indeed, without them the informative value of the collection would have been very much less.

7. Forsten's collection from Bima, Sumbawa

In the following pages, mention will repeatedly be made of specimens from Bima, received from Dr A.E. Forsten (1811-1843) in 1842. It is the first collection known from Sumbawa, and there can be no doubt of its provenance, as it contains several species and subspecies of birds endemic to the central Lesser Sunda Islands. Some of these were described from 1850 onwards (*Trichoglossus haematodus forsteni, Zosterops aurifrons = Zosterops wallacei, Gracula religiosa venerata, Oriolus chinensis broderipi, Dicrurus hottentottus bimaensis*), but others remained undescribed, and were only described many years later from other collections (*Treron floris, Pitta elegans concinna, Terpsiphone paradisi floris, Philemon buceroides neglectus, Lonchura pallida*). There remains, however, an enigma around this collection, as Forsten did not visit Sumbawa. On his way out from Java to Sulawesi (Celebes), he passed in sight of Sumbawa, but did not go ashore. I have consulted Forsten's diary in the archive of the Rijksmuseum, and it confirms that he never set foot on Sumbawa. Junge (1954: 307), confronted with the same problem, suggested that Forsten had sent hunters to Sumbawa, which seems possible, but very unlikely, as Forsten never worked anywhere near Sumbawa, his activities being confined to Sulawesi (Celebes) and the Moluccas. The possibility that after Forsten's death his hunters, on their way back to Java, might have called at Bima and done some collecting there, has occurred to me, but that conflicts with the fact that the collection was received in Leiden in 1842, when Forsten was still alive.

Of the early collectors, only C.G.C. Reinwardt (1773-1854) visited Bima, but he is not known to have collected birds there, and his collections were received in Leiden twenty years earlier (as far as they were not lost by ship-wreck). Moreover, he did apparently not label his specimens, which later has caused no end of confusion. Therefore a collection definitely from Bima, is not likely to have originated from him. That leaves the riddle of who was the collector of the Bima material unsolved; the solution is probably still buried in an archive: after all, not that many people interested in birds and able to collect them, can have visited Sumbawa around 1840. In 1839/1840, just before leaving on his journey to Celebes, Forsten was for a short time director of the natural history museum in Batavia. It is likely that during this period he either received the specimens from Bima, or found them already present in the collection, and that he arranged their transport to the Netherlands.

8. Systematic account

All measurements are in millimetres; weights of the eggs in grammes. It will be clear that these are the weights of the empty shells, not of the full eggs.

Fig. 5. *Podiceps ruficollis;* right and middle specimens from Java, with little black on chin, left specimen from Flores with large black throat patch, as discussed in the text.

Podiceps ruficollis vulcanorum Rensch

Podiceps ruficollis vulcanorum Rensch, 1929, Journ. f. Orn. 77, Ergänzungsb. II: 205 – Kratersee Segare Anak (2000 m), Lombok.

Collectors.— Allen, Rensch (6), Schmutz.
Material.— 2 (?), vii.1969, Nunang (crater lake), 650 m (Schmutz, RMNH nos. 66087, 66088); ♀, 11. viii.1969, Nunang (Schmutz, RMNH no. 85142); ♀, 28.x.1971, Nunang, 650 m (Schmutz, RMNH no. 81084).

Notes.— Father Schmutz found this a common species on the crater lake Nunang.

The subspecies *vulcanorum* is characterized by a large black throat-patch, although individual variation in extent of the black makes this a less distinct subspecies than one would wish. Unexpectedly, two specimens from East Java, where this species is rare and its status uncertain, have very little black on the throat and are quite typical *tricolor* (♂, ♀, 22.x.1939, Klakah, leg. Kooiman, RMNH nos. 22951, 22953) (fig. 5). In lateral view, the bill of *P. ruficollis vulcanorum/tricolor*, is thicker than that of *P. novaehollandiae*.

Measurements:	wing	exposed culmen	bill/wing index
2♀	98, 100	22.8, 21	22.3, 21.0%
2(?)	101, 101	23, 27	22.8, 26.7%

Podiceps novaehollandiae novaehollandiae Stephens

Podiceps Novae Hollandiae Stephens, 1826, in Shaw, General Zool. 13 (1): 18 – New Holland.
Podiceps novaehollandiae javanicus Mayr, 1943, Emu 43: 6 – Rakukak, 4000', Java (= Rakoetak, see Notes).
Podiceps novaehollandiae timorensis Mayr, 1943, Emu 43: 7 – Sumul, Timor.

Collector.— Schmutz.
Material.— ♀, 17.i.1969, Nunang,Waé Sano, 650 m (Schmutz, RMNH no. 65167). Iris golden yellow, bare skin around the eye citrine yellow.

Notes.— This specimen does not agree with the description of *P. n. timorensis* (about which more will be said below), but it fits well into a series from Java. Many years ago, I compared specimens from Java with Australian material, and was unable to confirm the existence of differences that would justify recognition of *javanicus. P. n. timorensis* is not recognized by White & Bruce (1986: 62, 89); these authors did not discuss *P. n. javanicus*, which is outside the geographical region treated by them.

The type-locality of *P. n. javanicus* was given as "Rakukak" by Mayr (1943). No locality of that name exists, but according to Greenway (1973: 217) it appears on the label to be Rakoetak. The Rakoetak (7°09'S, 107°43'E) is a mountain to the south-east of Bandoeng, West Java. This would also be the locality referred to as Raketak by Ripley (1952), who honestly states: "I have been unable to identify this locality".

Although van Oort (1910) already wrote: "All the little grebes from Java in the collection of the Leiden Museum (15 specimens) belong to *novae hollandiae*", this was for some reason overlooked by later authors, such as Bartels & Stresemann (1929: 90: *P. ruficollis philippensis*; this is especially strange, since specimens in the Bartels collection are correctly labelled *P. novaehollandiae*), Chasen (1935: 50: *P. ruficollis vulcanorum*) and Kuroda (1936: 587), until Mayr (1943) drew renewed attention to it.

The status of this species on Flores is probably that of a rare visitor: the present specimen is the only one ever found by Father Schmutz. *P. ruficollis vulcanorum*, on the other hand, is a resident. There are now records of *P. novaehollandiae* from Bali (Wiegant & van Helvoort, 1987), Flores, Alor and Timor, and in each case it concerned single individuals, without any suggestion of breeding. The Bali bird might conceivably have come from Java, whereas the birds from the eastern Lesser Sunda Islands are more likely to have been stragglers from Australia. Mayr's (1943: 4) assertion that *P. ruficollis*: "lives side by side with *novaehollandiae* on a number of places without interbreeding", remains unconfirmed. It does certainly not apply to the Lesser Sunda Islands, but may be valid for northern New Guinea (Lake Sentani), where the situation requires further study.

P. n. timorensis was based on a single specimen, supposedly distinguished from nominate *novaehollandiae* by having the: "Facial pattern and white on secondaries as in *novaehollandiae*, but underparts darker than in the other races of the species and distinctly washed with tawny (chestnut), resembling *tricolor* in this respect. General size and relative size of bill large". Being aware of the presence of a specimen from Timor in the ANC, I asked Dr Schodde for information about it. On the basis of his reply, I feel justified in placing *timorensis* also in the synonymy of nominate *novaehollandiae*, in agreement with White & Bruce.

Particulars are: ♂, gonads 3.0 × 3.0 mm, 14.vi.1974, 10 km west of Lautém, East Timor (I.J. Mason, CSIRO no. 30240), weight 170 g. "The specimen is white-breasted

and -throated with vestiges of white mottling on sides of head and a faint russet cast to the mid grey of the lower throat, and sides and back of the neck. This suggests to me that it is an immature male moulting into a nearly completed first non-breeding plumage .... In comparison with *T. n. novaehollandiae* from Australia in *equivalent* plumage I can find no difference other than some russet feathering in the crown which could be individual. The bird is as white on the breast, belly and upper throat as typical Australian specimens" (Schodde, in litt., 11.vi.1993).

Measurements:	wing	exposed culmen	bill/wing index
♀Flores	105	22	21%
♂Timor	104	21+	ca. 22.1%

The bill of the Timor specimen is damaged; the index is calculated from the assumption that ca. 2 mm at the tip are missing.

Pelecanus conspicillatus Temminck

Pelecanus conspicillatus Temminck, 1824, Recueil d'Ois. 5 (livr. 47): pl. 276 – des Terres Australes = Swan River, Western Australia (cf. Stresemann, 1951).

Collector.— Verheijen (a wing only, ZMA).
Material.— None.

Fig. 6. *Pelecanus conspicillatus* captured on Flores (Watuneso).

Notes.— The wing preserved by Verheijen, was from a bird taken near Sika, about September 1960 (cf. Voous, 1967). In 1978, an invasion took place in southern Indonesia. Somadikarta & Holmes (1979) listed records from the Moluccas, from Java and Sulawesi (Celebes), and from the Lesser Sunda Islands of Bali, Lombok, Sumbawa and Timor. The largest flock reported was one of ca. 300 birds in West Sumbawa. Flores, although not specifically mentioned by these authors, was not passed by. Local newspapers recorded 26 pelicans flying above and fishing in Rana Loba, a small lake ca. one kilometer from Mborong, Manggarai, on 26 April. On 10 July, four birds were captured near Watuneso (fig. 6). As an explanation for the invasion, adverse conditions in Australia, following several good breeding seasons and a build-up of the population, has been suggested by Somadikarta & Holmes.

Sula leucogaster plotus (Forster)

Pelecanus plotus Forster, 1844, Desc. Anim. (ed. Lichtenstein): 366 – Ternate.

Collector: – Verheijen.
Material.— (?) ad. 16.x.1970, Nanga Ramut (Verheijen, RMNH no. 65168). Iris light greenish grey, bill bluish slate, its tip almost white, legs spotty greenish blue.

Measurements:	wing	tail	tarsus	culmen from forehead feathers
(?)	ca. 390	198	53	93

Phalacrocorax melanoleucos melanoleucos (Vieillot)

Hydrocorax melanoleucos Vieillot, 1817, Nouv. Dict. Hist. Nat. 8: 88 – l'Australasie.

Collector.— Verheijen.
Material.— ♀, 5.vii.1969, Look (Verheijen, RMNH no. 65169).

Notes.— Mathews's (1912: 241) substitution of "New South Wales" for the type-locality as originally given by Vieillot, was, as far as I can judge, purely arbitrary. I have no objection to a type locality restriction being arbitrarily made, when this is needed for the study of geographical variation, and the original type material cannot provide this information, or is no longer available. I do object, however, to arbitrary restrictions and substitutions being made (as in the above case), without any mention that they are restrictions. According to Berlioz (1929: 65) the type is "d'Australie", and was brought back by the Expedition Baudin in 1804.

I cannot find clear published evidence of breeding of this species in Sulawesi (Celebes), so that it is worth recording the presence of two eggs in our collection: 1, 11.viii.1863, Ayer Pannas (Rosenberg, RMNH cat. no. 1); 1, 13.ix.1863, Panybie (Rosenberg, RMNH cat. no. 2), measurements 46.0 × 30.3 and 48.2 × 30.4 mm, weights 1.5802 and 1.8488 g.

Cat. no. 1 has on the shell, in what I believe to be Schlegel's handwriting: "s. n. *Ibis peregrinus*, v. Rosenberg, Celebes". On the oldest label *Plegadis falcinellus*, (on which is added in pencil a word which I believe reads "falsch", in Schönwetter's handwriting), and then one with *Phalacrocorax javanicus* (Horsf.). The third label reads *Phalacrocorax*

spec., with the last word crossed out and, in the hand of Hellebrekers changed to *melanoleucos* and on the last label, the current one: *Phalacrocorax melanoleucos melvillensis*. Cat. no. 2 has written on the egg: "s. n. *Ardea picata*, v. Rosenberg". On the oldest label, bearing the name *Notophoyx picata*, is added in pencil: "ist *Phalacrocorax* spec.", signed Schönwetter. The next label reads *Phalacrocorax javanicus*, then *Phalacrocorax* spec., changed by Hellebrekers, and the final one of *P. melanoleucos melvillensis*.

To the impressive list of island records provided by White & Bruce (1986: 94), Alor (Ombaai) can be added: (?), viii.1880, leg. Colfs, RMNH cat. no. 21.

Phalacrocorax sulcirostris (Brandt)

Carbo sulcirostris Brandt, 1837, Bull. Acad. Sci. St. Pétersb. 3: col. 56 – Terrae australes (Südsee).

Collector.— Weber.
Material.— (?), i.1889, Endeh (Weber, RMNH cat. no. 14).

Notes.— Bruce & White (1986: 94) state: "Breeds in E. Java (Hoogerwerf 1953) and now also W. Java (McKinnon MS)". But Hoogerwerf's (1953 = 1954a) paper, listed correctly in their bibliography, is about breeding on Pulau Dua in West Java, in 1952. Our collection contains nine clutches of eggs from Pulau Dua, collected by Hoogerwerf in 1953, 1954, 1955 and 1956. Hoogerwerf (1969/1971: 448-449) found it also nesting on the north coast of the Udjung Kulon peninsula, the western tip of Java, in March 1955. As regards East Java: when Hoogerwerf (1935) visited the tambaks near Soerabaja, he was assured that the species had been breeding there for as long as could be remembered. I do not know on what McKinnon's statement is based that *Phalacrocorax sulcirostris* "has been extending its range westward in the last century and now nests in E. Java and Pulau Dua in West Java": correct for West Java, but in East Java it might, for all that is known, have been a resident for centuries.

There is no definite record of breeding in Sulawesi (Celebes). White & Bruce (1986: 94) state: "Breeds in E. Java..... presumably also in Wallacea". Meyer & Wiglesworth (1898: 891), like Blasius (1883: 127-128, and 1886: 174) before them, dismissed Rosenberg's (1881) claim of the occurrence of *P. sulcirostris* on Lake Limbotto. Yet, our collection contains two clutches, identified as *P. sulcirostris*, c/1, 21.vi.1863, Gorontalo (v. Rosenberg, RMNH cat. no. 1) measurements 53.7 × 33.3 mm, weight 2.7708 g; and c/4, 11.viii.1863, Ayer Pannas (v. Rosenberg, RMNH cat. no. 2) measurements 49.2 × 37.1, 50.4 × 37.0, 50.4 × 37.2, 53.3 × 36.0 mm, weights 3.2220, 3.5772, 3.8336, 3.7391 g. Cat. no. 2 has written on the shells: "*Carbo sulcirostris*", v. Rosenberg, Celebes", and therefore was correctly identified from the beginning. Cat. no. 1 was originally marked *Ardea nigripes*, re-identified as *Phalacrocorax* on a label written by van Oort, after that as *Anhinga melanogaster*, and finally as *Phalacrocorax sulcirostris* by Hellebrekers.

Fregata ariel ariel (G.R. Gray)

Atagen ariel G.R. Gray (ex Gould MS), 1845, Gen. Birds 3: 669, pl. 183 – no locality; designated type locality Raine Island (cf. Mathews, 1914: 121).

Collectors.— None.

Notes.— Frigate birds were first recorded from Flores by Rensch (1931b: 505), who observed them, high in the air, near Endeh and Mborong. He was unable to give a specific identification, and listed them as *Fregata* sp. Verheijen (1961) reported *F. ariel* as: "often seen above the coastal areas of Flores". Schmutz (MS, 1977) observed frigate birds at Nanga-Lili, as *F. ariel* subsp. Although, as far as I know, no specimens have been collected, the evidence is strong enough for acceptance.

Fregata ariel is certainly the commonest frigate bird in the region, but *F. minor* may also occur. There is a specimen of *F. minor* from Timor in our collection, x.1880 (leg. Colfs, RMNH cat. no. 5), and Haniel collected a specimen of *F. minor* off the north coast of Samau, on 21.vi.1911 (cf. Hellmayr, 1914: 109; Stresemann, 1922). Goenoeng Api in the Banda Sea, a well-known breeding station of *F. minor* (Hoogerwerf, 1939; Van Bemmel & Hoogerwerf, 1940), is ca. 500 km north-east of Flores. Schmutz says of the birds he observed, that the white of the breast may be entirely absent, but he says nothing about the presence or absence of white patches on the flanks, the character by which adult males of the two species may be distinguished.

F. minor is a common breeding bird on Christmas Island (Indian Ocean). White & Bruce (1986: 93) also claim breeding of *F. ariel* on the island, but surely in error: until recently, *F. ariel* had not even been recorded as a visitor to Christmas Island, but in the last few years birds have been observed there, their behaviour suggesting that they may be about to settle (cf. Stokes, 1988: 32).

Ardea sumatrana Raffles

Ardea Sumatrana Raffles, 1822, Trans. Linn. Soc. Lond. 13: 325 – Sumatra.
Ardea sumatrana mathewsae Mathews, 1912. Novit. Zool. 18: 230 – Cooktown, North Queensland.

Collectors.— Allen, Verheijen (egg only).
Material.— Egg: c/1, iii.1961, Nanga Rema (RMNH no. 70047). The egg is very pale greyblue.

Measurements and weight:	RMNH no. 70047	68.5 × 47.4	7.24

Notes.— Measurements and weight of this egg fit nicely into the range of variation given by Schönwetter (1960: 87) for a series of 11 eggs from northern Australia.

There is no general agreement on the question of whether the species shows geographical variation, in particular of whether there is a distinguishable Australian subspecies. That this question has not yet been solved to everybody's satisfaction is certainly due to the large size of the bird: very few museums have adequate material from all parts of its fairly extensive range, and their large size leads to a reluctance to ask for, or to provide, loans, merely for the solution of what is, after all, only a very minor problem. As far as I can make out, in the past fifty years, only Amadon & Woolfenden (1952) have actually compared material. They concluded that the subspecies described from Australia, *mathewsae,* was not valid, although they admitted that their material was somewhat inadequate. Also, their material suggested that Australian birds are smaller. Many authors have accepted this conclusion, and have treated *Ardea sumatrana* as a monotypic species (cf. Condon, 1975; 52; Payne, 1979: 201; Dickinson et al., 1991: 101), but others have continued to recognize subspecies, either implicitly, by

using a trinomial for the birds from the northern and western parts of the range (for example Smythies, 1957: 560 and later publications; duPont, 1971b: 21), or explicitly. To the latter category belong Hancock & Elliott (1978: 280), who claim Australian birds to be: "noticeably browner", and Hancock & Kushlan (1984: 74), who state that: "The Australian subspecies *mathewsi* [sic] is very noticeably browner, almost bronze, in colour". Recently, the race: "*mathewsii* [sic] restricted to the Australian subcontinent" [why sub?] was also accepted by Lansdown (1992).

Clearly, there was reason for a further examination of the problem. The RMNH collection is not exactly poor in specimens, but is very unbalanced: 24 specimens, but only one of these from Australia. The Australian bird is a mounted specimen from Clarence River, NSW (received in 1862 from the Australian Museum, Sydney); the other specimens are from: Continental India (2), Sumatra (1), Simalur (2), Java (3), Sulawesi (Celebes) (6), Morotai (1), Halmahera (1), Batjan (1), Obi Major (1), Kelang (1), Waigeo (1), Misool (1), Salawati (1), and Sorong, Vogelkop, New Guinea (1). In this material, there is a considerable variation in plumage. Very distinctive is the bird from Waigeo, a juvenile: it is warm brown, almost chestnut, with black stripes. Other brownish birds, specimens having brownish edges along the feathers, may be assumed to be immature (cf. Amadon & Woolfenden, l.c.). Adult birds, however, do not differ in any way from the Australian specimen, which, contrary to descriptions in the publications cited above, is quite dark. I cannot see any significant difference in plumage between an adult bird from Continental India (admittedly an old, mounted specimen of not very precise provenance, type of *Ardea typhon* Temminck, RMNH cat. no. 1), several adults from intermediate localities, and the Australian bird. The wing-length of the Australian bird is 485 mm, that of the bird from India 480 mm, clear confirmation that Australian birds are not smaller.

It is not surprising that the subspecific name *mathewsae* bestowed by Mathews has caused some confusion (*mathewsi*, *mathewsii*). Mathews did not explain the name, so we must assume that, somewhat artlessly, he named the bird after his wife. I suppose that, with the naming of some 560 species and subspecies in this one publication, his phantasy was heavily taxed.

Ardea purpurea manilensis Meyen

Ardea purpurea var. *manilensis* Meyen, 1834, Nova Acta Acad. Caes. Leopold.-Carol. Nat. Cur. 16, Suppl.: 102 – Manila (reference not verified).

Collectors.— De Jong (1), Schmutz.
Material.— ♀, 12.vii.1969, Kenari (Schmutz, RMNH no. 65170).

Notes.— Previous records are of a bird collected at Mboera, 26.x.1929 (cf. Rensch, 1931b: 395), and a sight record from Mborong in the beginning of July 1927 (Rensch, 1931a: 497). Evidently *A. purpurea* is a resident on the Lesser Sunda Islands, although proof of breeding is not yet available. I do not know on what evidence, if any, breeding records from Flores in March and from Sumbawa late April by White & Bruce (1986: 99) are based, and presume them to be erroneous.

Measurements:	wing	tail	tarsus	exposed culmen
♀	330 (band)	115	122½	123

Ardea alba modesta J.E. Gray

Ardea modesta J.E. Gray, 1831, Zool. Misc.: 19 – India.

Collector – Semmelink
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 16).

Notes.— When Schlegel (1863a) completed his catalogue of the Ardeae in April 1863, the above specimen had not yet reached him, so that it remained unpublished. That is why the species was only added to the avifauna of Flores seventy years later, on the basis of a sight record (of a single bird) by Rensch (1931a: 501).

To the island records listed by White & Bruce (1986: 100), I can add Khoor (= Koer, Kur), where v. Rosenberg obtained a specimen (♀, 2.ix.1865, RMNH cat. no. 32).

Since the revision by Payne & Risley (1976), this species has frequently, but by no means universally, been placed in the genus *Ardea* (rather than in *Egretta* or *Casmerodius*). The reason why I did not follow this, was a certain scepticism (cf. Mees, 1982a: 14) and mainly a reluctance (due to conservatism) to abandon the binomen *Egretta alba*, that has been familiar to me and that I have used in publications for over fifty years. Records of interbreeding in the wild between *Egretta alba* and *Ardea cinerea* in the Netherlands, the raising of viable young from such pairs, and especially the fact that a hybrid paired with an *Egretta alba*, again produced viable young, proving its fertility (Van der Kooij & Voslamber, 1997), indicate that the two species are fairly close and thus support their union in one genus. That interbreeding is not exceptional or confined to a single locality is shown by a further record from Latvia, where in 1997 a mixed pair succesfully raised four hybrid young (Baumanis in Anon., 1998: 39, 56 pl. 4).

McCracken & Sheldon (1998), although highly critical of the osteological work of Payne & Risley, nevertheless agreed in placing *alba* close to *Ardea* and remote from *Egretta garzetta*, the type species of *Egretta*. In the light of all this evidence I feel compelled, still reluctantly, to transfer *alba* to *Ardea*.

Ardea novaehollandiae Latham

[*Ardea*] *novae Hollandiae* Latham, 1790, Index Orn.: 701 – nova Hollandia.

Collectors.— Weber, Rensch (1), Verheijen (5, MCZ), Verheijen.
Material.— (?), xi-xii.1888, Endeh (Weber, RMNH cat. 20); ♂ juv. nestling), x.1968, Kuwu, Rahong (Verheijen, RMNH no. 65172); (?)juv. (nestling), 29.x.1968, Lawir (Verheijen, RMNH no. 65175); ♀ ad., (?)juv. (nestling), 31.x.1968, Rahong (Verheijen, RMNH nos. 65171, 65174); ♀ ad., 14.xi.1968, Ruteng (Verheijen, RMNH no. 65173).
Eggs: c/1, vii/viii.1957, Bénténg Djawa (RMNH no. 70048); c/1, 11.vii.1958, Dampék (RMNH no. 70049). The eggs are plain light blue.

Measurements and weights:	RMNH no. 70048	44.1 × 34.2	1.691
	RMNH no. 70049	47.6 × 33.5	1.940

Notes.— Breeding of *Ardea novaehollandiae* on Flores was recorded by Verheijen (1964: 198) and Mees (1975a). Unfortunately, these records were overlooked by Hancock & Kushlan (1984: 113-116), who mention it as merely a migrant visitor or a vagrant to the Lesser Sunda Islands.

Egretta intermedia (Wagler)

A[*rdea*] *intermedia* Wagler, 1829, Isis: 659 – Java.

Collector.— Schmutz.
Material.— ♂, 20.ix.1969, Kenari, west coast (Schmutz, RMNH no. 65179). Iris light yellow, bill yellow, its tip brownish black, legs black.

Notes.— For measurements and a discussion of this species, cf. Mees (1982a: 16).

Egretta garzetta nigripes (Temminck)

Ardea nigripes Temminck, 1840, Manuel d'Orn. (2. éd.) 4: 376 – l'Archipel des Indes = Java.

Collectors.— Semmelink, Allen (cf. Wallace, 1864: 487, s. n. *Egretta immaculata*).
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 7).

Notes.— *Egretta immaculata* in Wallace's list stands for this species, so that it must have been collected by Allen. The records by Semmelink and Allen seem to have been overlooked by later authors.

In the description of *A. nigripes*, Temminck first gave its range as "les îles de la Sonde et les Moluques", and a few lines further down, as "l'Archipel des Indes". The type locality was restricted to Java by Mathews (1927: 195), followed by Chasen (1935: 56), but Peters (1931: 111) restricted it only to the Sunda Islands, and so did Payne (1979: 213). Our collection contains four specimens which would have been available to Temminck in 1840: ♂, not dated, but 1821/1823, Java (van Hasselt, RMNH cat. no. 1); ♂, not dated, but see the date of the following specimen, Soerabaja (S. Müller, RMNH cat. no. 2); ♀, ii. "1827", but 1828, Soerabaja (S. Müller, RMNH cat. no. 3); (?), presumed juvenile, not dated, but 1821/1823, Java (van Hasselt, RMNH cat. no. 4). See also Schlegel (1863a: 14), where these specimens are listed under the cat. nos. 18-21. As all four specimens are from Java, Mathews's restriction was perfectly justified. The two collected by Van Hasselt would be from West Java, whereas Soerabaja is, of course, in East Java. I see no need for a further restriction or a lectotype designation.

The year of collecting given for a Soerabaja specimen, 1827, cannot be correct, as S. Müller did not visit East Java in that year. Members of the Natuurkundige Commissie, including Müller, did, however, collect at Soerabaja in February 1828, when on their way to Makassar (cf. Mees, 1994: 6, 52).

Egretta sacra sacra (Gmelin)

[*Ardea*] *sacra* Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 640 – Tahiti.

Collectors.— Semmelink, Rensch (3), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 13); ♂, 22.ii.1969, Nisar (Schmutz, RMNH no. 66070); ♀, 11.v.1969, coast between Nanga-Lili and Sésok (Schmutz, RMNH no. 66071). Iris yellow. Eggs: c/3, 14.vii.1958, Nanga Rema (RMNH no. 70050). The eggs are dull white, faintly tinged with bluish grey.

Measurements and weights:	RMNH no. 70050	45.1 × 34.9	1.8779
		45.3 × 34.1	1.9422
		47.3 × 34.0	1.8270

Notes.— The bird collected by Semmelink belongs to the grey morph (cf. Mees, 1986: 23), as does one bird collected by Schmutz, whereas the other one belongs to the white morph.

Bubulcus ibis coromandus (Boddaert)

Cancroma Coromanda Boddaert, 1783, Table Planches Enlumn.: 54 – Coromandel (based on Crabier de Coromandel, Buff., Pl. Enlumn. 910).

Collector.— Semmelink.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 46).

Notes.— Semmelink's specimen, as well as the birds obtained in 1861 by Wallace at Dilli, Portuguese Timor, provide proof that the Cattle Egret already inhabited the Lesser Sunda Islands before its recent expansion. On Flores it is apparently not common, for besides the specimen listed above, there is only a field observation by Rensch (1931a: 500, 633). Father Schmutz has never seen it.

There is little doubt that the species is a resident on the Lesser Sunda Islands, although I do not know of any definite breeding records. White & Bruce (1986: 103) comment on the general absence of breeding-records from Wallacea; they could only mention a record of a nestling, not yet able to fly, from Paré-Paré, southern Sulawesi (Celebes), by Coomans de Ruiter (1948b: 75). However, in our collection there is a c/2, 6.vi.1863, Gorontalo, Celebes (Rosenberg, RMNH cat. no. 1). In evaluating the scarcity of nesting-records of this and other common birds, it should be kept in mind that reporting on their nesting would not have had priority with ornithologists of the 19th century: breeding was taken for granted, and required no documentation. Incidentally, Van Marle & Voous (1988: 62) record a c/2 from the Padang Highlands, Sumatra, in the RMNH collection. This clutch, originally identified as being of *Bubulcus ibis*, was reidentified and published by me as *Egretta intermedia* (cf. Mees, 1982a: 18). Unfortunately I failed, at that time, to correct the entry in the card-catalogue of the egg collection, although I did so on the label of the clutch.

Ardeola speciosa speciosa (Horsfield)

Ardea speciosa Horsfield, 1821, Trans. Linn. Soc. Lond. 21: 189 – Java.

Collector.— De Jong (1).
Material.— None.

Notes.— De Jong's specimen was recorded by Rensch (1931b: 395), but appears to have been overlooked by all later authors. Rensch gives for this bird a wing-length of 213 mm, which is large for a member of the nominate subspecies.

Butorides striatus javanicus (Horsfield)

Ardea Javanica Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 190 – Java.
Butorides striatus steini Mayr, 1943, Emu 43: 10 – Dilly, Timor.

Collectors.— Allen, Everett (2), Schmutz.
Material.— ♂, 7.vii.1969, Nunang (Schmutz, RMNH no. 66072); ♀, 15.vii.1969, Nggoér (Schmutz, RMNH no. 66073). Iris yellow.

Notes.— Both specimens were marked as having large gonads, which suggests local breeding, but there is no definite record.

The subspecies *steini* was not based on a great amount of material: Flores (2, presumably the two collected by Everett), Alor (1), Sumba (2) and Timor (1). For comparison, Mayr (1943) had only a single topotypical specimen of *javanicus* from Java, and one from Bali (additional specimens from various other islands). In the large series from Java available in Leiden, the characters stressed by Mayr as diagnostic of *steini* show a great deal of variation. I found it impossible to separate the Flores specimens in any way from birds from Java and therefore it is with some confidence that I assign them to *javanicus.* With only two specimens from Timor (one of which is mounted, v.1829, Koepang, leg. S. Müller, RMNH cat. no. 42), I am not in a good position to judge the validity of *steini* as such, but then, Mayr had only one specimen from Timor. At any rate, I feel reasonably confident that these birds are also *javanicus.*

In uniting *steini* with *javanicus,* I am in agreement with White & Bruce (1986: 104-105), but as other recent authors have retained *steini* as a valid subspecies (cf. Payne, 1979: 224; Hancock & Kushlan, 1984: 173), it still seemed worth mentioning my conclusions, based on material different from that examined by White & Bruce.

Measurements:	wing	tail	tarsus	exposed culmen
♂	194	74	55	64
♀	185	64	52	62

Nycticorax nycticorax nycticorax (Linnaeus)

[*Ardea*] *Nycticorax* Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 142 – Europa australi.

Collector.— Weber.
Material.— (?) ad., xii.1888, Maumeri (Weber, RMNH cat. no. 52).

Notes.— Hitherto, the above specimen constituted the only published evidence for the occurrence of *N. nycticorax* in the Lesser Sunda Islands east of Bali (where it is a resident; cf. Ash, 1984), but Van der Sande collected one on Sumba (♂ ad., ii.1909, southwest coast of Sumba, ZMA no. 26011): I have examined the bird, which is in perfect adult plumage.

The small-scale map in Hancock & Kushlan (1984: 191) is inaccurate, in that it shows

all the Lesser Sunda Islands, as far east as Timor, included in the breeding-range. The inaccuracy is based on an equally inaccurate map in Cramp & Simmons (1977: 263). On the other hand, Sulawesi (Celebes) can definitely be added to the breeding-range, on the basis of the evidence supplied below.

There has been, and still is, much confusion about the status of this species anywhere east of the Line of Wallace. White (1973b), partly on the basis of information supplied by me, rejected earlier records of breeding in northern Sulawesi (Celebes), as the two specimens in juvenile plumage in our collection (♀ juv., 21.viii.1863, Ayer Pannas, RMNH cat. no. 39 and ♂ juv., 7.ix.1863, Panybie, RMNH cat. no. 43, both collected by v. Rosenberg) were fully grown and would have been well able to fly. Juvenile dispersal over great distances is one of the characteristics of the species.

Rosenberg is supposed to have found both species in northern Sulawesi (Celebes). Our collection contains six specimens of *N. nycticorax* obtained there by him, and two specimens identified as *N. caledonicus.* Hitherto, everybody has been expecting *N. caledonicus* to be the common species in Sulawesi (Celebes), and *N. nycticorax* the unlikely one. Therefore I had not, previously, bothered too much about Rosenberg's two juvenile specimens ascribed to *N. caledonicus.* Now I did so, and was surprised to find that both specimens have actually been misidentified and are *N. nycticorax*. Both are juveniles (♀ juv., 3.ix.1863, Limbotto, RMNH cat. no. 28 of *caledonicus* and ♀ juv., 7.ix.1863, Panybie, RMNH cat. no. 29 of *caledonicus*). Cat. no. 28 is not fully fledged (wing-length ca. 200 mm; nest-hairs on the head) and therefore provides definite proof of breeding. Note that the information about these two specimens, which I forwarded to White (1973b) is erroneous. Cat. no. 29 is not only of the same date and place, but also of the same size and appearance as specimen cat. no. 43 which has always been correctly identified as *N. nycticorax*.

Rosenberg (1881) never claimed to have found more than one species of night-heron in northern Celebes, which he listed under the name of *Ardea caledonica*, and of which he stated to have taken 18 specimens. With the re-identification of the two specimens, there are now 8 specimens of *N. nycticorax* from him in Leiden, and not a single one of *N. caledonicus*. A specimen that found its way to Brüggemann (1876: 98, s. n. *Nycticorax aegyptius*) was also *N. nycticora*x. Evidently, Rosenberg had misidentified the species.

Nycticorax caledonicus hilli Mathews

Nycticorax caledonicus hilli Mathews, 1912, Novit. Zool. 18: 233 - North-West Australia (Parry's Creek).

Collectors.— Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— ♂ juv., 26.vi.1969, Nunang (Schmutz, RMNH no. 65180); ♂ ad., 3. xii.1969, Waé-Mésé, Kandang, Nisar (Schmutz, RMNH no. 66074); ♀ juv., 28.vi.1976, Wangkung, Rahong (Schmutz, RMNH no. 85147). Iris of adult yellow, bare facial skin and basal two thirds of the mandible green-yellow, remainder of bill black, legs green-yellow.

Notes.— The nos. 65180 and 85147 are in the streaked juvenile plumage. Juveniles of this species are easily distinguishable from juveniles of *N. nycticorax* in corresponding plumage, by the strongly rufous tinge of the remiges and rectrices. The literature tends to be hazy about these differences; for example, Hancock & Kushlan (1984: 193) only say: "The immature is brown with much buff and white spotting and streaking",

without any reference to the young of *N. nycticorax*. I cannot confirm the claim by Meyer & Wiglesworth (1898: 848) that the two species would differ in the relative proportions of tarsus and middle toe.

My reasons for continuing to use the subspecific name *hilli* for birds from Australia and adjacent islands, instead of *novaehollandiae* as propagated by Schodde & Mason (1980: 18), have been given elsewhere (Mees, 1982c).

There is no evidence yet of breeding of this species on any of the Lesser Sunda Islands, although it is quite likely that it does. I have been unable to find on what the claim of breeding on Flores by White & Bruce (1986: 106) is based.

Ixobrychus sinensis (Gmelin)

Ardea Sinensis Gmelin, 1789, Syst. Nat. (ed. 13) 1(2): 642 – Sina.

Collectors.— Allen, Verheijen (2, MCZ), Schmutz.
Material.— ♀, 26.xii.1982, Lemboi, 250 m (Schmutz, RMNH no. 81026). Iris yellow.

Notes.— Further records from the Lesser Sunda Islands are: 2 ♂ ad., 17 and 18.vi.1932, Dilly, Timor (Stein, cf. Mayr, 1944a: 132) and (?), 23.iii.1925, Kambera, Soemba (Dammerman, cf. Rensch 1931b: 373).

Material from other islands, arranged by month is given in the following table.

Material from other islands, arranged by month:

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Sumatra	–	–	3	4	–	–	3	1	–	–	–	–
Java	6	5	4	1	3	1	–	–	–	1	6	20
Bali	4	–	–	–	–	–	–	–	–	–	–	–
Borneo	1	–	–	–	–	–	–	–	–	–	2	–
Sulawesi (Celebes)	–	–	–	2	–	–	–	5	1	–	3	–

Supplementary information on birds from Java: the June date is 1 June 1902 (Pangerango, leg. Bartels); the earliest autumn date is October 1827, without exact date (leg. S. Müller); the first subsequent autumn date is 6 November 1925 (Tjisaroeni, leg. Bartels).

White & Bruce (1986: 108) claim breeding in Java, with a reference to Hancock & Elliott (1978: 60), where Java is listed without any explanation amongst the breeding places. I have no idea on what this is based.

The table suggests breeding in Sumatra rather than in Java, cf. Robinson & Kloss (1924: 219): "Females (July and August) had developed ovaries". Sumatra is only referred to as a vague possibility in the publications mentioned above. Hancock & Elliott (l. c.): "Java and possibly Sumatra", and this is repeated without alteration by Hancock & Kushlan (1984: 246). Further to breeding in Sumatra, there is the definite statement by Van Marle & Voous (1988: 64): "Female and eggs collected 18 Dec 1914, Perbaungan, Deli (coll. Waldeck, ZMA)", which would seem to clinch the matter. Because of the importance of the record, I asked for more particulars, which Mr Roselaar (in litt., 23. x.1995) provided in great detail. There is a female, with the date cited above (ZMA no. 26034), but collected by De Bussy, not Waldeck. Apparently, De Bussy used to pass on

duplicate eggs to Waldeck. There are several clutches (and skins) of *I. cinnamomeus* from Perbaoengan/Perbaungan in the collection, but none of *I. sinensis*. Moreover, the specimen was originally identified as *I. cinnamomeus*, and only in the nineteen seventies reidentified as *I. sinensis* (by Roselaar). There is no clutch dated 18.xii.1914 in Amsterdam, but an apparently large part of Waldeck's egg collection was lost in 1917, when the ship on which it was transported, the 'Koningin Emma', was torpedoed and sunk in the mouth of the Thames (Voous, 1995: 537). Mr Roselaar concludes that the available records do not make clear whether the specimen was actually found in association with the eggs. A weak point is also the original misidentification as *I. cinnamomeus*. In the absence of the eggs, proof either way is impossible, but it seems at least likely that the specimen of *I. sinensis* was a visitor and just had the misfortune of being collected at a place where its congener *I. cinnamomeus* was nesting.

On the basis of the information provided by the table, breeding in Sulawesi (Celebes) is also a distinct possibility, although Stresemann (1941: 86-87) called the species only a "Spärlicher Wintergast" there. Lansdown (1987) records cases of nesting in Malaya (from where it was already known), and North Borneo ("Sabah"), new, in 1986. Johnstone et al. (1996: 165) report the find of a nest with one nestling of this species on Sumbawa, in May 1988; they seem not to have considered the possibility that it was *I. cinnamomeus*, which is much more likely.

Our collection gives no support to the suggestion by Beehler et al. (1986: 59) of nesting in New Guinea; our dated material is from October (2) and November (16), cf. Junge (1953: 5).

Ixobrychus cinnamomeus (Gmelin)

[*Ardea*] *cinnamomea* Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 643 – Sina.

Collector.— Verheijen (eggs only).
Material.— Eggs: c/3, 20.vi.1955, Dampék (RMNH no. 70751). The eggs are white.

Measurements and weights:	RMNH no. 70751	35.5 × 28.4	0.708
		36.2 × 29.1	0.714
		36.3 × 28.0	0.758

Notes.— According to White & Bruce (1986: 109): "the only Flores record (Verheijen 1964) perhaps a vagrant", but Verheijen (1964: 195, 198) mentioned no specimen, but only this clutch, which he provided with a query. In my opinion the identification is correct. Both measurements and weights are within the (upper part of the) range of variation of *I. cinnamomeus* and outside (= above) that of *I. sinensis* as presented by Schönwetter (1960: 93-94).

Hancock & Kushlan (1984: 254-255), both in their text and in the map, have excluded Sumatra and Java from the range, thus giving a completely misleading picture of the distribution of this species. It is a common breeding bird in both islands. Our collection contains 6 clutches of eggs from Sumatra, and 77 from Java, the earliest one of which was collected in 1827 (Tjikao, leg. Boie & Macklot, RMNH cat. no. 1). See also the description and photographs of nest, eggs and young by La Bastide (1941).

Marin & Sheldon (1987) claim several nests of this species found in 1982 and 1983 in

Sabah (North Borneo) as first nesting records for Borneo, commenting: "It is surprising that nests of this common padi bird had not been discovered previously in Borneo". But there had. In our collection, there is a c/3, 28.ii.1931, Peniti, Pontianak (Coomans de Ruiter, RMNH no. 73536), a find which precedes those of Marin & Sheldon by over fifty years. Coomans de Ruiter (1948a: 62) clearly refers to clutches (in the plural) collected by him in West Borneo, all consisting of three eggs, but only the one clutch listed above remained when his private collection was incorporated in the RMNH-collection.

Ciconia episcopus neglecta (Finsch)

D[*issoura*] *neglecta* Finsch, 1904, Orn. Mber. 12: 94 – Java, Sumbawa, Lombok, Celebes, Philippinen, restricted to Java by Rensch (1931a: 502).

Collector.— Verheijen.
Material.— (?) , nestling, 16.x.1970, Pong Nggéok (Verheijen, RMNH no. 65182).
Eggs: c/2, 27.ii.1956, Bénténg Djawa (RMNH no. 70052); c/4, ca. 20.iii.1956, Bénténg Djawa (RMNH no. 70053); c/2, ca. 25.vi.1961, Soa (RMNH no. 70054); c/2, 7.iii.1962, Mengé-Ruda (RMNH no. 70055); c/2, 17.ii.1963, Mongu Luwa (RMNH no. 70056); c/2, 14.vii.1963, Mongu Luwa (RMNH no. 70057). The eggs are plain white, dull, with a not entirely smooth surface; most are slightly dirty, and the eggs of one clutch (no. 70053) are strongly stained brownish.

Measurements and weights:	RMNH no. 70052	62.0 × 44.6	6.7408
		63.0 × 44.2	6.7423
	RMNH no. 70053	60.3 × 42.5	5.2875
		61.4 × 44.2	6.8001
		61.9 × 44.3	6.7233
		62.2 × 44.2	6.1253
	RMNH no. 70054	61.6 × 45.6	6.4778
		62.4 × 45.6	6.4871
	RMNH no. 70055	63.2 × 45.1	6.7561
		63.7 × 44.0	6.1062
	RMNH no. 70056	61.9 × 45.3	6.2141
		62.3 × 45.0	6.6479
	RMNH no. 70057	61.4 × 43.6	5.6735
		62.5 × 45.1	6.4836
		63.0 × 44.8	6.2573
		65.2 × 44.7	6.4246

Notes.— This species was previously included in the avifauna of Flores on the basis of field-observations by Rensch (1931a: 503) and Van Heurn (1932).

The validity of the subspecies *neglecta* is questionable (cf. White, 1974). When Finsch described *neglecta*, he did not indicate a type or a type-locality, but only what he believed to be the range of the subspecies, without making clear on what material the subspecies was based, but a year later (Finsch, 1905: 152) he mentioned that his material consisted of specimens from Java (5), Celebes (5) and Sumbawa (1); he states expressly, that he had not examined birds from the Philippines, and only speculates that they belong to the new subspecies. An examination of the material from before 1904 in our collection, showed the five specimens from Celebes and the one from Sumbawa still present, but from Java I could only find four specimens, without any evidence that a fifth one would ever have been present. Subsequently, I found in Schlegel (1865a: 10),

specimen no. 1 ("Adulte, Sennaar, présenté en 1859 par Mr Ruysenaers"), crossed out with, in Finsch's handwriting, in pencil, added: "Zweifellos falsch und von Java (*D. neglecta* F.)". The specimen has remained catalogued as *C. e. microscelis* and, unlike Finsch, I see no reason to question its identity and provenance. It would, however, explain why Finsch recorded the presence of five specimens from Java. This leaves four specimens from Java, the restricted type locality of *neglecta*. They are mounted birds, cat. nos. 1 and 2, merely labelled "ad., Java, Cabt. Temminck" (which means that they date from before 1820), Cat. no. 3, ♂, xii.1826, Buitenzorg, leg. H. Boie, and cat. no. 4, ♂, iii.1870, Java, without locality or name of collector. Only cat. no. 3 is properly labelled, and in addition, it has a type-label attached to it by my predecessor as curator of the bird collection, G.C.A. Junge. There is every reason, therefore, to accept it as lectotype.

Although in their text, Hancock et al. (1992: 82-83) give the known range in the Lesser Sunda Islands correctly as Bali, Lombok, Sumbawa, and Flores, in their distributional map all the Lesser Sunda Islands, including Sumba, Timor and Wetar have been coloured in.

As Van Marle & Voous (1988: 66) knew of only one specimen record from Sumatra, I mention here the presence in our collection of the following specimen: ♂, 27.vi.1920, Soekarami, Palembang, leg. J.C. Batenburg (original label, RMNH no. 20405). Soekarami is a little west of Sekajoe on the Moesi.

Platalea regia Gould

Platalea regia Gould, 1838, Synops. Birds Austr. 4, app.: 7 – East coast of New South Wales.

Collector.— Schmutz.
Material.— ♂, head and one wing only, 1.viii.1969, near the mouth of the Waé Djamal, opposite Nanga-Lili (Schmutz, RMNH no. 85037). Iris red, bill, face and legs black. Stomach contents small crabs.

Notes.— This bird was obtained from a flock of nine. Presumably, these were stragglers from Australia. There has been speculation, whether this bird should be considered a separate species or a subspecies of *P. leucorodia*. Most recent authors (with the important exception of Steinbacher, 1979: 267) have treated it as a separate species, following arguments presented by Amadon & Woolfenden (1952). However, lately it has been suggested that not *P. leucorodia*, but *P. minor* is its closest relative (Hancock et al., 1992: 261). These authors did not go so far as to treat *P. regia* and *P. minor* as conspecific, and I follow them in this cautious approach.

Pandion haliaetus cristatus (Vieillot)

Buteo cristatus Vieillot, 1816, Nouv. Dict. d'Hist. Nat. (nouv. éd.) 4: 481 – la Nouvelle Hollande.
Pandion haliaetus melvillensis Mathews, 1912, Austral Av. Rec. 1: 34 – Melville Island, Northern Territory.
Pandion haliaëtus microhaliaëtus Brasil, 1916, Rev. Fr. d'Orn. 4: 201 – Nouvelle Calédonie.

Collectors.— None.

Notes.— Schmutz (MS, 1977) repeatedly observed Ospreys along the coast, in the mangrove and along the beach. Near Look, a feather was found floating in the water (Vo 309a). This widely-distributed species is present throughout the archipelago, and

there can be no doubt that it occurs regularly on Flores and the adjacent smaller islands. This does not mean that the present records from Komodo, Padar and Rintja are acceptable. White (in White & Bruce, 1986: 113) correctly rejected them, as Pfeffer records. But on the next page, they are re-instated by Bruce, with a reference to an FAO list (probably unpublished, and not available to me); however, it is a safe assumption that the FAO list was based on Hoogerwerf's (1954b) report. The source of the records of *Pandion haliaetus* from these islands would therefore be the same as Pfeffer's (and based on the same mistranslation).

Within a year after its description, the subspecies *melvillensis*, based on "whiter head and smaller size" (no measurements given), was withdrawn by its author (Mathews, 1913: 113; 1916: 302), "as the characters are not constant and I find, moreover, the Australian birds, as a whole, constitute only an ill-defined subspecies". Mathews occasionally had these flashes of insight. The matter was further complicated by the introduction of a second subspecies of supposedly small size in the region: *P. h. microhaliaëtus*, originally described from, and thought to be confined to, New Caledonia. Because of the geographical distance separating the type-localities, its author did not consider it necessary to compare *microhaliaetus* with *melvillensis*. Next came Swann (1922: 233), who extended the range of *microhaliaetus* to "New Caledonia; Celebes", compared with *cristatus*: "Smaller; wing (New Caledonia), 392-412, wing (Celebes), ♂ 383, ♀ 430, tail 175 mm".

Meise (1929: 479-480) measured the material in the Berlin and Tring (Rothschild) museums, and arrived at the very definite conclusion: "daß auf Grund der Größe keine weitere Einteilung dieser von Celebes bis Australien verbreiteten Subspecies möglich ist .... Es mag sich wohl ein größerer Durchschnitt für den Flügel der Australischen Fischadler ergeben, aber 3/4 oder mehr aller dortigen Stücke könnte man nach den Maßen nicht bestimmen. Ein besonderer Name ist also für die Inselbewohner nicht angebracht".

One might have considered this conclusive, but it was accepted by Stresemann (1940a: 487) only with qualifications: "Die subspezifische Stellung der Celebes-Vögel ist noch umstritten, ihre Identität mit australischen zweifelhaft".

The next to study the problem was Amadon (1941), who made no mention of Meise's publication, although for a large part he examined the same material as Meise, that in the mean time had been sold from Tring (Rothschild) to New York. Nevertheless, he arrived at an opposite conclusion. He measured an impressive number of specimens from the tropical part of the range, including northern Australia and Melville Island, and opposed them to five specimens from "Central and southern Australia", which were clearly larger. These last five he listed individually, thus showing that certainly one of them is misplaced: a large ♀ from Point Torment, Western Australia, for Point Torment, near Derby (ca. 17°30'S) is well up into the tropics. The two other Western Australian birds, from Lewis Island and Point Cloates are also from within the tropics, of which, indeed, Amadon was aware. His two remaining specimens were from Port Mackay, Queensland, and New South Wales. Port Mackay is also in the tropics, so that the New South Wales bird remains as the only genuine non-tropical Australian specimen. It is indeed the largest of the whole series (♀, wing 480 mm). Amadon also refers to the supposed type of *P. leucocephalus* from Tasmania in Philadelphia, more about which will be said below (♂, wing 455 mm - very likely mis-sexed,

but to Amadon it supported his opinion that southern birds are large).

Amadon included New Caledonia into the range of the smaller tropical subspecies *P. h. melvillensis*, placing *P. h. microhaliaëtus* in its synonymy.

Probably following Amadon, most subsequent authors (Mayr, 1941b: 18; Delacour, 1947: 52; van Bemmel, 1948: 349; Hoogerwerf, 1949a: 36; van Bemmel & Voous, 1951: 82-83; Vaurie, 1965: 144; Stresemann & Amadon, 1979: 279) recognized *melvillensis*. Also Rand & Gilliard (1967: 86), who, however, extended the range of *melvillensis* to Tasmania, thus usurping the presumed type-locality of *cristatus*. The same error is found in Simpson (1972: 100).

Gyldenstolpe (1955: 361) doubted the validity of *melvillensis*, but accepted it as he lacked the material for a proper evaluation.

In the ensuing years, Amadon seems to have lost some confidence, for Brown & Amadon (1968: 196) regarded *melvillensis* as: "Doubtfully distinct; very similar to *P. h. cristatus*, differing in being smaller" (this is followed by a summary of the measurements published by Amadon in 1941).

Frith & Hitchcock (1974: 127) considered it: "most unlikely that more than one race of this world-wide species is represented in Australia", and commented on the inadequacy of Amadon's Australian material. Via Condon (1975: 76), who neither then nor in his earlier publications accepted more than one Australian form, we come to White (1975b), who "assembled [does that mean, personally took?] wing measurements of thirty-one specimens from Wallacea. The wings of twelve males are 413-439 mm, rather longer on average than the range for *melvillensis*, which is given by Brown & Amadon as 384-428 but about the same in length as those of *cristatus* males, given as 426-431. I do not regard *melvillensis* as recognisable". But Dickinson et al. (1991: 119) again recognized *melvillensis*. Marchant & Higgins (1993: 225, 233) admit only one Indo-Australian subspecies, for which, without explanation, they use the junior synonym *leucocephalus* instead of *cristatus*.

The latest word about geographical variation of the Osprey in Australia is by Olsen & Marples (1993). These authors introduced a new character, size and shape of the eggs, and distinguish again two subspecies in Australia, one of which is confined to the South-West of the Continent. For this subspecies, they use the name *subcristatus*; the name confused me considerably, as it seemed to indicate a Mathewsian creation that I had overlooked. It took some time, before I realised that the *subcristatus* of these authors is no more than a lapsus for *cristatus*. Note that, without comment, *cristatus* has been shifted away from its traditionally- accepted type-localities (Tasmania and New South Wales), and that eastern Australia has been included into the range of *melvillensis*.

The continuing doubt about the validity of *P. h. melvillensis*, naturally made me eager to form my own opinion. To this purpose I examined the material from the *melvillensis/cristatus* range in the RMNH, and took wing-measurements. These were taken with a tape, following the bend of the wing, to the nearest 5 mm (see table).

Pandion haliaetus cristatus (Vieillot): specimens examined

	date	island	locality	wing-length	notes
♂	7.ix.1906	Java	P. Lang	430	
♂ juv.	9.ix.1906	"	"	430	
♂	27.xii.1912	"	Moeara Angke	470	[1])
♂	6.x.1920	"	P. Bokor	430	

♂	11.viii.1927	"	P. Lantjang	435	
♂	ca. 1841	Bawean		430	
♂	2.ix.1844	Borneo	Pagattan	430	
♂	10.x.1863	Sulawesi (Celebes)	Poë	450	[2]
♂	14.vi.1914	"	Mara	435	
♂	9.x.1939	"	Likoepang	420	
♂	30.vi.1861	Ternate		425	
♂	9.vi.1910	Ceram	P. Kasoeari	435	
♂	30.ix.1873	Ceram/Amboina		410	
♂	17.vi.1898	Babar		445	[2]
♂	19.ix.1948	Misool	Fakal	425	
♂	19.vi.1865	Aru Isl.		435	
♂	26.i.1869	Mefoor (= Numfor)		430	
♂	25.vi.1903	New Guinea	L. Sentani	425	
♂	(recd. 1861)	Australia		460	[3]
♀ juv.	7.ix.1906	Java	P. Lang	460	
♀	15.vi.1912	"	P. Bokor	465	
♀	(1841)	Bawean	–	455	
♀	(1883)	Sulawesi (Celebes)	Menado	500	
♀	20.vi.1914	"	Mara	465	
♀	18.x.1939	"	Bangka Isl.	470	
♀	(1866)	Siao		475	
♀	4.viii.1865	Sanghir		425	[1]
♀	3.xi.1865	"		455	
♀	24.i.1866	"		455	
♀	24.vi.1862	Ternate		450	
♀	2.x.1863	Moti		460	
♀	31.xii.1861	Morotai		420	[1]
♀	11.i.1861	Batjan		475	[4]
♀	25.vii.1923	Buru	Djikoe-Merasa	470	
♀	(1842)	Ceram	Kaibobo	470	
♀	27.ii.1897	New Guinea	Sekroe	480	
♀	22.vi.18(78)	"	Doktien	445	[5]
♀	1875	"	Doreh	470	
♀	8.xii.1953	Biak		470	[6]
♀	1.iii.1881	Duke of York		460	
♀	(1865)	New Caledonia		450	
♀	(1841)	Australia		490	

[1]) Almost certainly mis-sexed.
[2]) Possibly mis-sexed.
[3]) Provenance questionable, and probably nominate race, see text.
[4]) Probably nominate race, see text.
[5]) Locality not traced; from A. A. Bruijn.
[6]) Junge (1956) recorded for this specimen a wing-length of 451 mm. He must have used a method of measuring very different from mine, unless the figure is a misprint.

Unfortunately, the series is even more deficient in Australian material than Amadon's: only a single specimen, which is large (wing 490 mm), but being without locality, has little value. In spite of this deficiency, the list of measurements is most instructive. It shows that birds from Sulawesi (Celebes) are not small: indeed, one specimen from there is the largest of the series. A bird from New Guinea (wing 480 mm) is as large as Amadon's largest Australian bird, from New South Wales. None of my specimens has

a wing-length of less than 400 mm, as recorded by several previous authors (perhaps a difference in the method of measuring?). In the following paragraphs, I shall try to show that the Osprey does not occur in south-eastern Australia and Tasmania, the supposed type-locality of *cristatus*, which eliminates this region as the epicentre of a special, large subspecies. Measurements from Western Australia presented by Johnstone & Storr (1998: 128), some of which would be of extra-tropical birds (wing 425-475 mm, sexes combined) are within the range of variation of the birds measured by me. Little is known of the isolated South Australian population, but as no name has been based on it, and as Condon, probably the only ornithologist who had access to material, did not accept more than one Australian subspecies, it can safely be left out of discussion. The egg-evidence provided by Olsen & Marples (1993) is intriguing, but requires confirmation, especially as the Osprey has an almost unbroken range from the south-west into the tropics of Western Australia. Even if confirmed, it would only doubtfully qualify for recognition in nomenclature. Therefore I join with confidence those authors who reject *melvillensis* and place it in the synonymy of *cristatus*.

The type locality originally given for *Pandion haliaetus cristatus* was "la Nouvelle Hollande". Mathews (1912: 254), without explanation, misquoted this as New South Wales. The following year, Mathews (1913: 113) substituted Tasmania, again without mention of the originally-given type locality, and without stating that this was a restriction. Later, he corrected the omission, quoting both the originally-given type locality, and the restriction to Tasmania, true, without an explanation of the basis for this restriction (Mathews, 1915/1916: 254; 1927: 267). The restriction is not an obvious one, as *Pandion haliaetus* is of problematical occurrence in Tasmania (Green, 1977: 17). In the 19th century, however, Gould is believed to have personally taken a specimen in the Recherche Bay, southern Tasmania (Gould, 1848, 1865: 22). The specimen still exists and was thought to be the type of *Pandion leucocephalus* Gould (a junior synonym of *P. h. cristatus*), by Stone & Mathews (1913: 147). De Schauensee (1957) has not followed this, and rightly, for the original description of *P. leucocephalus* was communicated at the meeting of the Zoological Society of 26 December 1837, and was first published in April 1838. Gould only arrived in Tasmania (or Van Diemen's Land as it was then called), in September 1838 (cf. Whittell, 1954: 88). In both descriptions of *P. leucocephalu*s, the type locality is Australia, without any indication that would justify a restriction.

In spite of Gould's (1848) definite statement (made some ten years later): "I myself shot it in Récherche Bay, at the extreme south of Van Diemen's Land", and the presence of a mounted specimen so labelled, I must admit to having a slight but gnawing doubt about his record of *Pandion haliaetus* from Tasmania; one reason is that if the species does occasionally visit Tasmania (as I am quite prepared to believe), Recherche Bay on the south coast is about the last place one would expect it to reach. The other is that *Haliaeetus leucogaster* is common there, and presumably was so in Gould's time, but was not especially mentioned by him. Even Australians are not always fully aware of the total lack of reliable records from Tasmania. For example, Sharland (1958: 88) has this to say about its occurrence there: "Uncommon...The Osprey is so little known in Tasmania that odd birds which appear along the coast could be passed off for Sea Eagles if not carefully examined...If it does inhabit Tasmania and is not merely a visitor from the mainland, then it must keep to remote parts of the coast, because it is seldom seen. Occasionally a bird turns up on Flinders Island". Simpson (1972: 100) claims that:

"Although they range right around the Australian and Tasmanian coastline...".

Even in Victoria, the Osprey is a surprisingly rare visitor. Wakefield (1958) stated that: "There is no authentic record for Victoria", and several of the few subsequent records have later been queried (Cooper, 1975: 86).

Nowhere does Mathews say on what his fixation of Tasmania as the type locality of *P. h. cristatus* was based, but it is apparent that this was because he (mistakenly) believed Tasmania to be the type locality of the synonym *P. leucocephalus*. Even had he been right about Gould's Tasmanian bird, there is no logic here: the fact that Gould may have obtained a bird in Tasmania in 1838/1839, can have no bearing on the place in "la Nouvelle Hollande" where, some thirty years earlier, a French expedition collected the type of *P. h. cristatus*. Hartert's (1929) correction of the type-locality of *cristatus*: "Australia, not Tasmania", was published in too succinct a way to have had much impact on later revisers. Amadon (1941) accepted the restriction to Tasmania, and rejected Hartert's correction, on the assumption that the French expedition (the Expédition Baudin) which may have brought the type of *P. h. cristatus* home: "did most of its work in Tasmania". This is not entirely correct, for considerable time was spent along the coast of Western Australia, and visiting coastal islands, where *P. haliaetus* is still a regular breeding-bird. It illustrates well the arbitrary way in which some ornithologists made type locality restrictions and designations in the first quarter of the 19th century.

The examination of the material from the Archipelago leads to some further comments. Smythies (1957: 585) mentions that Coomans de Ruiter had found the species breeding on the Karimata Islands, off West Borneo, but Smythies has misread this publication, for in it, Coomans de Ruiter (1936: 49) expressly states that he never found the species breeding and had never obtained or received its eggs. Smythies must have become aware of his error very soon, for three years later he did not mention breeding and even stated that the resident subspecies *melvillensis* or *cristatus* was not known from Borneo, all records of Ospreys from Borneo to date being of migrants of the nominate race (Smythies, 1960: 160). Twenty years later the position was still the same (Smythies, 1981: 57), albeit with the addition of some possible sight records. However, a mounted ♂, 2.ix.1844, Pagattan, Borneo, collected by Schwaner (RMNH cat. no. 5), belongs undoubtedly to the subspecies *cristatus*. It was already recorded by Schlegel (1862: 23).

Considering that *P. h. cristatus* is not uncommon and ranges throughout the Archipelago, it is surprising how few breeding records there are. The only definite records I know of are from Madu and Kalao tua (v. Plessen, in Meise, 1929: 480), and West Java (Hoogerwerf, 1969/1971: 462). White & Bruce refer to breeding on Lombok, of which I have failed to find the reference, unless it is Rensch's statement that a bird collected there had large gonads. There is no evidence that the population is augmented in the southern winter by migrants from Australia, as has sometimes been suggested (cf. Dickinson et al., 1991: 120). Towards the southern part of the range in Western Australia, the adult birds are sedentary, and the young disperse, rather than migrate (Holsworth, 1965).

Of the two birds labelled as being from Australia in the RMNH collection, I have no reason to doubt the provenance of one (RMNH cat. no. 1, purchased from Frank in 1841). The other one, however, has the feathers of the head conspicuously brown and I suspect strongly that it is a mislabelled specimen of the nominate race. This bird (RMNH cat. no. 2), was also purchased from Frank, in 1861, and bears a note on its origin:

"voyage de Gardner" (see also Schlegel, 1862: 23, where it is cat. no. 10). In the remarkably complete work of Whittell (1954), I have failed to find a Gardner who could have been active in Australia around 1860, and this compounds the doubt I have about the specimen. Gardner is more likely not to have been a traveller, but the London natural history dealer of that name, who was in business around the middle of the 19th century and traded in bird-skins from all continents (Salvin, 1882: xi). With such a background, there must have been ample opportunity for a mix-up in labelling. Brown & Amadon (1968: 196) differentiate *P. h. cristatus* and *P. h. melvillensis* on the basis of small size and by having: "a pure white head, not streaked on crown". White (1975b) qualified this: "It should be noted that the crown in *cristatus* is not always pure white and some dark brown spots may be present". But all specimens examined by me have at least a narrow brown median band, longitudinally, from the hind-crown to the nape. Some specimens from within the range of the nominate race have heads almost as white as *cristatus*, and support Mathews's opinion, quoted above, that *cristatus* is only an ill-defined subspecies.

The statement by Dickinson et al. (1991: 119) that this species: "fishes inland, and more rarely coastal", is certainly not applicable to *P. h. cristatus*, which is almost entirely coastal in distribution and feeds mostly on marine and estuarine fish.

Addendum.— There are still no recent records from Tasmania (Green, 1993: 14) and my doubt about Gould's record increased so much that in my opinion the species should be eliminated from the Tasmanian avifaunal list. Davison (in Smythies, 1999: 209) repeated the erroneous claim first made by Smythies (1957), but soon withdrawn by that author, that Coomans de Ruiter would have found this species nesting in West Borneo. He cannot have read the paper by Coomans de Ruiter, as is also evident from the fact that he omits mention of nidification of *Accipiter virgatus* in lowland West Borneo, reliably recorded in the publication (Coomans de Ruiter, 1936) and further discussed by Mees (1981: 381-382.

To the meagre records of nesting in the Archipelago, Komodo can be added (Bishop in Verhoeye & Holmes, 1998: 13). In this publication the error is repeated, based on a mistranslation by Pfeffer, that Hoogerwerf would have seen *Pandion haliaetus* on Komodo.

Aviceda subcristata timorlaoensis (A.B. Meyer)

Baza timorlaoënsis Meyer, 1893, Abh. Mus. Dresden, 1892/93 (3): 5 – Timorlaut.

Collectors.— Weber, Everett.
Material.— ♀, xii.1888, Maumeri (Weber, RMNH cat. no. 1).

Notes.— It is perhaps surprising that, since Everett obtained "a series" in 1896, this conspicuous bird has not been recorded again from Flores. The use of the name *timorlaoensis* for the Flores population follows tradition and current usage, but is by no means definitive. Lack of adequate material prevents me from going into this. A few notes on the adjacent subspecies *pallida*, described from the Kei Islands, are, however, perhaps not out of place.

The original description of *pallida* reads: "In der Färbung wie die vorigen Formen, aber kleiner"; the two preceding forms are the nominate one, and *timorlaoensis*. Peculiarly, Stresemann says nothing about differences in plumage, and therefore it is difficult to understand why he regarded the name *pallida* as appropriate. Actually, the meticulous

Siebers (1930: 249) observed that some specimens of topotypical *pallida* had very pale under tail coverts. This was followed by the descriptions of *pallida* by Brown & Amadon (1968: 210) as "very pale ... pale grey upper breast", and by White & Bruce (1986: 115): "paler above and on the breast, ventral barring less heavy". I can confirm that the two specimens in Leiden also show the character of paleness, and thus support the validity of *pallida*.

Measurements:	wing	tail	tarsus	exposed culmen	culmen from cere
♀	303	207	33	26	19.8

Pernis ptilorhynchus orientalis Taczanowski

Pernis apivorus orientalis Taczanowski, 1891, Faune orn. Sibérie Orientale, Mém. Acad. Imp. Sci. St.-Petersbourg (7) 39: 50 – Koultouk sur le Baïkal méridional; l'embouchure de l' Oussouri au 48° L. N., et.... l'îlot Askold au 43° L. N.

Collector.— Schmutz.
Material.— ♀, 2.xii.1971, Lo Kong, 900 m (Schmutz, RMNH no. 81111).

Notes.— This is only the third specimen of *P. ptilorhynchus orientalis* to be recorded from anywhere east of Java, the previous records being from Saleyer and Kisar (cf. White, 1973a). The measurements of the specimens from Flores and Kisar prove that they belong to the subspecies *orientalis*, a migrant from north-east Asia, as was to be expected. According to Stresemann (1940b: 163), the specimen from Saleyer is also *orientalis*.

The subspecies wintering in Java has generally been considered also to be *orientalis* or its synonym *japonicus* (cf. Bartels in Hartert, 1922: 2207; Bartels, 1923; Chasen, 1935: 79; Stresemann, 1940b), but Vaurie & Amadon (1962) decided (on the basis of one immature specimen from that island, and a re-interpretation of a series of measurements published by Stresemann but provided by Bartels), that it is *ruficollis* and not *orientalis* which winters in Java. This was repeated by Vaurie (1965: 149), but Brown & Amadon (1968: 221) and Stresemann & Amadon (1979: 287-288) have quietly and without explanation reverted to excluding *ruficollis* and including *orientalis* in the avifauna of Java. In the meantime, Wells & Medway (1976) had demonstrated convincingly that two winter birds from Perak were *orientalis* (a specimen from Trang showed somewhat mixed characters) and concluded that the occurrence of *ruficollis* in the Malay Peninsula remained unconfirmed. In these later publications it is also suggested that *ruficollis*, which breeds in south-eastern Asia, is not or at most slightly migratory. Nevertheless, the series from Java in the RMNH (mostly from the Bartels collection), deserves further study, for which, unfortunately, I did not have the time before leaving Holland.

In the original description of this species, the spelling of the name was *Falco ptilorhyncus* (cf. Temminck, 1821: pl. 44). It was emended to *Pernis ptilorynchus* in the text, and to *Pernis ptilonorynchus* on the caption of the plate, by Stephens (1826: 44, pl. 35). Subsequently to *Falco ptilonorhynchus* by Temminck (1839: 3) himself. Later, another emendment, *P. ptilorhynchus*, came into general use (for example, Stresemann, 1940b), so that there was a choice of five different spellings. As *ptilorhynchus* is now the most commonly used spelling, I am also using it, although I realise very well that under the

Rules the original spelling, *ptilorhyncus* would have to be retained. Cases like this one have been sanctioned in the new edition of the Code (ICZN, 1999: art. 33.2.3.1).

Measurements:	wing	tail	tarsus	bill from fore-head feathers	bill from cere	wing tip
Flores ♀	ca. 470	257	63	40	26	147
Kisar ♀	ca. 470	280	65	(bill damaged)		151

Both specimens are in moult. The bird from Flores shows moult in wings and tail; in the wings, on each side, primary 5 is very short, primary 6 is short; curiously, the following primaries (7-10) are not clearly new. The bird from Kisar is in the last stage of primary moult, with only the outer (1st) primary not yet fully grown; its tail moult is completed. Vaurie & Amadon (l.c.) have illustrated the tails of adult and juvenile individuals, showing the adult female with three weaker bands between the dark terminal and middle bands, the juvenile female with four. The Kisar bird, although its tail cannot have the juvenile pattern (as it has just been moulted), has six of these bands, pointing to a considerable amount of individual variation in this character, as indeed Vaurie & Amadon mentioned.

Elanus caeruleus hypoleucus Gould

Elanus hypoleucus Gould, 1859, Proc. Zool. Soc. Lond. 27: 127 – Vicinity of Macassar, Celebes.

Collectors.— Van der Sande (1, ZMA), Verheijen (1, MCZ), Schmutz.
Material.— (?), 18.iii.1908, flat coastal region east of Maumere (Van der Sande, ZMA no. 13729); ♀, 1.vii.1969, Tjeréng (Schmutz, RMNH no. 66085); ♀? nestling, 14.vii.1969, Tjeréng (Schmutz, RMNH no. 66086). Iris of adult red, of nestling dull brown.
Egg: c/1, 2.viii.1955, Bénteng Djawa (RMNH no. 70064).

Measurements and weight:	RMNH no. 70064	40.7 × 32.5	1.785

Verheijen (1964) listed breeding in August and October, but the October-record was based on misidentified eggs, and has to be withdrawn. The nestling provides evidence for eggs in late May/June, and so does one recorded by Paynter (1963)

Notes.— The two adult specimens have been discussed, and their measurements provided, elsewhere (cf. Mees, 1982a: 24-34).

Stresemann (1939: 318) has given a reconstruction of the distributional history of this subspecies: "*E. c. hypoleucos* [sic] hat folgendes Wohngebiet: Philippinen, Celebes, Kalao, Sumba, Lombok, Java, Sumatra, Süd-Borneo. Bei dieser Art vermute ich die Ausbreitung von den Philippinen aus nach Süden über Celebes-Flores, von dort ostwärts bis Sumba, westwärts bis Sumatra". Since this was written, the range of *E. c. hypoleucus* has been filled out further, in particular by its discovery in Timor and New Guinea. Interestingly, on 28.ix.1984 I observed an individual on the islet of Goeang, off the west coast of Saleyer, another link between Sulawesi (Celebes) and Flores. Nevertheless, in the light of present knowledge, Stresemann's reconstruction is no longer the obvious one. Some years ago I measured a fair amount of material of this form (Mees, l.c.) and found that continental specimens (from Thailand and Malaya, poorly represented in

collections) average about 5% smaller in linear measurements than most insular populations. Specimens from Sumatra, however, average some 2% smaller than birds from Java, Sulawesi and the Philippines; in other words they are intermediate between continental birds and birds from Java, etc. It seems more logical to consider the Sumatran birds an intermediate link, than to believe that first the Philippines were colonized from the Asiatic mainland, with an increase in size, and that the subspecies subsequently extended over Sulawesi (Celebes) and Flores to Java, and finally to Sumatra. where its size became autonomically reduced when it approached the continental populations. Another point is that in Stresemann's reconstruction one would expect the species to have come by way of Taiwan, rather than with a direct long jump from southern China to the Philippines, but that at present it does not occur on Taiwan. Finally, the concept of *E. c. hypoleucus* coming from Asia and spreading comparatively recently to the Philippines and Indonesia, seems somewhat simplistic in the light of the knowledge that the genus *Elanus* must be a fairly old resident in Australia, as is apparent from the presence of two species there. As I have pointed out before, *E. c. hypoleucus* is as well-differentiated as other forms of its genus, currently regarded as distinct species. It may be assumed to be an old resident rather than a new colonist in the region, but if an expansion in the sense understood by Stresemann has taken place, it is likely to have been through Thailand/Malaya (small) and Sumatra (intermediate) to Java, etc. (large). The as yet insufficiently-known New Guinea population may be the largest of all, which fits into this concept.

The genus *Elanus,* with its limited number of well-differentiated forms, distributed over six continents, would make an excellent subject of a comprehensive zoogeographical study or a monograph.

Haliastur indus intermedius Blyth

[*Haliastur*] *intermedius* Blyth, 1865, Ibis (n. s.) 1: 28 – Java.

Collectors.— Semmelink, Allen, Everett, Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 16); ♂, 29.ix.1968, Nunang (Schmutz, RMNH no. 65186); ♀, 17.i.1969, Nunang (Schmutz, RMNH no. 65185); (?), 17.iii.1976, Nunang (Schmutz, RMNH no. 81037).
Eggs: c/1, not dated, Soa (RMNH no. 70077); c/1, 3.vi.1954, Potjong (RMNH no. 70078); c/2, 29.iii.1955, Tado (RMNH no. 70079); c/2, 12.v.1955, Montjok, Tado (RMNH no. 70080); c/2, 18.vi.1956, Bénténg Djawa (RMNH no. 70081); c/2, 3.v.1957, Potjong (RMNH no. 70082); c/2, 17.v.1957, Mano (RMNH no. 70083); c/2, 17.vi.1959, Pongkor (RMNH no. 70084); c/2, 20.vi.1959, Poéng (RMNH no. 70085); c/2, 29.xii.1959, Poéng (RMNH no. 70086); c/2, 5.iii.1961, Soa (RMNH no. 70087); c/2, 13.iii.1961, Soa (RMNH no. 70088); c/2, 21.iii.1961, Mataloko (RMNH no. 70089); c/2, 4.v.1963, Soa (RMNH no. 70090). The eggs are dull white, sparsely marked with red-brown dots.

Some measurements and weights:	RMNH no. 70079	51.7 × 43.1	3.7823
		52.8 × 43.6	3.6363
	RMNH no. 70084	50.0 × 42.4	3.9304
		50.1 × 42.4	4.0203
	RMNH no. 70086	51.8 × 42.2	3.8504
		53.9 × 42.9	4.0303
	RMNH no. 70090	51.1 × 41.9	3.5951
		53.9 × 41.9	3.9355

Haliaeetus leucogaster (Gmelin)

[*Falco*] *leucogaster* Gmelin, 1788, Syst. Nat. (ed. 13) 1: 257 – no locality.

Collectors.— v.d. Sande (1), Rensch (1).
Material.— ♀, 24.vi.1908, Celebesbaai (v.d. Sande, ZMA no. 13596).

Notes.— The skeleton from Bima, listed without comment amongst the birds from Flores by Büttikofer (1894: 290), was of course from Bima, Sumbawa. It was returned to Amsterdam, where it cannot now be found.

Circaetus gallicus gallicus (Gmelin)

[*Falco*] *gallicus* Gmelin, 1788, Syst. Nat. (ed. 13) 1: 259 – Gallia, rarior in reliqua Europa.

Collectors.— Semmelink, Everett (1), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 12); ♂ juv., 3.x.1971, Ruteng (Verheijen, RMNH no. 85133); ♂, 20.i.1973, Nunang (Schmutz, RMNH no. 81114).

Notes.— Previous records of this species in the Lesser Sunda Islands are from Lombok, Sumbawa, Flores, Roti and Timor (cf. Mees, 1975b: 120-123). Westwards it is now known to reach Bali, and even the extreme East of Java (van Balen & Compost, 1989). On 16.ix.1984, I observed an individual near Tg. Penitie, eastern Sumba, thus adding that island to its range. In order not to be accused of doing exactly what I condemn in others: making ex cathedra statements about observations new to islands, I translate here a passage from my diary about this observation: "walking along an interesting, although not particularly well-wooded, ravine, my attention was drawn by a not very long, whistling call: 'kyüü … kyüü … kyüü …', and after a moment an eagle appeared and flew rather low overhead. What drew my attention, apart from its huge size, was that the WHOLE under wings as well as the under surface of the body showed dark brown bars on cream. In these regions there is no other eagle showing this colour pattern", The voice further supports the identification.

In spite of the increased number of specimens now available, I am still unable to distinguish the isolated populations of the Lesser Sunda Islands satisfactorily from the nominate race. Therefore I feel obliged, still somewhat reluctantly, to keep these birds under the name of the nominate race. The reluctance is due to the fact that these populations must have been isolated for thousands of years, and that *Hieraaetus fasciatus*, which presumably has a similar history in these regions, has developed an endemic subspecies. The fact that they have not differentiated does, of course, by no means decrease the zoogeographical interest these isolated populations have. I consider it likely that the original colonisation of the Lesser Sunda Islands took place through an open country corridor from south-eastern Asia, in the Late Pleistocene, rather than that this isolated population would result from northern migrants that have remained behind in their winter quarters. In India the species is still widely distributed in open country (cf. *Tyto longimembris*).

Measurements:	wing	tail	tarsus	exposed culmen	culmen from cere	depth culmen	middle toe
♂ ad.	530	268	96	42	32	17	49
(?)	ca. 525	290	93	50	35	19.2	45

Accipiter soloensis (Horsfield)

Falco Soloënsis Horsfield, 1821, Trans. Linn. Soc. Lond. 21: 137 – Java (by inference: Solo).

Collectors.— Everett (1), Schmutz.
Material.— ♂, 18.x.1971, Tjeréng-Look (Schmutz, RMNH no. 84863); ♂, 28.xi.1978, Tjeréng-Look (Schmutz, RMNH no. 81044); ♂, 2.xii.1982, Nunang (Schmutz, RMNH no. 81043); ♀, 9.xii.1982, Nunang (Schmutz, RMNH no. 81047); ♂, ♀, 14.xii.1982, Nunang (Schmutz, RMNH nos. 81051, 81046); ♂, 14. i.1983, Nunang (Schmutz, RMNH no. 81316); ♂, (no date)Nunang (Schmutz, RMNH no. 81048).

Notes.— Previously, *Accipiter soloensis* was known on Flores from a single immature male only, obtained by Everett in 1896. The new records show it as a regular winter visitor. For further notes on this species, see Mees (1981: 398-400).

Accipiter novaehollandiae sylvestris Wallace

Accipiter sylvestris Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 487 – Flores.

Collectors.— Semmelink, Allen, Colfs, Weber, Everett, Endih (2), Rensch (1), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— ♀, ♂ juv., 1862, Larantoeka (Semmelink, RMNH cat. nos. 2, 3); ♂, 1880, Flores (Colfs, RMNH cat. no. 4); ♂, xii.1888, Sikka (Weber, RMNH cat. no. 5); ♀, 2.vi.1969, Nunang, 650 m (Schmutz, RMNH no. 65188; taken from nest with eggs); ♀ juv., 7.vii.1969, Nunang (Schmutz, RMNH no. 66081); ♂ juv., ♀ juv., 3.ix.1969, Nunang (Schmutz, RMNH nos. 66082, 66079); ♂, 18.ix.1969, Rekas (Schmutz, RMNH no. 84860); ♀ juv., 5.xi.1969, Nunang (Schmutz, RMNH no. 84859); ♀ med., 26.ii.1976, Nunang (Schmutz, RMNH no. 81041); ♀, 2.xi.1982, Nunang (Schmutz, RMNH no. 81050). Iris ♂ and ♀ dark brown, cere, eyelid and legs golden yellow, bill and nails black. An adult bird collected in November is in heavy moult, birds collected in April and September show no moult, the former is in moderately, the latter in more strongly worn plumage.
Eggs (fig. 12a): c/1, ix.1948, Mataloko, ca. 700 m (RMNH no. 70069); c/2, 4.iii.1956, Bénténg Djawa (RMNH no. 70070); c/2, 28.iii.1958, Tado (RMNH no. 70067); c/1, 20.vi.1959, Poéng (RMNH no. 70068); c/1, 9.v.1959, Potjong (RMNH no. 70071); c/2, 3.vi.1960, Potjong (RMNH no. 70072); c/2, 27.iii.1961, Mataloko (RMNH no. 70073); c/2, 2.vi.1969, Nunang (Schmutz, RMNH no. 75299, taken with skin no. 65188).
The eggs nos. 70067 and 70068 were originally identified as *A. virgatus* (see the discussion of that species).

Measurements and weights:	RMNH no. 70069	42.0 × 34.7	1.9561
	RMNH no. 70070	41.9 × 34.0	1.8545
		42.8 × 34.1	1.8675
	RMNH no. 70067	38.9 × 31.6	1.6528
		41.6 × 31.5	1.718
	RMNH no. 70068	40.4 × 31.6	1.6237
	RMNH no. 70071	41.6 × 33.6	1.6947
	RMNH no. 70072	40.6 × 33.2	1.5872
		43.1 × 33.6	1.7026
	RMNH no. 70073	42.8 × 35.2	2.226
		42.9 × 34.7	1.967
	RMNH no. 75299	39.2 × 32.4	- (large holes, evidently heavily incubated)
		42.2 × 32.5	

Notes.— The widely-distributed, strongly polytypical species *A. novaehollandiae*, as at present understood, is another relict from a period that the species concept was stretched to, and frequently beyond, its possible limits.The position of *sylvestris* as a subspecies of *A. novaehollandae* has been questioned, rightly in my opinion, for the Australian nominate *A. novaehollandiae* is strikingly different from the many forms occurring on islands to the north. A revision is required to establish more realistic species limits and therefore I retain for the moment the established trinomen *A. n. sylvestris.*

A. n. sylvestris is perhaps not primarily a bird-hunter, for the stomach of no. 65188 contained a frog, that of no. 66082 a lizard.

Measurements:	wing	tail	tarsus	entire culmen	culmen from cere	middle toe
4 ♂	174-188	132-141	49-54	20-22	13.4-14.1	25-27
	(181.5)	(137.3)	(51.6)	(21.0)	(13.9)	(26.0)
7 ♀	197-208	152-157	53.7-58	22.5-24.6	15.5-17	27-31.7
	(203.4)	(154.2)	(55.7)	(23.3)	(16.3)	(29.5)

Accipiter fasciatus wallacii (Sharpe)

Astur wallacii Sharpe, 1874, Cat. Birds Brit. Mus. 1: 95, 128, pl. V – Lombock, Bouru; by inference restricted to Lombok by Stresemann (1914c: 381).

Collectors.— Allen, Weber, Everett, v.d. Sande (1), Rensch (2), de Jong (2), Verheijen (2, MCZ), Verheijen/Schmutz.

Material.— ♂, xii.1888, Endeh (Weber, RMNH cat. no. 1); ♂, 13.ii.1969, Wangkung, Rahong (Verheijen, RMNH no. 65187); ♀ juv., 25.vii.1969, Nisar (Schmutz, RMNH no. 66078); ♀, 19.ix.1969, Sok, Ruteng (Schmutz, RMNH no. 66077); ♀ juv., 19.ix.1969, Sok-Rutung (Schmutz, RMNH no. 66080); ♀ juv., 24.x.1971, Nunang, 650 m (Schmutz, RMNH no. 84866); ♀, 11.x.1975, Nunang, 650 m (Schmutz, RMNH no. 81022). Iris ♂ and ♀ golden yellow, juvenile yellowish olive to sulphur-yellow, cere olive-yellow or olive; bill black, its base slate; legs yellow. Adult birds collected in September, October and December are undergoing their main moult; an adult bird collected in February shows no moult, it is in fresh plumage.

Eggs (fig. 12b): c/2, 4.v.1957, Potjong (Verheijen, RMNH no. 70066); c/2, 24.vi.1969, Nunang, 650 m (RMNH, Schmutz 135). These eggs are a little longer and broader than the eggs of *A. n. sylvestris*, which they otherwise resemble; they are also heavier.

Measurements and weights:			
	RMNH no. 70066	43.3 × 37.7	2.5321
		43.4 × 36.5	2.4478
	Schmutz 135	45.3 × 35.2	2.2500
		47.0 × 33.6	2.1921

Notes.— Of the clutches listed by Verheijen (1964: 198) under this name, only the one mentioned above belongs to this species, all others belong to *A. n. sylvestris.*

Weber's specimen (collector's no. 89), was identified by Büttikofer (1894: 289-290) as a "wahrscheinlich altes Weibchen" of *Astur sylvestris*. It was re-identified by Finsch as "wohl ♂" of *Astur torquatus*, and on Finsch's label is in pencil added the name *Accipiter fasciatus wallacii* ♂ ad. by Stresemann.

Brown & Amadan (1968: 501) describe this subspecies as small (wing ♂ 210, ♀ 237; one of each sex?), and *A. f. tjendaenae* from Sumba as larger (wing ♂ 207-219, ♀ 247-252). The specimens of *wallacii* measured by me are clearly larger; they support Wattel (1973:

137) and White & Bruce (1986: 122-123), who show the two subspecies as practically identical in size.

The inclusion of Sulawesi, Halmahera and Ceram in the range of *A. fasciatus* by Marchant & Higgins (1993: 136, 137) is incomprehensible: even taken in its widest possible sense, the range of the species never extended to these islands.

Measurements:	wing	tail	tarsus	entire culmen	culmen from cere	middle toe
2 ♂	229,[220]	161,166	60, 62	19.6, 21	15, 16.2	29.5, 31
4 ♀	250-257	185-192	66.7-68	22.7-27	17-18	33-35.2
	(253.5)	(188.3)	(67.3)	(24.6)	(17.4)	(33.8)

Accipiter virgatus quinquefasciatus Mees

Accipiter virgatus quinquefasciatus Mees, 1984, Zool. Meded. 58: 314 – mountain forest above Ruteng, Flores, ca. 1500 m.

Collectors.— Everett (1), Schmutz.
Material.— ♂ juv., xi.1896, Mt. Repok, Mangarai, above 3500 ft. (A.H. Everett's native collector, AMNH no. 533861); ♂, 26.vi.1978, mountain forest above Ruteng, ca. 1500 m (Schmutz, RMNH no. 81024, holotype).
No eggs (see below).

Notes.— This subspecies remains known from the two specimens listed above.

Verheijen (1964: 198) recorded, with a query, breeding (nest or eggs found). Two clutches of eggs from his collection, identified as *A. virgatus*, are too large to belong to this species, and are evidently referable to *A. n. sylvestris*.

Measurements:	wing	tail	tarsus	entire culmen	culmen from cere	middle toe
♂	153	118	47	-	10.5	28
♂ juv.	151	113	48	-	10.5	27.5

Accipiter gularis (Temminck & Schlegel)

Astur (Nisus) gularis Temminck & Schlegel, 1844, Fauna Japonica, Aves: 5, pl. II – Japon.

Collectors.— Verheijen/Schmutz.
Material.— ♂, 18.xi.1968, Nunang (Schmutz, RMNH no. 65190); ♀, 15.iii.1969, Nunang (Schmutz, RMNH no. 65189); ♀, 16.xii.1970, Ruteng (Verheijen, RMNH no. 84857); ♂, 16.x.1971, Tjeréng (Schmutz, RMNH no. 84858); ♂, 31.iii.1976, Ruteng (Verheijen, RMNH no. 84862); ♂, 13.xii.1977, Tjeréng (Schmutz, RMNH no. 81045).

Notes.— Although it has not been recorded by previous authors (indeed, there is only one previous record from the whole chain of Lesser Sunda Islands, a subadult male from East Timor, collected by Wallace in 1861), the material listed above shows that this is a regular winter visitor to Flores. There are recent records (presumably sight records) from Sumbawa (Johnstone et al., 1996: 166). No details are provided, not even the name of the observer. The dates of these observations: 27 July (one bird) and 28 July (two birds), seem unusual (cf. Mees, 1981: 394), but are given without comment.

Hieraaetus fasciatus renschi Stresemann

Hieraëtus fasciatus renschi Stresemann, 1932, Orn. Mber. 40: 78 – Sumbawa: Wawo 500 m.

Collectors.— Verheijen/Schmutz.
Material.— ♂, 21.viii.1971, Ruteng (Verheijen, RMNH no. 66076); ♀, 8.xi.1971, Siru, 150 m (Schmutz, RMNH no. 81113).

Notes.— The following specimens of this subspecies are now known: Sumbawa (♂, type), Flores (♂, ♀), Timor (♂), Wetar (♂), Luang (2 ♂). Assuming all sexing to be correct, it would seem that the female sex was hitherto unknown. However, the bird from Wetar, for which Hartert (1904: 189) recorded a wing-length of 495-500 mm, seems very large for a male, and I presume that it is the same specimen listed without comment as a female, with a wing-length of 493 mm, by Brown & Amadon (1968: 677). On the other hand, published measurements of the nominate race show so much overlap between the sexes, that caution is indicated.

Measurements:	wing	tail	tarsus	exposed culmen	culmen from cere	depth of bill	middle toe without nail
♂	450	225	100	45	31.3	23	60
♀	470	264	107	45	33	25	64

Hieraaetus kienerii formosus Stresemann

Hieraaëtus kieneri formosus, Stresemann, 1924, Orn. Mber. 32: 108 - Nord-Celebes.

Collectors.— None.

Notes.— Individuals of this species were reported as having been seen on four occasions, in 1986 and 1989, by Verhoeye & King (1990). As Doherty collected a female on Satonda, an islet off the north coast of Sumbawa, in May 1896 (cf. Hartert, 1896: 575), the occurrence on Flores is not unexpected.

Spizaetus (cirrhatus) floris (Hartert)

Limnaëtus limnaëtus floris Hartert, 1898, Novit. Zool. 5: 46 – Flores.

Collectors.— Semmelink, ten Kate, Everett (2), Verheijen (2, MCZ), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 1, syntype); (?), April 1891, Sika = Sikka (ten Kate, RMNH cat. no. 2); (?)pullus, 14.x.1970, Orong (Verheijen, RMNH reg. no. 65184); ♂, 30.i.1976, Waé-Wako, 180 m (Schmutz, RMNH reg. no. 81112); (?), without data, received in 1974, Flores (Verheijen, RMNH reg. no. 66257).
Eggs (fig. 12c): c/1, 20.vi.1954, Todo (RMNH reg. no. 70074); c/1, 9.vi.1955, Potjong (RMNH no. 70075); c/1, 15.v.1955, Mano (RMNH reg. no. 70076).

Measurements and weights:			
	RMNH no. 70074	69.8 × 56.3	9.27
	RMNH no. 70075	73.0 × 55.1	9.51
	RMNH no.70076	71.0 × 53.4	weight not taken, as a large piece of the shell is missing

Notes.— Ten Kate's specimen from Sika was recorded by Büttikofer (1892: 193) and by ten Kate (1894: 27) himself, but this has apparently escaped the attention of later authors (cf. White & Bruce, 1986: 131).

Systematically, the genus *Spizaetus* is still very insufficiently known. The current trinomial for the Flores population, *S. cirrhatus floris*, dates from a period, not so long ago, that it was custom to stretch the species concept as widely as possible. The validity of this combination may now be questioned at two levels. The first is whether *S. limnaeetus* from south-eastern Asia, east to Java and Borneo, has properly been included as a subspecies in *S. cirrhatus.* Doubt about this has been expressed several times (cf. Amadon & Bull, 1988: 324). The second is whether, when *limnaeetus* is separated specifically from *cirrhatus,* the form *floris* would still be regarded as conspecific with *limnaeetus,* or whether the logical next step would be to give it also specific status. I incline strongly to the last-mentioned view.

Brown & Amadon (1968: 694) give for *S. c. floris* the unexpectedly-large wing-measurements of 485-495 mm. As demonstrated below, the largest bird examined by me has a wing-length of 470 mm. Hartert (1898a: 46) recorded for two males 437 and 450 mm, Rensch (1931a: 512) for a male 438 mm (Rensch believed his bird to be a juvenile, but in fact it was an adult). Rensch's second specimen was misidentified and later became the type of *Hieraaetus fasciatus renschi*. Hartert (1904: 189) recorded under the name *S. c. floris* a bird from Wetar with a wing-length of 495 mm. Later, Mayr (1941a) re-identified this bird as *Hieraaetus fasciatus renschi.* It occurred to me that the measurements for *S. c. floris* presented by Brown & Amadon could have been taken from such misidentified specimens, and I wrote to Dr Amadon to ask, whether he could throw light on the matter. From his reply (in litt., 15.iii.1988) I quote: "In any case ignore them! I suspect, as you say, there was some sort of mix-up with the local race of *Hieraaetus fasciatus*".

Measurements:	wing	tail	tarsus	entire culmen	culmen from cere
(?) cat. 1	450	260	116	54	36½
(?) cat. 2	470	286	121	52	35
♂ 81112	460	277	123	49	35
(?) 66257	460	290	115	48	34

Falco moluccensis subsp.

Collectors.— Semmelink, Allen (at least 3, cf. Sharpe, 1874: 430), Martens, Weber (4, of which 2 in ZMA), Everett, Rensch (5), de Jong (2), Verheijen (2, MCZ), Verheijen/Schmutz.

Material.— [♂], 1862, Larantoeka (Semmelink, RMNH cat. no. 17); ♂, 19/24.xii.1888, Koting (Weber, RMNH cat. no. 1); ♀, 1/8.i.1889, Endeh (Weber, RMNH cat. no. 2); ♂, 18.i.1969, Nunang (Schmutz, RMNH no. 66083); ♀, 16.vii.1969, Sok-Rutung (Schmutz, RMNH no. 66084); ♂ juv., (?)juv., 27.viii.1969, Rahong (Verheijen, RMNH nos. 65196, 65195); ♀, 27.ix.1969, Ruteng (Verheijen, RMNH no. 65197); ♂, 12.xii.1975, Nunang 650 m (Schmutz, RMNH no. 81049). The birds collected in December (2) and January (2) are undergoing their main moult.

Eggs (figs 12d, 13a): 23 clutches of 1 (6 ×), 2 (7 ×), 3 (5 ×) and 4 (5 ×) eggs, collected in the months April (10), May (6), June (3), August (3), and September (1). The short-oval eggs are white or pinkish white, so heavily spotted and dotted with red-brown, that this dominates the ground colour.

Measurements and weights of some clutches:	RMNH no. 70091	35.0 × 30.9	1.4063
		36.1 × 31.1	1.4137
		37.8 × 31.2	1.2786

RMNH no. 70092	37.3 × 31.7	–
	37.9 × 31.6	1.4017
	38.2 × 31.1	1.5284
	39.2 × 31.4	1.5388
RMNH no. 70093	38.2 × 31.3	1.6362
	38.4 × 31.7	1.7362
	39.3 × 31.5	1.656
	39.8 × 31.9	–
RMNH no. 70094	37.5 × 31.6	–
	37.6 × 31.0	1.5170
RMNH no. 70095	37.1 × 31.8	1.4054
	38.0 × 31.7	1.4844
	38.1 × 31.6	1.3769
RMNH no. 70096	39.3 × 31.6	1.6484
	39.7 × 32.0	1.4783
	39.8 × 32.3	1.7433
	42.6 × 31.4	1.7352
RMNH no. 70098	36.3 × 30.6	1.498
	36.9 × 30.5	1.5015
	37.3 × 30.3	1.4716
RMNH no. 70099	37.4 × 31.2	1.5448
	38.5 × 31.0	1.6549
	38.5 × 31.1	1.6341

Notes.— The four specimens collected in December/January are in the last stage of primary moult; two collected in July and September show no moult and are in rather worn plumage. Compare this with the egg-dates.

There is little doubt that *F. moluccensis* has been oversplit at the subspecific level, but the way White & Bruce have disposed of subspecies, was not justified by the meagre material they actually examined. A revision on the basis of a large material is required. Actually, the Leiden collection would form a good basis for it, but it is one of the problems I did not find the time to solve before leaving Leiden. I did note, however, that birds from the North Moluccas in the Leiden collection are darker than those from the central islands and suggest that *F. m. bernsteini* is a valid subspecies. In view of the meticulous care Siebers used to take over the description of subspecies, I would also hesitate to reject *F. m. renschi* from Sumba, without a renewed investigation.

Measurements:	wing	tail	tarsus	culmen from cere
4 ♂	202+-224	142-150	33-36	14-16
	(212)	(146)	(34.8)	(14.8)
3 ♀	218-238	146-156	35-38	15-16
	(228)	(151.3)	(36.3)	(15.5)

Falco cenchroides cenchroides Vigors & Horsfield

[*Falco*] *Cenchroides* Vigors & Horsfield, 1827, Trans. Linn. Soc. 15: 183 – Australia = Parramatta, N.S.W., where Caley, the collector of the type material, lived.

Collector.— Endih (1).
Material.— None.

Notes.— The single bird collected at Reo by Endih, in 1911, remains the only record. On the islands north of Australia and west of New Guinea, the species appears to be no more than a rare straggler. It did, however, colonize Christmas Island (Indian Ocean) around 1950, and was already common there when I visited that island in 1961.

Falco longipennis hanieli Hellmayr

Falco longipennis hanieli Hellmayr, 1914, in Haniel, Zool. Timor 1: 100 – Bonleo, Westtimor.

Collectors.— Allen (1), Endih (1), Rensch (1), Verheijen/Schmutz.
Material.— ♀ juv., 1.iii.1969, Sésok, 900 m (Schmutz, RMNH no. 65192); ♂ ad., 15.xi.1969, Paku, 400 m (Schmutz, RMNH no. 65195); ♂ im., 22.ii.1970, Ruteng (Karot) (Verheijen, RMNH no. 65191); ♂ subad., 25.x.1971, Nunang, 650 m (Schmutz, RMNH no. 84856); ♂ ad., 12.xi.1971, Nunang (Schmutz, RMNH no. 84853); ♀ ad., 9.xii.1971, Nisar (Schmutz, RMNH no. 84855); ♂ ad., 7.vi.1972, Nunang (Schmutz, RMNH no. 84854); ♀ ad., 7.vi.1972, Nunang (Schmutz, RMNH no. 85430); ♂ juv., 9.vi.1972, Nunang (Schmutz, RMNH no. 84852); ♀ ad., 12.xii.1975, Nunang, 650 m (Schmutz, RMNH no. 81040). Adult birds collected in October, November (2) and December (2) were undergoing their main moult.
Egg (fig. 13b): c/1, 5.ix.1958, Potjong (RMNH no. 70097). The egg was identified as belonging to *F. moluccensis*, but is too large; I consider it a safe assumption that it belongs to the present species.

Measurements and weight:	RMNH no. 70097	43.3 × 31.9	1.803

Notes.— There is a conspicuous difference in size between the sexes, the female being much larger than the male. There is little or no difference in plumage: possibly the ♀ has slightly more extensive and darker brown on the under surface than the ♂, but the difference is dubious. Juvenile birds of both sexes differ from the adults by having light brown edges to the feathers of the mantle; the central pair of rectrices is black with light brown bars (in adults, black with grey bars), and the black feathers of the forehead (behind the white frontal band) have tiny brown tips.

Rensch's (1931a: 517) ♀ juv. from Dompoe, Sumbawa, with wing 217, tail 117, culmen 13 mm, has obviously been mis-sexed and must be a ♂.

All specimens examined belong to the subspecies *hanieli*. The nominate subspecies has been recorded from Flores (Stresemann & Amadon, 1979: 417), but in error, as was pointed out by Bruce (in White & Bruce, 1986: 135). I know of no evidence to support the claim by Marchant & Higgins (1993: 278) that some Australian birds winter in the Lesser Sunda Islands and suppose its basis to be this same erroneous record from Flores. Small-scale distribution maps in handbooks are rarely accurate; therefore it is not really surprising to see in Cade (1982: 187 fig. 21) the range of *F. longipennis* extended westward to cover the whole of Java. In contrast, the map in Marchant & Higgins (1993: 270) seems to suggest that the species is no more than a straggler to the Lesser Sunda Islands.

Measurements:	wing	tail	tarsus	culmen from forehead feathers	culmen from cere
6 ♂	218-227	110-115½	31.3-35	16.2-18	12.2-13.5
	(222.2)	(113,3)	(33.3)	(17.1)	(13.0)
4 ♀	242-255	123-126	34.5-38	18.5-19.6	15-15.3
	(250)	(124.5)	(36.7)	(19.0)	(15.1)

Dendrocygna arcuata arcuata (Horsfield)

Anas arcuata Horsfield, 1824, Zool. Res. Java: pl. (65) and text – Java.

Collector.— Schmutz.
Material.— ♀, 25.vi.1974, Pota (Schmutz, RMNH no. 85139).

Notes.— *D. arcuata* certainly breeds on Flores: a ♀ shot by Schmutz near Djoneng, on 1.ii.1977, contained a near-developed egg of 3 cm across.

In view of the fact that Watling (1982: 69) knew from Fiji only: "Two specimens, one of which was a juvenile, collected before 1870 from Nadi Bay (a location which could be either west Viti Levu or south-west Vanua Levu)", it is worth recording the following specimen: ♂ ad., end of July 1877, Nandi Bay, Viti Levu, leg. T. Kleinschmidt (RMNH cat. no. 31, ex Mus. Godeffroy no. 5716, original label), wing 194, culmen 42.3 mm. I further note, that Salvadori (1895: 155) reports the presence of three specimens in the British Museum: two from Viti Levu, leg. J.D. Macdonald, voyage of H.M.S. 'Alert', September (the voyage of the 'Alert' took place in 1878/1882, and Fiji was probably visited in 1879 or 1880) and one from Kandi, leg. E.L. Layard. These additional records suggest that in the seventies of the 19th century, *D. arcuata* was locally not rare on Viti Levu. Watling's Nadi Bay is the same as Nandi Bay, Viti Levu: the letter d in Fijian is pronounced as nd. Delacour (1954: 41) seems to be certain that "it has been exterminated by the introduced mongoose". The wing-length of the RMNH specimen clearly exceeds the measurements given for the subspecies *D. a. pygmaeus*, to which the presumably extinct Fiji population has been tentatively attached (cf. Mayr, 1945: 3).

There is also a specimen from New Caledonia in our collection (♂, no further particulars, from Verreaux in 1866, RMNH cat. no. 30). The specimen was published by Schlegel (1866a: 89) under the name of *Dendrocygna vagans*, with the cat. no. 18. This is the earliest published record of the occurrence in New Caledonia that I know of. Measurements: wing 199, culmen 46 mm. This does not help much in its subspecific identification, or whether there was a resident population in New Caledonia or birds found there were stragglers from Australia. Delacour (1966: 40) refers birds from New Caledonia to the nominate race. It becomes increasingly doubtful that a division into subspecies is meaningful.

Dendrocygna javanica (Horsfield)

Anas Javanica Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 199 – Java.

Collectors.— Endih (2, cf. Somadikarta & Noerdjito, 1982), Verheijen (a wing, MCZ, cf. Paynter, 1963), Schmutz.
Material.— ♀, 20.vi.1974, Kulang Lake, East Flores (Schmutz, RMNH no. 85138).

Notes.— Like the preceding species, Schmutz found individuals in breeding condition. Rensch (1931a: 504) published the first record of this species from the Lesser Sunda Islands on the basis of two females from Dompoe, Sumbawa, collected by Elbert on 21.xii.1909, preserved in the Senckenberg Museum. I should like to add that there are in Leiden also two females, from the same date, locality and collector (RMNH cat. nos. 30, 31).

Anas superciliosa rogersi Mathews

Anas superciliosa rogersi Mathews, 1912, Austral Av. Rec. 1: 33 – Augusta, West Australia.

Collectors.— Weber (1), Rensch (3), de Jong (2), Verheijen (1, MCZ), Verheijen/Schmutz (3, and eggs).
Material.— ♂, xi.1888, Reo (Weber, RMNH cat. no. 39); ♀, 27.x.1968, Ruteng (Verheijen, RMNH no. 65199); ♂, 23.xi.1968, Nunang (Schmutz, RMNH no. 66075); ♂, 2.vii.1969, Ruteng (Verheijen, RMNH no. 65200).
Eggs: c/10, 26.iii.1957, Mano (RMNH no. 70058); c/2, 28.ii.1961, Soa (RMNH no. 70059); c/1, 3.vi.1961, Soa (RMNH no. 70060); c/6, 9.vi.1961, Soa (RMNH no. 70061).

Notes.— This is obviously the commonest duck of the Lesser Sunda Islands. In this connection it is perhaps worth recording that in our collection there are no less than six specimens from Lombok, obtained by the "Sunda-Expedition" in May 1909 (RMNH cat. nos. 44-49).

In assigning these birds to *rogersi*, I am following contemporary usage, as no adequate topotypical material of the nominate race (from New Zealand) is available for comparison. Several authors have expressed doubt about the validity of *rogersi* (cf. Amadon, 1943: 2; Frith, 1967: 166), although others seem to have accepted it (cf. Delacour, 1956: 63; Johnsgard, 1979: 471). On the other hand, Condon (1975: 70) definitely rejected *rogersi* and included all Australian birds (and by inference also the populations of the Lesser Sunda Islands) in the nominate race, and this has been followed, without discussion, by Blakers et al. (1984: 76). A further study of the geographical variation of this duck is desirable.

In this connection it is worth drawing attention to the fact that in Australia this species is known to be a great wanderer, dependent as it is on the very unstable habitat provided by temporary floodings, etc. This would work against geographical variation. Mobile as they are, I cannot follow Van Marle & Voous (1988: 37, 68) in their suggestion, that birds from as far west as Sumatra (where they are supposed to be, or to have been, periodically numerous), would be or even could be "irruptive" migrant visitors from Australia.

Marchant & Higgins (1990: 1320, 1331) treat the species as monotypic, rejecting not only *rogersi*, but also *pelewensis*, claiming that such geographical variation as may exist is too minor for expression in nomenclature.

Measurements:	wing	tail	tarsus	exposed culmen
♂	260	84	41	53½
♂	[215]	78	42½	46½
♀	245	84	39	48

Anas gibberifrons gibberifrons S. Müller

Anas (Mareca) gibberifrons S. Müller, 1842, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 159 – Timor.

Collectors.— Allen (1), Weber (1, ZMA), Schmutz.
Material.— ♀, 23/25.xi.1888 (Weber, ZMA no. 13253); ♂, end vii.1969, Nanga-Lili (Schmutz, RMNH no. 81104).

Eggs; c/1, 27.vi.1956, Réo (RMNH no. 70062); c/8, 22.vi.1959, Dampék (RMNH no. 70063). I have no idea on what the record by White & Bruce (1986: 139) of breeding on Flores in August is based, and presume it to be an error.

Notes.— Previously, I have drawn renewed attention to the considerable differences between *A. g. gibberifrons* and the Australian *A. gibberifrons gracilis* (cf. Mees, 1982a: 22), as Ripley (1942a) did forty years earlier, but I still hesitate to follow Parker et al. (1985: 10), who treat them as different species. Apart from the conspicuous skull-character, the two forms show a close resemblance.

It is unclear why Van Marle & Voous (1988: 37, 68) should consider *Anas gibberifrons* in Sumatra as a "migrant from Australia", referring it to "*gibberifrons* or *gracilis*". Records of this species from Sumatra are unsatisfactory, and in my opinion do not qualify it for inclusion in the Sumatran list. If it does visit or colonize Sumatra, however, this would certainly be by birds from Java (*gibberifrons*) and not from Australia (*gracilis*)!

There is some inconsistency in the citation of the type-locality of *A. gibberifrons*: in the older literature and in a few more recent publications (Frith & Hitchcock, 1974: 123; Mees, 1982a: 22) it is given as Timor, but in authoritative recent works like those of Condon (1975: 70), Johnsgard (1979: 466) and White & Bruce (1986: 139), to mention just a few, this has been changed to Sulawesi. The facts are as follows: Müller (1842) described the species in a footnote, in an article on Timor. In the main text he records his observations made on Timor, and the description in the footnote is taken from specimens of both sexes collected on Timor. Following the description, however, the next paragraph of the footnote begins with: "Van deze eend heb ik ook een individu op Makassar verkregen, terwijl onlangs verscheidene exemplaren van dezelve door onzen reiziger Dr Forsten, van Menado, aan het Rijks-Museum zijn toegezonden geworden" [4]). Therefore, material from Makassar and Menado, although not described, was definitely included in the original publication, and has to be considered syntypical. If a restriction of the type locality is required, however, this should obviously be to Timor.

All this material is still present in Leiden: ♂, 1828/1829, Timor (RMNH cat. no. 1); ♀, iii.1829, Atapoepoe, Timor (RMNH cat. no. 2); ♀, iii.1828, Makassar (RMNH cat. no. 3), and five Forsten specimens from various localities in northern Celebes (RMNH cat. nos. 4-8). Perhaps not all of Forsten's specimens are syntypes, some may have arrived in Leiden after Müller's description was written.

Megapodius reinwardt reinwardt Dumont

Megapodius Reinwardt Dumont, 1823, Dict. Sci. Nat. (éd. Levrault) 29: 416 – d'Amboine, dans les Îles Moluques (errore!); corrected to Lombok by Schlegel (1880: 57), and here further corrected to the Banda Islands (see below).

Collectors.— Allen, Colfs, Everett, van der Sande (2), Rensch (1), Verheijen/Schmutz.
Material.— (?), 1880, Flores (Colfs, RMNH cat. no. 9); ♀, 20.xii.1907, Wai Moké, south coast of middle Flores, weight 0.55 kg (v.d. Sande, ZMA no. 25.831); ♂, 1.ix.1969, Nanga-Lili (Schmutz, RMNH no. 66069); ♂, 30.iii.1976, Ceréng, 300 m (Schmutz, RMNH no. 81108). Iris brown, bill and legs orange-yellow.

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[4]) Of this duck I have also obtained an individual at Makassar, whilst recently our traveller Dr Forsten forwarded several specimens from Menado to the Rijks-Museum.

Eggs: 54 eggs (in 35 lots), taken in the months January (4), February (22), March (13), June (1), July (3), August (1), October (3), November (1), December (3), and three not dated (RMNH nos. 70112-70142, 73656, 73657, 75498, 78404). The very large eggs have a soft, chalky shell, varying from yellowish chamois to light brown, which comes off easily when the surface is scratched, to show the white chalk underneath.

Some measurements and weights:	RMNH no. 70122	80.5 × 49.2	7.2856
	RMNH no. 70126	82.0 × 53.1	8.6565
	RMNH no. 70131	83.4 × 51.0	8.2351
		87.0 × 54.0	9.3206
		87.9 × 54.0	9.311

Notes.— *Megapodius reinwardt* was originally believed to be from Ambon, but that could not be correct, as Ambon is inhabited by a different, closely related species, *M. freycinet*. Like Reinwardt's other material, the specimen was insufficiently labelled (compare *Nectarinia solaris*). Discussing the holotype, Schlegel (1880: 57) noted: "individu rapporté par feu le Professeur Reinwardt. Ce savant voyageur ne nous ayant fait parvenir qu'un seul individu du Mégapode aux pieds rouges et cet individu originaire de l'Île de Lombock, comme je viens de le constater par l'etiquette originale...". Since then, Lombok has been generally accepted as the type locality.

Whereas from the systematist's point of view there can be no objection to the type locality Lombok, as that island is inhabited by the correct species and subspecies, historical evidence is against it. First, Schlegel's claim that the bird had an original label, giving its provenance as Lombok, is amazing. I have examined the type specimen, and it does not have an original label. One might think of a label that has become lost since Schlegel wrote, but that is most unlikely. The specimen is, and has been, mounted, for at least a century and a half. Former practice in Leiden was, when a specimen was mounted, to throw away the label (assuming there was one), and to write any particulars that were thought worth keeping, underneath the socle. A mounted specimen in the old collection with an original label, would be exceptional in the Leiden collection, and if it ever had one, it becomes completely incomprehensible why its provenance had earlier been thought to be Ambon, and was only corrected almost sixty years after its description. It may safely be assumed that Schlegel's story was based on faulty memory: it is known that Schlegel used to write from memory, and did not much checking up on facts, once his manuscript was written (Brouwer, 1954: 57). Perhaps Schlegel had seen a Wallace specimen from Lombok. This, however, is not the whole argument: Lombok might still be considered a satisfactory designated type locality. But Reinwardt never visited Lombok, and could not have collected a bird there. Reinwardt did call at Bima, Sumbawa, where he spent a few days (20-23.iii.1821), probably too short to do any bird collecting. However, Reinwardt spent five weeks (18.v-23.vi.1821) on the Banda Islands, within the range of *M. reinwardt*. Moreover, from Banda he sailed on to Ambon. The Banda Islands are, therefore, the obvious, and almost the only possible place for him to have obtained the type. Above I have corrected the type locality accordingly.

Measurements:	wing	tail	tarsus	entire culmen
♂	231	107	63.5	32
♂	240	85	66.5	30
♀	235	87	66.2	29
(?)	236	82	67	32

Coturnix ypsilophora raaltenii (S. Müller)

Perdix Raaltenii S. Müller, 1842, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 158 – omstreken van Babauw, Timor.
Synoicus ypsilophorus castaneus Mayr, 1944, Bull. Am. Mus. Nat. Hist. 83: 144 – Alor Island.

Collectors: Allen (few? – not in BM), Rensch (2), Verheijen (8, MCZ), Verheijen/Schmutz (many).
Material.— 26 specimens from Langkas in Rahong, 900 m, and Lumu (Verheijen, RMNH nos. 59783-59797, 65212, 85285-85294).
Eggs: 65 clutches of c/1 (7 ×), c/2 (14 ×), c/3 (12 ×), c/4 (8 ×), c/5 (9 ×), c/6 (3 ×), c/7 (4 ×), c/8 (6 ×) and c/9 (2 ×), collected in the months February (1), March (9), April (12), May (21), June (5), July (1), August (4), September (2), October (1), and nine insufficiently dated (RMNH nos. 70151-70214, 70172a). The eggs are white, almost without gloss, usually somewhat dirty.

Some measurements and weights:	RMNH no. 70175	28.8 × 22.6	0.8122
		29.4 × 23.3	1.0636
		30.2 × 23.3	1.0547
		30.2 × 24.3	0.9287
	RMNH no 70199	28.0 × 23.8	1.236
		29.6 × 23.9	1.2715
		29.7 × 23.7	1.1577
	RMNH no. 70200	27.6 × 23.6	1.0824
		28.3 × 24.0	1.0751

Notes.— In a previous paper I mentioned my inability to distinguish between these specimens, and specimens from Timor and Roti (cf. Mees, 1975b: 123). In this connection: Mayr (1944a: 144) had seen no specimens from Flores when he described *castaneus* from Alor, so that the inclusion of Flores into its range was only a guess. When Flores, Timor and Roti are inhabited by one subspecies *C. y. raaltenii*, it is no longer likely that Alor has a different one. White & Bruce (1986: 145) have given additional arguments for the non-recognition of *castaneus*, and I follow them.

Hitherto, the range of this species along the chain of Lesser Sunda Islands has been known to extend westwards only to Flores. In September 1984 I found it on the Tg. Pioen peninsula, northern Sumbawa, where it appeared to be quite common.

Coturnix chinensis chinensis (Linnaeus)

[*Tetrao*] *chinensis* Linnaeus, 1766, Syst. Nat. (ed. 12) 1: 277 – in China, Philippinis = China.
Excalfactoria chinensis palmeri Riley, 1919, Proc. Biol. Soc. Washington 32: 93 – Daroe, Java.
Excalfactoria chinensis lineatula Rensch, 1931, Mitt. Zool. Mus. Berlin 17: 473 – Badjawa, Flores.

Collectors.— Everett (no number given), Rensch (2), Verheijen (24, MCZ), Verheijen/Schmutz.
Material.— ♀, 1957, Rahong (Verheijen, RMNH no. 66261); 2 ♀, ix.1958, Rahong (Verheijen, RMNH nos. 66262, 66264); 2 ♀, ix. 1958, Ruteng (Verheijen, RMNH nos. 66263, 66265); ♂, ix.1959, Ruteng (Verheijen, RMNH no. 66266); ♂, 1960, Potjong (Verheijen, RMNH no. 66267); ♀, 19.x.1968, Rahong (Verheijen, RMNH no. 59800); ♂, 5.xi.1968, Wangkung, Rahong (Verheijen, RMNH no. 59798); ♂, 14.xi.1968, Rahong (Verheijen, RMNH no. 59799); ♀, xi.1968, Rahong, 900 m (Verheijen, RMNH no. 59801); ♂, 21. ix.1971, Gurung Wangkung, 900 m (Verheijen, RMNH no. 85165); ♀, 3.x.1971, Gurung, Langkas, 900 m (Verheijen, RMNH no. 85188); ♂, 4.x.1971, Gurung, Langkas, 900 m (Verheijen, RMNH no. 85166); ♂, 8.x.1971, Gurung, Langkas, Rahong, 900 m. (Verheijen, RMNH no. 85167); ♂, ♀, 9.x.1971, Gurung, Lang-

kas (Verheijen, RMNH nos. 85168, 85189); ♂, 11.x.1971, Suma, Langkas (Verheijen, RMNH no. 85169); ♀, 3.viii.1976, Lingko Cehet (Verheijen, RMNH no. 81301).
Eggs: 18 clutches of c/1 (1 ×), c/2 (5 ×), c/3 (2 ×), c/4 (7 ×), c/5 (1 ×) and c/6 (2 ×), collected in the months March (1), April (1), May (4), June (8), July (2), and two not dated; from Tado, Potjong, Méngé, Rentung Lelak, Bénténg Djawa, Mano, Mataloko, Tjara, Léwé (RMNH nos. 70215-70232). The eggs vary from olive brown to coffee brown, and are either plain, or have a variable number of very small dark brown spots.

Some measurements and weights:	RMNH no. 70229	23.0 × 18.4	0.2408
		23.4 × 17.7	0.2690
		23.8 × 19.0	0.2814
		24.2 × 18.8	0.2989
	RMNH no. 70230	25.0 × 18.6	0.4134
		25.0 × 18.8	0.3672
		25.6 × 19.4	0.4308
		25.7 × 18.9	0.4009
	RMNH no. 70231	24.2 × 19.5	0.3695
		24.2 × 20.0	0.4114

Notes.— The geographical variation of *C. chinensis* requires further study. Of the two subspecies here synonymized, *E. c. palmeri* was diagnosed as being: "Similar to *Excalfactoria chinensis lineata* from the Philippines, but the back and scapulars much mixed with slate color, the wing with much rufous, and the rufous of the breast more extensive". Riley had for comparison 12 specimens from the Philippines, two from Sulawesi (Celebes) and one from the Malay Peninsula (all ♂), but avoids mentioning the size of his sample from Java. Significantly, no mention is made of nominate *chinensis* to which at least Malayan birds had previously been ascribed. Note that Robinson & Kloss (1927) included Sumatra and Borneo into the range of *palmeri,* listing *E. c. caerulescens* Hachisuka, type locality Sarawak, as a synonym, but that Rensch (quoted below) referred Bornean birds to *lineata.* The type-locality of *palmeri,* Daroe, is in the south-western part of the Residentie Batavia (as it was then), not in Bantam as claimed by Deignan (1961: 71).

The diagnosis of *E. c. lineatula* reads: "Die 3 vorliegenden ♂, wie auch ein ♂ von Flores aus dem Tring-Museum, unterschieden sich von der Java-Rasse *palmeri* Riley durch stärkere braunschwarze Fleckung der Oberseite, wodurch sie weniger schiefergrau wirken. Die hellen Schaftstreifen der Oberseite sind viel feiner als bei Stücken von Australien (*australis* Gd.), und von den Philippinen und Borneo (*lineata* Scop.). Von der Rasse *minima* (Gd.) unterscheidet sich die neue Rasse durch bedeutendere Grösse".

Van Bemmel (in Van Bemmel & Voous, 1951: 104) called *lineatula* "a very weak race", but recognized *palmeri.* This was based on a comparison of specimens from Sulawesi (Celebes) (*lineata*) with specimens from Java ("*palmeri*"), which he considered different. He had no material from the range ascribed to nominate *chinensis,* so that all he did, was establish that *chinensis* (including "*palmeri*"), differs from *lineata.*

The adequate series from Java available to me, made it clear that there is no difference between specimens from Java and Flores, the differences described by Rensch on the basis of a very limited material being all within the range of individual variation.

The question remains whether, and how, the subspecies *chinensis* and *lineata* differ

from each other. Lack of adequate material prevents me from giving an opinion. A reviser will also have to explain the generally-accepted type-locality Nanking of nominate *chinensis,* for at present the species does not occur as a wild bird within 500 km of Nanking (for a map of the distribution in China, cf. Cheng et al., 1978: 82).

The occurrence of this little quail on Sumbawa was predictable, but I know of no previous records. On 22.ix.1984, I flushed a pair on the Tg. Pioen peninsula, northern Sumbawa, hardly above sea level. White & Bruce (1986: 145) give it a vertical range of 400-1200 m in the Lesser Sunda Islands.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
9 ♂	68-75	28-34	19.3-22.5	11.2-14	9-10.6
	(71.8)	(29.8)	(20.5)	(12.9)	(10.1)
10 ♀	70-76	27-31	19-21	12-13.8	9.4-11
	(73.1)	(29.3)	(19.9)	(13.2)	(10.2)

Gallus varius (Shaw)

Phasianus varius Shaw, 1798, Nat. Misc. 10: pl. 353 and text – "Probably an Indian bird" = Java.

Collectors.— Semmelink, Allen, Everett, Verheijen (2, MCZ), Verheijen (eggs), Schmutz.
Material.— ♂, ♂ juv., 1862, Larantoeka (Semmelink, RMNH cat. nos. 5, 7); ♂, not dated, Flores (Schmutz, RMNH no. 81107).
Eggs: c/4, 9.vi.1955, Potjong (RMNH no. 70143); c/2, 7.vii.1955, Ruteng (RMNH no. 70144); c/2, 22.xi.1955, W. Rembong (RMNH no. 70145); c/4, 9.vi.1957, Tado (RMNH no. 70146); c/5, 17.vi.1959, Potjong (RMNH no. 70147); c/4, 28.vi.1959, Montjok (RMNH no. 70148); c/1, 27.ii.1961, Soa (RMNH no. 70149); c/5, 28.v.1961, Mataloko (RMNH no. 70150). The eggs are creamish white, with pores made distinct by dirt.

Some measurements and weights:	RMNH no. 70146	49.7 × 38.4	2.8123
		50.1 × 37.6	2.5147
		50.1 × 38.3	2.5402
		51.0 × 37.5	2.673
	RMNH no. 70148	47.3 × 35.5	2.6907
		49.2 × 36.4	2.9665
		49.5 × 37.2	3.1442
		51.1 × 37.9	3.2480

Turnix suscitator powelli Guillemard

Turnix powelli Guillemard, 1885, Proc. Zool. Soc. Lond.: 511 – Gunong Api Island, Sumbawa.

Collectors.— Everett (several), Verheijen (5, MCZ), Verheijen/Schmutz.
Material.— ♀, 15.x.1968, Nunang (Schmutz, RMNH no. 66090). Iris white.
Eggs: 83 clutches of 1-4 eggs, of this species and *T. maculosa* combined (RMNH nos. 70233-70314, 73508).

Some measurements and weights:	RMNH no. 70272 (Montjok)	25.0 × 18.8	0.3656
		26.3 × 19.4	0.3847
	RMNH no. 70278 (Palué)	24.4 × 20.4	0.3842
		25.1 × 20.2	0.3611
		26.0 × 20.8	0.4188

RMNH no. 70279 (Palué)	23.6 × 19.6	0.3703
	24.7 × 20.0	0.3957
	26.1 × 19.5	0.3792
RMNH no. 70280 (Palué)	24.2 × 19.5	0.3898
	25.6 × 19.9	0.4134
RMNH no. 70281 (Palué)	24.7 × 20.1	0.438
	25.4 × 20.1	0.4315
RMNH no. 70287 (Palué)	25.0 × 21.0	0.4453
RMNH no. 70290 (Palué)	23.8 × 19.9	0.404
	24.4 × 20.6	0.4062
	24.6 × 20.2	0.4349
	25.0 × 20.7	0.4229
RMNH no. 70291 (Palué)	24.9 × 19.9	
	24.9 × 20.0	
	25.0 × 20.5	
	25.0 × 20.5	

Verheijen collected a number of clutches of *Turnix*-eggs on Palué, all of which he identified as belonging to *T. powelli*, the only *Turnix* he recorded from Palué. He further wrote: "Boys told me about two kinds of mbu. Probably this difference is only a question of sexual dimorphism" (Verheijen, 1961: 184). In accordance with the above identification, Verheijen's eggs were originally registered in Leiden as *T. powelli.* An examination of the Palué eggs revealed, however, that they can be divided into two size- and weight-classes: larger and heavier eggs which have been correctly identified as belonging to *T. powelli*, and smaller and lighter eggs which are obviously referable to *T. maculosa*, thus confirming the local boys' claim that two species of *Turnix* occur on Palué.

Notes.— This form has sometimes been regarded as a separate species, but in my view it is well placed as a subspecies of *T. suscitator*. In this, I agree with White & Bruce (1986: 148), who support this by saying that *T. s. baweanus* bridges the difference between nominate *suscitator* and *powelli.* It is likely that this was not based on personal observation, but uncritically copied from Hoogerwerf (1962: 197-200). However, the individual variation in plumage of nominate *suscitator* has been underestimated, and *baweanus* is a synonym (cf. Mees, 1986: 27). In their somewhat confused discussion of the type locality of *powelli,* White & Bruce do not make very clear that Gunung Api and Sangeang are two names for the same island.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♀	85	44	23	16.2	12

Turnix maculosa floresiana Sutter

Turnix maculosa floresiana Sutter, 1955, Verh. Naturf. Ges. Basel 66: 121 – Süd-Flores.

Collectors.— Everett (number not recorded), Rensch (1), Sutter (1), Verheijen (12, MCZ), Verheijen/Schmutz.

Material.— ?, IX-1968, Rahong (Verheijen, RMNH 59802); ♂, 19-X-1968, Rahong (Verheijen, RMNH 59803); ♀, 2-xii-1968, Rahong (Verheijen, RMNH 59804); ♂, 2.xi.1970, Tjumbi, Rahong, (Verheijen, RMNH no. 85170); ♀, 15.ix.1971, Roka, Wangkung (Verheijen, RMNH no. 85171); ♀, 20.ix.1971, Gurung, Langkas, Rahong, 900 m (Verheijen, RMNH no. 85172); ♂, 24.ix.1971, Gurung (Verheijen, RMNH no.

85173); ♂, 25.ix.1971, Gurung (Verheijen, RMNH no. 85174); 3 ♂, 26.ix.1971, Gurung (Verheijen, RMNH nos. 85175-85177); ♂, 2.x.1971, Gurung (Verheijen, RMNH no. 85178); ♀, 3.x.1971, Gurung (Verheijen, RMNH no. 85179); ♀, 4.x.1971, Gurung (Verheijen, RMNH no. 85180); 2 ♀, 8-X-1971, Gurung (Verheijen, RMNH 85181, 85183); ♂, 8-X-1971 Gurung (Verheijen, RMNH 85184). ♂, 9-X-1971, Suma, Langkas (Verheijen, RMNH 85182); ♂, 11-X-1973, Suma Langkas, (Verheijen, RMNH 85185); ♂, 10-viii-1976, Langkas (Verheijen, RMNH 81427). ♂, no date, Gn. Wangkung (Verheijen, RMNH 85186). Iris grey, bill black and light brown, legs light brown. Several specimens collected in September and October show primary moult.

Eggs: See under the preceding species. Verheijen (1964: 198) did not distinguish between the eggs of the two *Turnix*-species, with the result that they have all been registered as *T. s. powelli* in the RMNH collection. I have sorted out some of these, of which measurements and weights are given below, but not all, as this would require measuring and weighing all eggs, several hundreds, and even then it is likely that some would be difficult to place. It did not seem worth the extra effort in the framework of this article. The eggs are similar to those of *T. suscitator powelli*, but on average smaller and lighter.

Some measurements and weights:	RMNH no. 70249 (Potjong)	21.4 × 18.8	0.309
		22.4 × 18.7	0.294
		23.9 × 19.2	0.3413
	RMNH no. 70251 (Tjarang)	23.3 × 18.6	0.2891
		24.6 × 19.1	0.314
	RMNH no. 70285 (Palué)	21.1 × 20.1	0.2961
		22.6 × 20.5	0.3257
		23.1 × 20.6	0.3209
	RMNH no. 70286 (Palué)	22.7 × 18.9	0.3327
		22.8 × 19.4	0.3530
		23.7 × 19.0	0.3291
	RMNH no. 70288 (Palué)	22.0 × 18.0	0.2636
		22.7 × 18.0	0.2711
		23.6 × 17.5	0.2488
	RMNH no. 70289 (Palué)	22.7 × 18.7	0.2926
		23.0 × 18.9	0.3137
		23.7 × 18.8	0.3181

Notes.— Lack of adequate material from the surrounding islands prevented me from discussing the interesting geographical variation in the species in this region, but a single specimen from Sumba (leg. Verheijen) differs from the series of *floresiana* in the characters described by Sutter (1955) and supports the validity of *sumbana*.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
10♂	68-75	25-30½	18-20	13-14.2	9.4-11.0
	(70.9)	(27.2)	(19.1)	(13.7)	(10.4)
7♀	76-81	27-33	19.8-21.6	14.6-15.3	11-12
	(78.4)	(30.4)	(20.4)	(14.9)	(11.5)

Rallus pectoralis exsul (Hartert)

Hypotaenidia brachypus exsul Hartert, 1898, Novit. Zool. 5: 50 – Mangarai district, South Flores.

Collectors.— Everett (1), Verheijen (3, MCZ), Verheijen/Schmutz.

Material.— (?), x.1958, Tjumbi, Rahong (Verheijen, RMNH no. 85156); (?) juv., 3.v.1959, Mano (Verheijen, RMNH no. 85157); ♂ juv., 1.ii.1974, Nunang, 650 m (Schmutz, RMNH no. 85154), all remiges growing, noted as "a prey of *Accipiter* sp.". Iris brown, bill and legs grey.

Eggs (figs 13c, 13cc): c/3, 12.iii.1955, Potjong (RMNH no. 70315); c/3, 4.vi.1955, Potjong (RMNH no. 70316); c/2, xii.1955, Bénténg Djawa (RMNH no. 70317); c/1, 16.vi.1957, Mano (RMNH no. 70318); c/1, 23.xi.1957, Mano (RMNH no. 70319); c/4, 19.ii.1958, Mano (RMNH no. 70320); c/1, iv.1958, Potjong (RMNH no. 70321); c/5, 12.ix.1959, Montjok (RMNH no. 70322); c/4, 15.iii.1959, Potjong (RMNH no. 70323); c/1, iv.1959, Potjong (RMNH no. 70324).

Measurements and weights:	RMNH no. 70315	32.5 × 25.1	0.6829
		32.6 × 25.1	0.6930
		33.2 × 24.5	0.6677
	RMNH no. 70316	31.0 × 24.2	
		32.2 × 25.0	large holes
		33.0 × 24.5	
	RMNH no. 70317	31.4 × 24.0	0.5596
		31.5 × 24.6	0.5753
	RMNH no. 70318	30.8 × 23.0	0.4564
	RMNH no. 70319	32.9 × 24.7	–
	RMNH no. 70320	31.3 × 24.0	0.6172
		31.8 × 23.3	0.5986
		32.1 × 24.0	0.6311
		33.5 × 24.2	–
	RMNH no. 70321	31.6 × 23.7	0.5731
	RMNH no. 70322	30.8 × 24.9	
		32.0 × 24.5	
		32.4 × 25.3	
		33.4 × 25.2	
		35.7 × 25.4	
	RMNH no. 70323	31.6 × 24.2	0.5617
		31.6 × 24.4	0.5753
		31.7 × 24.5	0.5510
		33.7 × 24.7	0.5447
	RMNH no. 70324	31.9 × 24.1	0.6043

Notes.— The MCZ-specimens, one unsexed adult and two juveniles, were discussed by Paynter (1963). This subspecies is known from very few specimens.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
(?) ad.	106	41	28	32	29

Rallus philippensis wilkinsoni (Mathews)

Eulabeornis philippensis wilkinsoni Mathews, 1911, Birds Austr. I: 198 – South Flores.

Collectors.— Everett, Rensch (1), Verheijen (13, MCZ), Verheijen/Schmutz.
Material.— ♀, 8.vii.1969, Rahong (Verheijen, RMNH no. 65222); ♀, 19.i.1970, Montjok (Verheijen, RMNH no. 65224); ♀, 15.xi.1970, Ruteng (Verheijen, RMNH no. 66091); ♀, 15.ii.1974, Nunang, 700 m (Schmutz, RMNH no. 85144); ♂, 20.x.1977, Wewak, 400 m (Schmutz, RMNH no. 81076). Iris coral red.
Eggs (fig. 13d): 68 clutches of from 1 to 7 eggs, not all of them with complete data. Months of collecting: January (3), February (1), March (9), April (17), May (15), June (10), July (1), August (1), September (1), October (1), November (2), December (1). (RMNH nos. 70330-70395, 70338a, 73507). The eggs are cream colour to pale pinkish chamois, with moderate numbers of well-defined chocolate brown primary dots, and light grey secondary dots.

Some measurements and weights:	RMNH no. 70349	38.3 × 29.5	1.3504
		38.8 × 29.7	1.3468
		39.0 × 29.7	1.3589
		39.3 × 29.6	1.3987
		39.4 × 29.4	1.3226
		39.4 × 30.0	1.4163
	RMNH no. 70350	38.5 × 29.6	1.4198
		39.0 × 29.8	1.4529
		39.1 × 30.3	1.4760
		39.2 × 29.7	1.4128
		39.3 × 30.1	1.5057
		39.4 × 30.0	1.4662
	RMNH no. 70361	37.2 × 29.0	1.4800
		37.4 × 28.8	1.3554
		37.4 × 28.8	1.4246
		38.3 × 29.0	1.4256
		38.8 × 28.3	1.4349

Notes.— Several authors have studied the geographical variation of *Rallus philippensis*, and the material at that time present in Leiden was thoroughly discussed by Junge (1953: 11-16). Mistrusting, from experience, any subspecies described by Mathews, I have compared these additional specimens from Flores with specimens from adjacent islands. Birds from Ambon, Buru, New Guinea and Australia have a broad orange-brown pectoral band, which is absent in birds from Sulawesi (Celebes) and Flores (immature birds from these two islands have a weakly-developed band). Birds from Flores are large and have darker olive-brown upper-parts than specimens from Celebes. On this basis, it seems possible that *wilkinsoni* is a valid subspecies. Mayr (1944a: 145-146) regarded large size (♀, wing 158 mm) as the main subspecific character of *wilkinsoni*, and an average larger size was the only difference between a bird from Timor and birds from Celebes that Junge could find. But Mayr considered the larger birds (*wilkinsoni*) to be confined to Flores, and included specimens from Timor, on the basis of smaller size, in *R. p. chandleri* from Celebes, whereas Junge, without specimens from Flores and with only one, a rather large one, from Timor, concluded that birds from Flores and Timor are similar, and differ by larger average size from Celebes birds. Junge wisely refrained from applying trinomials. Stresemann (1941: 28) compared two specimens from Alor (♀, wing 137 mm) and Flores (wing 146 mm) with a series from Celebes (7 ♂, wing 135-146 mm, 5 ♀, wing 134-142 mm), and as he found no differences in plumage either, he placed *wilkinsoni* in the synonymy of *chandleri.* I agree with Ripley (1977: 83), that: "The racial affinities of birds from the Moluccas and Lesser Sunda Islands are imperfectly understood".

Subsequently, White & Bruce (1986: 150-151) also failed to arrive at definite conclusions. White discusses *R. p. chandleri*, described from Sulawesi (Celebes), and points out characters by which it differs from nominate *philippensis*. Nevertheless, White & Bruce followed Mayr and Ripley in not recognising *chandleri*. In this connection it seems inconsistent that they accepted *wilkinsoni.* I am unable to add much to the discussion, but for the moment, until its exact relations to *chandleri* are solved, I consider it cautious to recognize *wilkinsoni;* the range of *wilkinsoni*, as here defined, probably includes Timor and Sumba.

As few specimens are known from Sumba, I mention here: ♀, 20.vii.1974, Wai Kabubak, Sumba (Verheijen, RMNH no. 85143).

Note that Ripley (1977: 85 map 3) has placed Goenoeng Api Island in the position of Komodo, between Sumbawa and Flores, instead of in the Banda Sea, although in the text he places it correctly.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Flores ♂	154	68	49	40.5	36
♀	145	60	40.8	33	28
♀	153	63	43	35	29
♀	152	66	41	33	27.5
♀	150	58+	42.5	39	31
Sumba ♀	142	-	45	33.3	30.4

Rallina fasciata (Raffles)

Rallus fasciatus Raffles, 1822, Trans. Linn. Soc. Lond. 13: 328 – Sumatra.

Collectors.— Weber, Verheijen/Schmutz.

Material.— (?), xii.1888, Maumeri (Weber, RMNH cat. no. 15); ♂, large gonads, 18.xii.1975, Nunang, 650 m (Schmutz, RMNH no. 97114), ♀, 22.iii.1978, Nunang (Verheijen, RMNH no. 85155), with c/6 eggs. Bill dark green, eyerim, legs and iris deep orange-red.

Eggs: c/2, 25.ii.1959, without locality (RMNH no. 70328); c/1, 22.ii.1961, Soa (RMNH no. 70329). The egg from Soa was collected with an incubating parent, so that its identification is beyond question (cf. Verheijen, 1964: 195, s. n. *Rallina euryzonoides*). The eggs are white, entirely without markings, with a smooth, glossy surface.

Measurements and weights:	RMNH no. 70328	32.4 × 23.9	0.5638
		33.0 × 23.7	0.5783
	RMNH no. 70329	37.0 × 23.5	0.6520

The measurements and weights agree with those of eggs from Java, described by Hellebrekers & Hoogerwerf (1967: 29) and with eggs from Burma described by Harrison & Parker (1967). The measurements of 39.9 × 24.3 mm given for one egg by the last-mentioned authors are due to a misprint and should read 31.9 × 24.3 mm (Walters, in litt., 22.vii.1992).

Notes.— Ripley (1977: 160) notes that this species is highly migratory, and may be only a winter visitor in the southern part of its range. The fact that several clutches of eggs are known from both Java and Flores, the southern limit of its normal range, contradicts this suggestion.

In the description of the eggs, the only reference given by Ripley (l. c.) is to Harrison & Parker (1967). The last-mentioned authors laboured under the misconception that authentic eggs of *Rallina fasciata* had not been described before they published their note. They seem to have overlooked Hoogerwerf's (1949a: 49, pl. IV fig. 36) important publication, in which eggs from Java are described and (admittedly not very well) illustrated, and Coomans de Ruiter's (1951: 313, pl. VIII) description and excellent photograph of a clutch from Borneo. Our collection contains four clutches from Java (Bartels, Hoogerwerf), one from Billiton (c/4, 29.i.1948, leg. A.H. de Bruijn, RMNH no. 73331), one from Padjintan, Singkawang, Borneo (c/5, 9.vi.1934, leg. Coomans de

Ruiter, RMNH no. 73552; this is the clutch recorded by Coomans de Ruiter, l. c.), and two from Flores as described above. Smythies (1981: 76) makes no mention of breeding in Borneo. Excluded from the above enumeration is a clutch from Java (leg. Sody), of which the identification was questioned by Hellebrekers & Hoogerwerf (1967: 29). Besides being broader and a trifle heavier, as noted by these authors, the surface of the shells is a little less smooth, and without gloss. Sody's label shows that no bird was seen with the eggs, and that they were only subsequently identified as being of *R. fasciata* by M. Bartels Jr. Measurements and weights, in combination with the information, given on the label, that they were collected in a wet rice-field, suggest *Ixobrychus cinnamomeus.*

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	123	48	44	23.8	21.8
♀	123	46	44	23.4	21

Porzana pusilla pusilla (Pallas)

Rallus pusillus Pallas, 1776, Reise d. versch. Prov. Russ. Reichs 3: 700 – Dauria (reference not verified).
Porzana pusilla mira Riley, 1938, Proc. Biol. Soc. Washington 51: 95 – Tanggarong, Mahakkam River, East Borneo.

Collector.— Verheijen (3, MCZ).
Material.— None.

Notes.— The dates of the Flores specimens suggest, but do not prove, that the species is a resident of the island: late April and mid-May (cf. Paynter, 1963). In contradistinction, all specimens from Java and Sumatra in our collection have been taken in the winter months:

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Java	14	26	1	–	1	–	–	–	–	–	–	2
Sumatra	1	–	–	–	–	–	–	–	–	–	–	–
Ceram	–	–	–	–	–	–	–	–	–	1	–	–

The last spring dates are 6.iii.1917 (Tjitamijang, Java, RMNH no. 52116) and 11.v.1918 (Tjisaät, Java, RMNH no. 52117). Although there may be all kinds of bias in the samples, there is at least a strong suggestion that the species is mainly a winter visitor (this has never been denied), and there is no evidence for the presence of a resident population (cf. Kooiman, 1940b: 100; Junge, 1948: 313-314).

Van Marle & Voous (1988: 82) refer to eggs and a bird collected on Billiton, 5.ii.1949, by A.H. de Bruijn, in RMNH. There is no such material in our collection, but correspondence between de Bruijn and A.C.V. van Bemmel, at that time curator of the MZB (archive RMNH) revealed that the record is correct. De Bruijn collected both eggs and a bird which he had personally seen attending the nest. Van Bemmel identified the bird as belonging to the nominate race, *P. p. pusilla*. However, skin and eggs are in the MZB, not in Leiden; they provide proof that the species is not only a winter visitor but also a resident in Malaysia.

The first Celebes specimen was collected on 17 June 1939: the date suggests that it

belonged to a resident population and consequently it was referred, with some doubt, to the subspecies *mira* (Van Marle, 1940b).

The existence of an endemic Sunda-Island race, *P. pusilla mira*, which has been doubted before (cf. Junge, 1948: 313-314) becomes increasingly questionable; indeed I see no reason at all to retain it, now that the one certain breeding bird has been identified as *P. p. pusilla*.

One might perhaps expect an as yet hypothetical resident population of the Lesser Sunda Islands to be closer to Australian *P. p. palustris* than to nominate *pusilla,* but Paynter states expressly, that the specimens agree in size with *pusilla.* Paynter played with the idea that the specimens from Flores represented an undescribed endemic race, but their poor condition prevented a conclusion. Until definite evidence to the contrary may be found, I consider that the species should be regarded as a winter visitor, and the specimens as nominate *pusilla.*

Porzana fusca fusca (Linnaeus)

Rallus fuscus Linnaeus, 1766, Syst. Nat. (ed. 12) 1: 262 – in Philippinis.
Gallinula rubiginosa Temminck, 1825, Recueil d'Ois. 5 (livr. 60): pl. 357 – Java.

Collectors.— Everett (2), Verheijen (1, MZB, cf. Jany, 1955), Verheijen (7, MCZ), Verheijen/Schmutz.
Material.— (?), vii.1959, Wenus (?), Rahong (Verheijen, RMNH no. 85158); ♀, 20.vii.1969, Paku, 350 m (Schmutz, RMNH no. 97156); ♂, 10.ix.1971, Longko, Wangkung, Rahong, 900 m (Verheijen, RMNH no. 85136); (?) juv., 17.vi.1976, sawah R. Léma (Verheijen, RMNH no. 81322); ♂ juv., 24.vi.1978, Natu (?) (Schmutz, RMNH no. 81307).
No eggs. The eggs listed with a question mark by Verheijen (1964: 198) must have been misidentified.

Notes.— Mayr (1944a: 146) drew renewed attention to the larger size of birds from Flores (2 ♂, wing 100 and 102 mm), compared with specimens from Java, Sumatra and the Malay Peninsula. As one Luzon bird, topotypical of the nominate race, measured equally large (wing 100 mm), he suggested that the Malaysian populations, if the size difference was confirmed, might be known as *P. f. rubiginosa*. Voous (1948: 88), on the basis of some specimens from Java and Sumatra, agreed with Mayr on their small size and accepted the name *rubiginosa* for them. He was not clear, however, about the characters of *P. f. erythrothorax*, which is a very much larger subspecies, not known to migrate beyond Taiwan (Mees, 1970: 292-293). Ripley (1977: 254) included the resident population of Taiwan in *P. f. erythrothorax,* but it belongs to *P. f. phaeopyga.*

White & Bruce (1986: 155) deny the smaller size of *rubiginosa,* but it is not clear that they had examined material, and specimens measured by me support it. Whether the difference is enough to justify its formal recognition in nomenclature is another question; my personal opinion is, that it is not. Anyway, the Flores birds agree in size with topotypical *fusca* and therefore must be included in the nominate race.

Measurements:		wing	tail	tarsus	entire culmen	exposed culmen
Flores	♂	97	49	33	24.2	19.6
	♂ juv.	100	48	33	24.3	22.5
	♀	97	42	34	23	20
	(?)	94	41	31	23	19
	(?) juv.	102	44	36	23.9	20

Java	10 ♂	91-96	34-42	31.8-34.6	21.8-23.8	19.8-21.3
		(93.0)	(38.8)	(32.9)	(22.8)	(20.7)
Luzon	♂	99	44	31	20.6	18.8
	3 ♀	92-96	43-51	32-33	21.7-22.9	19-20.6
		(94.7)	(46)	(32.7)	(22.1)	(19.6)

Porzana cinerea cinerea (Vieillot)

Porphyrio cinereus Vieillot, 1819, Nouv. Dict. d'Hist. Nat. 28: 29 – Le pays de cet oiseau m'est inconnu = Java (cf. Pucheran, 1851: 563).
Porzana leucophrys Gould, 1847, Proc. Zool. Soc. Lond. 15: 33 – Port Essington and Northern Australia.

Collectors.— Verheijen (3, MCZ, and eggs), Schmutz.
Material.— ♂ in juvenile plumage, 27.vi.1978, sawah Lanar (Schmutz, RMNH no. 81314).
Eggs (fig. 13e): c/4, 18/25.viii.1955, Dampék (RMNH no. 70325); c/1, 18/25.viii.1955, Soa (RMNH no. 70326); c/1, 29.vi.1961, Soa (RMNH no. 70327).

Measurements and weights:	RMNH no. 70325	27.0 × 20.6	0.4119
		27.1 × 20.6	0.4557
		27.1 × 20.8	0.4407
		27.4 × 20.6	0.3905
	RMNH no. 70326	27.3 × 21.0	0.4556
	RMNH no. 70327	28.2 × 21.0	0.4782
For comparison, clutches from Sumatra and Java:			
	RMNH no. 4295,	26.9 × 21.7	
	Deli, Sumatra	27.5 × 22.5	
		27.8 × 21.3	
		27.9 × 20.8	
	RMNH no. 52082,	28.7 × 22.8	
	Sitoe Palahlar, Java	29.0 × 22.0	
		29.0 × 22.5	
		29.4 × 23.0	
		30.3 × 22.8	

A series of 18 eggs from New Guinea measured 27.2-30.1 × 20.7-22.3 mm (Mees, 1982a: 42), quite similar, and therefore I do not understand what Meise (in Schönwetter, 1988: 256) meant with the following words: "Daraus folgt, dass die kleinen Merauke-Eier entgegen der Annahme von Mees....nicht zur Nominatform gehören können, die i. D. viel grössere Eier legt". The measurements of the New Guinea eggs are also quite similar to those of eggs of the nominate race as provided by Schönwetter (1962: 348), viz., 28.0-30.1 × 21.0-23.7 mm.

Notes.— Reasons for the rejection of the generic name *Poliolimnas* for this species have been given elsewhere (Mees, 1982a: 42-49). In the paper mentioned, a partial revision of the subspecies was given, but lack of material prevented me from giving a definite judgement on the validity of Australian *leucophrys*, although I quoted Greenway's (1973: 314) statement that birds from Malaya and Java (nominate *cinerea*) seemed to differ from northern Australian birds (*leucophrys*), merely by having a blacker head. I have since received on loan all three Australian specimens present in the ANC (♂,14.vii.1975, Kapalga, Arnhemland, N.T., CSIRO no. 18072; ♀, 5.xii.1975,

Humpty Doo, N.T., CSIRO no. 20234; ♀, xi.1972, Darwin coast, CSIRO no. 16626). These specimens, interestingly, have rather dark, blackish crowns, darker than most Java birds, although not outside their range of variation. This is exactly the opposite of the difference noted by Greenway. There are no other differences in colour, pattern or measurements, hence I have no hesitation in synonymizing *leucophrys* with nominate *cinerea*.

Marchant & Higgins (1993: 567, 571) recognise no subspecies at all and confidently list *Porzana cinereus* [sic] as monotypic. Surely the subspecies, *brevipes, ocularis, meeki* and *tannensis* should have been discussed before such a step was taken.

Measurements:	wing	tail	tarsus	exposed culmen	middle toe
Flores ♂ juv.	92	49	35	18.5	38.5
Northern Territory, Australia					
♂	90	44	35.8	22.5	38.0
♀	90	44.5	32	20	35.4
♀	93	48.5	32.5	19.8	ca. 38

Amaurornis phoenicurus leucomelanus (S. Müller)

Gallinula leucomelana S. Müller, 1842, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 158 – Timor.

Collectors.— Everett (1), Rensch (1), de Jong (3), Verheijen (3, MCZ), Verheijen/Schmutz.
Material.— ♂, 17.viii.1968, Nunang (Schmutz, RMNH no. 66092); ♀, 23.xi.1968, Nunang (Schmutz, RMNH no. 66093); ♀, 8.ix.1969, Montjok, L.L. (Verheijen, RMNH no. 65225); ♂, 20.ix. 1969, Look (Schmutz, RMNH no. 66094); ♀, 7.vii.1971, Waé-Ntjuang, Langkas (Verheijen, RMNH no. 66095).
Eggs: 16 clutches of c/1 (4 ×), c/2 (4 ×), c/3 (1 ×), c/4 (5 ×) and c/5 (2 ×), collected in the months January (4), February (2), March (3), April (1), July (1), December (1), and four insufficiently dated.

Some measurements and weights:	RMNH no. 70420	40.4 × 29.2	1.3126
		41.1 × 28.4	1.293
		41.7 × 28.9	1.3284
		42.6 × 28.8	1.2798
		43.0 × 29.3	1.3694
	RMNH no. 70425	39.2 × 30.0	1.2687
		39.7 × 30.1	1.3048
		41.7 × 30.4	1.3388
		42.3 × 30.1	1.3343

Notes.— The larger size of this subspecies, compared with the adjacent *A. p. javanicus*, was already noted by S. Müller when he described it. The eggs range also slightly larger and heavier. White's (in White & Bruce, 1986:155) remarks about *A. p. javanicus*, and his grounds for its rejection are inappropriate.

In a previous publication (Mees, 1986: 27-30) I discussed the subspecies *A. p. javanicus* in relation to *A. p. chinensis*, pointing out its smaller size. In the Malay Peninsula the situation is not clear (cf. Wells, 1999: 198-199), but such evidence as is available seems to indicate a steep gradient between *javanicus* and *chinensis* where they meet, suggesting secondary rather than primary contact and strengthening-the case for keeping them apart.

There is every reason to discuss *javanicus* also in relation to its eastern neighbour, *leucomelanus*, but first I want to comment on White's treatment of *javanicus*. He presents a list of measurements from various localities, apparently in support of his opinion that there are no significant size differences between these populations. It struck me that for males from Java (number of specimens not given) he records a maximum wing-length of 158 mm, somewhat larger than the maximum I had found. I expected that White had based his table on measurements personally taken, but discovered that actually they have been raked together from various literature sources. The measurements from Java, of both sexes, have evidently been taken from Siebers (1930: 198). Siebers had 8 males from Java, of which one in moult and disregarded by White. Among the Java birds there is, however, one specimen from Noordwachter, an islet in the Java Sea, about 90 km north of the western end of Java: this is the bird with a wing-length of 158 mm. In the others the maximum is 153 mm (within the size range of 137-154 mm found by me in a series of-29 males of *javanicus*). Its date, October 1889, and locality show that this is the bird previously recorded by Vorderman (1895a, s. n. *Gallinula phoenicura*), who unfortunately did not provide further details. It was unsexed, but because of its large size, Siebers assumed it to be a male: it is a little too large even for a male of *javanicus*, and one would certainly not expect a resident population on Noordwachter, but the islet would be an obvious landing place for a migrant of *chinensis*. Therefore I feel quite safe identifying the specimen as a migrant of that race, and probably being a female rather than a male. Although Noordwachter is about 90 km from Java and only ca. 65 km from the mainland of Sumatra, it is generally, faunistically and politically, included in Java. As there are no previous records of the subspecies *chinensis* from Java, the specimen constitutes an addition to its avifauna.

Now about the delineation between *javanicus* and *leucomelanus*. It is generally known that there is a large area in which the populations are variably intermediate between these two subspecies. This area includes the whole of Sulawesi (Celebes), with the island of Buton (van Bemmel & Voous, 1950: 89-91) and even Buru (Siebers, 1930). Stresemann named the intermediate birds *variabilis* and although he believed them to be of hybrid origin, he was not quite sure (cf. Stresemann, 1939: 346). In spite of the unusually large range these intermediate populations occupy, I also have little doubt that they are hybrids: their extreme variability would be difficult to explain in any other way. Ripley (1977: 265) speaks of a "partially continuous phenotypic cline". It should be realized that a cline implies primary contact and hybridisation secondary contact, so that Ripley's and my views are diametrically opposed. Unlike Ripley, White considered these populations definitely hybrids. He rejected the name *variabilis* with the argument that a separate name "is not appropriate where unstable populations affected by introgression are involved". The nomenclaturial solution both he and Ripley followed, was to include all these hybrid populations in *leucomelanus*. This solution has the advantage of being simple, but fails to do justice to the facts. The proper treatment would be to indicate them with the formula *A. p. javanicus* < *A. p. leucomelanus.* If this were considered too awkward, another solution would be (dare I suggest it?) to retain for them the name *variabilis*, keeping in mind that this is an unstable hybrid.

Dickinson et al. (1991: 147) come with the surprising statement: "*Amaurornis* is feminine: *phoenicurus* is a Greek compound adjective and would end the same whether masculine or feminine". Although *ornis* may have either gender, it has expressly been

ruled that in nomenclature, words ending with *ornis* are to be treated as masculine (cf. ICZN, 1985: art. 30). The name *phoenicurus* is a Latinized adjectivum, and as such, takes the gender of its genus; thus *Phoenicurus phoenicurus*, but *Rhipidura phoenicura*. David & Gosselin (2002 34) treated the genus *Amaurornis* as feminine, with a reference to the new edition off the Code (ICZN, 1999: art. 30.1.4.2), but they made no mention of art. 30.1.2, in which the ruling that generic names ending in *–ornis* are to be treated as masculine, is retained.

Measurements:	wing	tail	tarsus	culmen
2 ♂	165, 166	68, 70	57, 61	39.3, 38
3 ♀	152, 157, 159	62, 63, 63	54, 55, 56	33, 34, 35

Gallicrex cinerea (Gmelin)

[*Fulica*] *cinerea* Gmelin, 1789, Syst. Nat. (ed. 13), 1(2): 702 – Sina.

Collector.— Verheijen (2, of which 1, MCZ).
Material.— ♀, 25.v.1969, Wangkung, Rahong (Verheijen, RMNH no. 85137). Plumage worn, but no moult. Iris yellowish green, bill yellowish, tip of mandible yellowish white; legs olive green.

Notes.— Much about the status of this species in the southern part of its range remains to be elucidated. It is known as a breeding-bird from India and Sri Lanka (Ceylon), the northern part of the Malay Peninsula (south to Kedah), and throughout the Philippines. In Java it is a fairly common winter visitor, not known to breed, as it is in the southern part of the Malay Peninsula. The situation in Sumatra is less clear: it is certainly mainly a winter visitor, but a nest is said to have been found, and there are summer observations (Van Marle & Voous, 1988: 83-84). There is no evidence for breeding in Borneo, and from Sulawesi (Celebes) there are only a few records, all in the northern winter and therefore undoubtedly migrants. The birds from Flores may also be assumed to be migrants, although the dates are late.

Dated material from the southern part of the range in our collection is divided over the months as follows:

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Andamans	-	-	1	-	-	-	-	-	-	-	-	1
Sumatra	2	-	-	-	-	-	-	-	-	-	-	2
Java	34	15	3	3	2	-	-	-	1	-	-	19
Flores	-	-	-	-	1	-	-	-	-	-	-	-
Sri Laanka	-	1	-	-	-	-	-	-	-	-	-	-
Mindanao	-	-	-	1	1	-	-	-	-	-	-	-

The last dates from Java are 5 and 10 May, so that the Flores specimens, from 14 (MCZ) and 25 May may certainly be regarded as late. A Mindanao bird is dated 15. v.1889, Davao (leg. Platen, RMNH cat. no. 20), but the species is known to be a resident there (cf. Dickinson et al., 1991: 147).

Measurements:	wing	tail	tarsus	culmen with forehead plate
♀	160	57	59	36

Gallinula tenebrosa frontata Wallace

Gallinula frontata Wallace, 1863, Proc. Zool. Soc. Lond.: 35 – Bouru.

Collector.— Allen.
Material.— None.

Notes.— The record of this species from Flores is based on Wallace's (1864: 487) list, which shows it as having been collected by Allen. The specimen (or specimens ?) has not been traced (it is not in the BM, where so many of Wallace's specimens have, over the years, accumulated).

The status of the two species of moorhen in the Lesser Sunda Islands requires further investigation. *G. chloropus* occurs east to Flores, where it breeds, and Sumba. *G. tenebrosa* is known from Timor (five specimens collected by Stein, cf. Mayr, 1944a: 133), Sumba (Everett and Sutter each obtained one specimen), Flores as mentioned above, and Sumbawa (leg. Elbert, cf. Rensch, 1931a: 469, presumably one specimen). Although Rensch (l. c.) concluded that: "Diese Art kann nicht in den Rassenkreis von *G. chloropus* einbezogen werden, da sie in Celebes und Sumbawa neben diesem vorkommt", this has to be qualified for the Lesser Sunda Islands, where there is no proof yet of sympatric breeding occurrence. Individuals of *G. tenebrosa* found west of Timor might conceivably be migrants or vagrants.

Fig. 7. *Gallinula tenebrosa*, nominate race from Australia in full colour; note in particular the olive-grey rings around the joints and toes; the toes are not as bright orange as the legs, usually more yellowish orange, as in this bird (Busselton, Western Australia, 14.xii.1996).

Now that *G. chloropus* has been established as the breeding bird on Flores, Stresemann's (1939: 318 and 1941: 39) hypothesis on the colonisation of Celebes by *G. tenebrosa*: "Einwanderung: von Flores her", is no longer so obvious, unless there is some substance to the suggestion that in Celebes and the Lesser Sunda Islands *G. chloropus* is gradually replacing *G. tenebrosa* (cf. White & Bruce, 1986: 160).

As White (1976b) pointed out, *G. tenebrosa* is in need of revision. The subspecies *frontata* is supposed to differ from nominate *tenebrosa* of southern and eastern Australia by having bright red legs, with grey or olive green joints, whereas *tenebrosa* would have the legs variable in colour, but not or only rarely bright red. Surprising as it may seem, at that time it was apparently not generally known that in Australia *G. t. tenebrosa* shows seasonal variation in the colours of the unfeathered parts, not only on the legs but also bill and forehead-shield. This was studied in eastern Australia (Canberra) by Eskell & Garnett (1980). During the past few years I have noted a similar seasonal variation in south-western Australia (Busselton, fig. 7). By far the most conspicuous are the changes in colour of bill and frontal shield. In summer, shield and bill are bright vermilion, except for a clear yellow tip. In this season, the legs are variable in colour, but mainly orange, always with the joints (heels and toes) olive grey or greenish grey, and never as bright as frontal shield and bill, orange rather than vermilion. These summer colours are universal in the last third of the year (September to December). Just as in the eastern states, there is a great individual variation, although, once the change begins, it proceeds rapidly. In Busselton frontal shields may begin to shrivel and darken as early as the end of December, but other birds retain their summer colours to March or even the first days of April. The legs, in the winter season, become generally dark grey, olive-grey or brownish grey. Only at close range may it be seen that some scutes along the anterior margin of tibio-tarsus and tarsus are dark red, or that some irregular patches of reddish or yellow remain. This does not influence the general dark and dull apearance of the legs. The change in colour of shield and bill begins with a general darkening, dusky concealing the bright colours. There is a stage in which the bill looks dull dark red. Finally the bill and the shriveled shield become blackish grey, except that the bill tip remains more or less yellow, dirty yellowish, at any rate pale, and the middle of the shield become light brownish, the colour of the shrivelled skin. From the beginning of June, summer colours may begin to return. This is usually also a diffuse process, but in birds which I assume to be immature, changing for the first time, bright vermilion appears first along the edge of the frontal shield, in a horsehoe shape, and in the succeeding days spreads inward and downwards into the bill. Various stages may be seen in the following weeks, and by the beginning of September, at the latest, all birds are in full colour.

What now is the relevance of all this for the subspecies *frontata*? Hitherto attention has been focussed on leg-colour; seasonal variation in bill- and shield-colour was described for nominate *tenebrosa* by Eskell & Garrett, but there is no mention of these parts in the other subspecies, *frontata* and *neumanni*. If these two subspecies show no seasonal variation in leg-colour, it is at least very likely that they also lack seasonal variation in bill and frontal shield colour. Bill and shield are far easier to observe than legs (if only for the reason that a large proportion of observations will be of swimming birds), and it would be easy to pay attention to this character.

There has been speculation about the relationship between *G. tenebrosa* and *G. chloropus*. Some authors have even suggested thet they are conspecific. Apart from other

morphological differences, I am not aware that a seasonal variation in colours of the unfeathered parts is known from anywhere within the extensive range of *G. chloropus*, and the raucous call of *G. tenebrosa* is also quite different from that of its congener.

Gallinula chloropus orientalis Horsfield

Gallinula orientalis Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 195 – Java.

Collectors.— Verheijen (9, MCZ), Verheijen/Schmutz.
Material.— ♂, 2.vi.1969, Tjantjar, Rahong (Verheijen, RMNH no. 85135); (?), 18.vi.1969, Montjok, L.L., ca. 700 m (Verheijen, RMNH no. 65230); ♂ juv., 1.vii.1969, Tjumbi, Rahong (Verheijen, RMNH no. 65231); ♀ juv., 9.vii.1969, Wangkung, Rahong (Verheijen, RMNH no. 65232); ♂ juv., 14.vii.1969, Wangkung (Verheijen, RMNH no. 65233); ♀, 8.xii.1969, Wetok Ndekes (?), 900 m (Verheijen, RMNH no. 65234); ♀, 19.i.1970, Montjok, 800 m (Verheijen, RMNH no. 65235); ♂ with large gonads, 10.ix.1971, Paku, 400 m (Schmutz, RMNH no. 85134).
Eggs: 15 clutches of from 1 to 7 eggs, collected in the months April (3), May (6), June (2), and four without data (RMNH nos. 70396-70404, 70406-70410, 70410A).

Some measurements and weights:	RMNH no. 70400	41.0 × 30.3	1.7092
		41.8 × 30.1	1.7146
	RMNH no. 70406	36.8 × 28.3	1.143
		37.0 × 28.3	1.2238
		37.7 × 28.5	1.1913
		37.8 × 28.4	1.2291
		40.7 × 29.9	1.5837
		40.9 × 29.0	1.4935
		41.6 × 29.6	1.5174

Notes.— For a discussion of this species, see the notes given under *G. tenebrosa.*

Measurements:	wing	tail	tarsus	culmen with shield
2 ♂	155, 160	68, 64	49, 50	44, 45

Porphyrio porphyrio indicus Horsfield

Porphyrio Indicus Horsfield, 1821, Trans. Linn. Soc. Lond. 21: 194 – Java.
Porphyrio porphyrio plessenorum Neumann, 1941 (November), Zool. Meded. 23: 109 – Bratan See, Nord Bali in 1200 m.

Collectors.— Verheijen (1, MCZ), Schmutz.
Material.— ♀, vii.1969, Sokrutung (Schmutz, RMNH no. 85160).
Eggs: c/3, 23.vi.1959, Dampék (RMNH no. 70411).
The eggs have a pale café-au-lait ground colour, with a moderate number of larger and smaller brown spots, and light violet-grey secondary spots. The ground colour is decidedly browner than that of eggs from Celebes and Java in the RMNH collection, which have a greyish white to cream ground colour.

Measurements and weights:	RMNH no. 70411	46.8 × 34.0	2.1942
		47.3 × 35.9	2.5156
		47.6 × 34.5	2.1992

Notes.— The specimen examined obviously belongs to the subspecies *indicus*, having the large azureous-blue breast-patch which separates this subspecies from the

forms *melanopterus* and *melanotus*. I am not aware that, since its description, the name *P. p. plessenorum* has again been recorded in the literature. The type-series of six specimens is in Leiden and I am satisfied that they also are *P. p. indicus*. Ripley (1977: 299 map) included the Lesser Sunda Islands, from Lombok eastwards, into the range of *melanopterus*, although the species is not yet known from Lombok and Sumbawa. A few pages later, in his text, he records it in the Lesser Sunda Islands from Timor only. White (in White & Bruce, 1986: 158-159) calls birds from the Lesser Sunda Islands *samoensis*. His judgement was based on literature only and he was not handicapped by personal study. The species is clearly in need of a revision.

Measurements:	wing	tail	tarsus	bill with shield	bill from nostril
♀	210	67	75	56.5	15

Irediparra gallinacea gallinacea (Temminck)

Parra gallinacea Temminck, 1828, Recueil d'Ois. 5 (livr. 78): pl. 464 – Célèbes.... dans le district de Menado.

Collector.— Weber.
Material.— (?), skeleton, 26/28.xi.1888, Bari (Weber, RMNH cat. a).

Notes.— With much hesitation I retain a trinomial for this species, as I regard one of the usually accepted subspecies (*novaeguinae*) as a synonym, and doubt the validity of the only other one (*novaehollandiae*, cf. Mees,1982a: 51).

Rostratula benghalensis benghalensis (Linnaeus)

[*Rallus*] *benghalensis* Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 153 – Asia.

Collector.— Verheijen (2, MCZ), Verheijen.
Material.— ♂, 14.ix.1971, Flores (Verheijen, RMNH no. 85151).
Eggs: c/2, c/4, 29.vi.1961, Soa (RMNH nos. 70428, 70429); c/4, 23.v.1961, Soa (RMNH no. 70430); c/2, 31.v.1961, Soa (RMNH no. 70431).

Measurements and weights:			
	RMNH no. 70428	36.6 × 25.5	0.9208
		36.6 × 25.8	0.9329
	RMNH no. 70429	34.2 × 25.8	0.9574
		34.8 × 25.3	0.8872
		34.8 × 25.5	0.9095
		35.1 × 24.8	0.8712
	RMNH no. 70431	34.2 × 26.1	1.0272
		35.1 × 26.2	1.0048

Notes.— Birds from Flores belong to the nominate race (cf. also Paynter, 1963).

Measurements:	wing	tail	tarsus	exposed culmen
♂	125	34	42	45

Pluvialis fulva (Gmelin)

[*Charadrius*] *fulvus* Gmelin, 1789, Syst. Nat. (ed. 13) 1(2): 687 – Tahiti.

Collectors.— Allen (1), Weber (1, ZMA), Everett, Rensch (1), Schmutz.
Material.— 2 ♂, ♀, 20.ix.1982, Nisar, 600 m (Schmutz, RMNH nos. 81029, 81030, 81032).

Notes.— Allen's specimen was first published by Wallace (1864: 487, s. n. *Charadrius longipes*) and later by Sharpe (1896: 205, s. n. *Charadrius dominicus*).

Of the material collected by Schmutz, the two males are still partially in summer dress, with mottled black and yellowish white underparts.

There has long been discussion over the status of *dominica* and *fulva* in relation to each other: subspecies of a single species or different species. Vaurie (1965: 385) dismissed earlier claims that they are not conspecific, but on the basis of differences in moult and migration, Stresemann & Stresemann (1966: 53, 200-203) argued strongly in favour of considering *fulva* a separate species. Their views were not generally accepted; for example Glutz (1975: 313-314) and Cramp & Simmons (1983: 196-200) chose to retain a subspecific relationship. The evidence provided by Connors (1983) for separating *P. fulva* specifically from *P. dominica* is suggestive rather than conclusive, but the supporting particulars since published by Alström (1990) and Connors et al. (1993), have convinced me.

Charadrius leschenaultii leschenaultii Lesson

Charadrius Leschenaultii Lesson, 1826, Dict. Sci. Nat. (Levrault) 42: 36 – Pondichéry.

Collectors.— Allen, Rensch (1).

Notes.— As Wallace (1864: 487) listed this species from Flores, I assume that Allen has collected material, but no actual specimen has been traced. Throughout the Archipelago, this is one of the commonest migrant waders.

I use a trinomial on the evidence provided by Spitzenberger (in Glutz, 1975: 257) and Roselaar (in Cramp et al., 1983: 177-178), that there is a well-marked western subspecies *C. l. columbinus*. Roselaar recognizes in addition a subspecies *C. l. crassirostris*, but the measurements supplied do not separate it convincingly from the nominate race, and the statement that in non-breeding plumage all races are similar, would make separation of *C. l. leschenaultii* and *C. l. crassirostris* in the winter quarters impossible.

Charadrius veredus Gould

Charadrius veredus Gould, 1848, Proc. Zool. Soc. Lond. 16: 38 – Northern Australia.

Collector.— Schmutz.
Material.— ♂, 22.ii.1983, Nisar, 100 m (Schmutz, RMNH no. 81162). Iris brown.

Notes.— Considering that this is a fairly common winter visitor to north-western Australia (cf. Blakers et al., 1984: 158; Lane, 1987: 70-72), it is surprising that the above specimen constitutes only the second record for the Lesser Sunda Islands, the first one being from Timor and being questionable. I have, without difficulty, traced the Timor record from Hellmayr (1914: 106), through Mayr (1944a: 133) to White & Bruce (1986: 165), but have failed to find its source. Hellmayr's vague references to S. Müller

(Koepang) and Everett (Atapupu) do not lead anywhere and I suspect an error. Likely as it is that *C. veredus* visits Timor on migration, the evidence is unsatisfactory. In other words, Father Schmutz's specimen constitutes not the second, but the first record from any of the Lesser Sunda Islands.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	170	63½	46½	28.3	22.3

Numenius phaeopus variegatus (Scopoli)

Tantalus (variegatus) Scopoli, 1786, Del. Flor. Faun. Insubr. (2): 92 – no locality = Luzon.

Collectors.— Semmelink, Allen, Everett, Schmutz.
Material.— (?), 4.vi.1862, Larantoeka (Semmelink, RMNH cat. no. 50); ♀, 22.x.1969, Nisar, beach (Schmutz, RMNH no. 85150); ♂, 23.ii.1982, Joneng, beach (Schmutz, RMNH no. 81163); (?), Flores, without data (Schmutz, received 1983, RMNH no. 81033).

Notes.— The Whimbrel is one of the commonest and most widely distributed winter-visitors in the Indo-Australian region, where it is present throughout the year (there are specimens from all months in the RMNH).

Limosa lapponica baueri Naumann

Limosa Baueri Naumann, 1836, Naturgesch. Vögel Deutschl. 8: 429 – Neuholland = Norfolk Island (see Notes).
Limosa lapponica var. *novaesealandiae* Gray, 1845, Voy. Erebus & Terror, Birds: 13 – New Zealand (reference not verified).

Collector.— Weber (1).
Material.— (?), 23/25.xi.1888, Reo (Weber, ZMA no. 24087).

Notes.— *Limosa Baueri* was rejected as a nomen nudum by Hartert & Steinbacher (1938: 431) and later still by Cheng (1976: 202-203). Mayr (1941b: 31) was not convinced and a few years later returned to the use of *baueri* (Mayr, 1944a: 140, footnote; Delacour & Mayr, 1946: 72). The name *baueri* was subsequently accepted as valid by Vaurie (1965: 422), and by Condon (1975: 132), who expressly stated: "not a nomen nudum as claimed by Hartert and Steinbacher". Notwithstanding this definite statement, I consider that there is still room for genuine doubt about the validity of *L. baueri*. The original description reads as follows: "Ein paar nähere Verwandten hat sie [meant is *L. l. lapponica*] an *Limosa adspersa* (des Berliner Museums) aus Mexiko, und an *Limosa Baueri* (des Wiener Naturalienkabinets) aus Neuholland, welche beide jedoch bedeutend grösser oder hochbeiniger sind, beide aber ebenfalls einen schmallgebänderten Schwanz haben". Note that, although some characters are given to distinguish *L. adspersa* and *L. Baueri* from *L. lapponica*, there is nothing here to distinguish *L. adspersa* and *L. Baueri* from each other. Therefore I feel obliged to agree with Hartert & Steinbacher that, strictly speaking, *L. Baueri* is a nomen nudum. Being reluctant to reject a name that has become almost universally accepted in recent years, and because of the somewhat doubtful character of the issue, I retain *baueri* for the moment.

The original description of *L. Baueri* is on page 429, not 29 as cited in several recent lists (Condon, 1975: 132; Turbott, 1990: 151): one of those misprints that is carried on from list to list.

Even when the name *L. baueri* is considered invalid, the specimen on which it was based has historical interest. The name suggests that F.L. Bauer was the collector, which is interesting, as Whittell (1954: 43-44) describes Bauer as an artist only, and makes no mention of birds collected by him. The point intrigued me, and therefore I enquired of Dr Schifter. Dr Schifter informed me that the original specimen from the collection of Ferdinand Bauer is still present, and that in addition there is a sketch, agreeing with the specimen, dated in Bauer's own handwriting with: "Norfolk Island, 21. September 1804". This further disposes of Mathews's (1912: 220) arbitrary and unexplained restriction of the type locality to Victoria. Dr Schifter has since published a paper about Bauer and his collections, to which I refer for further particulars (Schifter, 1992).

Tringa hypoleucos Linnaeus

[*Tringa*] *Hypoleucos* Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 149 – Europa.

Collectors.— Semmelink, Allen, Verheijen.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 72); ♀, 22.ix.1971, Ruteng, 1150 m (Verheijen, RMNH no. 85152).

Tringa glareola Linnaeus

[*Tringa*] *Glareola* Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 149 – Europa.

Collectors.— De Jong (1), Verheijen (16, MCZ), Verheijen.
Material.— ♂, 4.x.1968, Rahong (Verheijen, RMNH no. 65241); ♀, 24.x.1968, Rahong (Verheijen, RMNH no. 65242); ♀, 25.x.1968, Rahong (Verheijen, RMNH no. 65243); ♀, 28.x.1968, Rahong, 900 m (Verheijen, RMNH no. 65244); ♂, 31.x.1968, Wangkung, Rahong (Verheijen, RMNH no. 85148).

Tringa nebularia (Gunnerus)

Scolopax nebularia Gunnerus, 1767, in Leem, Beskr. Finm. Lapp.: 251 – near Trondheim, Norway (reference not verified).

Collector.— Schmutz.
Material.— ♀, 25.ix.1969, Nunang-Meer, 650 m (Schmutz, RMNH no. 65240); ♀, 6.xii.1982, Nunang-Meer, 650 m (Schmutz, RMNH no. 81028).

Notes.— The Greenshank is a common winter visitor to the whole Indo-Australian region (as well as to Africa).

Gallinago stenura (Bonaparte)

Scolopax stenura Bonaparte, 1830, Ann. Stor. Nat. Bologna 4: 335 – Abita nelle isole della Sonda, segnatamente in quella de Giava = Buitenzorg, West Java (cf. Mees, 1986: 33).
Scolopax stenoptera Schlegel, 1844, Krit. Übers. Europ. Vögel: 96 – Ostindien.

Collector.— Verheijen (3, MCZ).
Material.— None.

Notes.— See the discussion under the following species.

Obviously, *G. stenura* must occur in Sulawesi (Celebes), but as White & Bruce (1986: 174) have pointed out, the documentation for its occurrence is rather unsatisfactory. The best evidence comes from Coomans de Ruiter & Maurenbrecher (1948: 191) and Coomans de Ruiter (1954: 92-93); it is very likely correct, but I agree that it is too meagre as a basis for adding the species to the avifauna of Sulawesi. Sody (1954) claims a personal observation from Makassar, and a second-hand one from Gorontalo, but he demonstrates a complete lack of awareness that snipe seen anywhere in the Archipelago could be anything but *G. stenura* (he does not even mention *G. megala*), so that his records must be dismissed. The same applies to an "unconfirmed record" by Escott & Holmes (1980). It would be better not to burden the literature with unconfirmed records.

Gallinago megala Swinhoe

Gallinago megala Swinhoe, 1861, Ibis 3: 343 – by inference several localities in northern and eastern China (cf. Mees, 1982a: 63-64).

Collectors.— Verheijen (22, MCZ), Verheijen/Schmutz.
Material.— (?), xii.1958, Rahong (Verheijen, RMNH no. 66258); ♂, 4.ii.1969, Rahong, 900 m (Verheijen, RMNH no. 65237); ♀, 10.ii.1969, Rahong (Verheijen, RMNH no. 65238); ♂, 13.ii.1969, Rahong, ca. 1000 m (Verheijen, RMNH no. 65239); (?), 26.xii.1982, Lembor, 250 m (Schmutz, RMNH no. 97173). Iris brown or greyish brown, bill yellowish or brownish olive, towards the tip darker, legs greenish to yellowish olive.

Notes.— This is apparently the commoner of the two species of snipe wintering on Flores, as Paynter (1963) received: "A long series" (22 specimens) from Father Verheijen, against three *G. stenura*, whereas I received five *G. megala* and no *G. stenura*. Verhoeye & Holmes (1998: 21) misquoted Paynter, thus giving the impression that *G. stenura* is the common snipe of Flores and *G. megala* the scarce one. In contrast, *G. stenura* is the common snipe in Java, where *G. megala* is very scarce (cf. Van Bemmel, 1938). Delacour's (1947b: 87) succinct statement that in Malaysia, *G. stenura* is rare, and *G. megala* common, is an error. Our collection contains from Java 97 specimens of *G. stenura* (among these, several from East Java), and only two specimens of *G. megala.* There are no reliable records from Sumatra (Van Marle & Voous, 1988: 92). The inclusion of Sumatra and the exclusion of Java from the winter range by Higgins & Davies (1996: 43) are both erroneous.

Calidris ruficollis (Pallas)

Trynga ruficollis Pallas, 1776, Reise versch. Prov. Russ. Reichs 3: 700 – Circa lacus salsos Dauriae campestris = Kulussutai, southern Transbaikalia (reference not verified).

Collector.— Weber.
Material.— 2 (?), 23/25.xi.1888, Reo (Weber, RMNH cat. no. 39, ZMA no. 8191).

Notes.— These birds were recorded by Büttikofer (1894: 306) under the name of *Tringa minuta.* Büttikofer listed a skin and a spirit-specimen; the latter has, evidently, also been turned into a study-skin.

Calidris alba (Pallas)

Trynga (alba) Pallas, 1764, Vroeg's Cat., Adumbr.: 7 – no locality, but refers to p. 32, no. 320 of the main volume, where: "Valt aan de Noordsche Zeekusten" = North Sea coast of Holland.

Collector.— Schmutz.
Material.— (?), 27.ix.1971, Nanga-Lili, sandy beach near a river-mouth (Schmutz, RMNH no. 85153). The small size suggests that this bird is a male.

Notes.— Bruce (in White & Bruce, 1986: 169) states: "Schmutz (1977) noted its inclusion in an unpublished list for Flores, but had no records". The list referred to would be a list I sent to Father Schmutz, and the inclusion was based on the specimen listed here.

This species has rarely been recorded from the Lesser Sunda Islands, where otherwise it is only known from Sumba (2 ♂ collected by Stein, cf. Mayr, 1944a: 141). In Java, it has also been regarded as uncommon (cf. van Bemmel, 1940b), but in East Java, Kooiman (1940a; 1940b: 102) observed the species regularly, once even a flock of ca. 100 birds.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
[♂]	118	45½	27½	–	25

Himantopus himantopus leucocephalus Gould

Himantopus leucocephalus Gould, 1837, Synops. Birds Austr. 2: pl. 37 – Australia generally and the islands of Java, Sumatra, & c.

Collector.— Schmutz.
Material.— ♀, 11.vii.1969, Kenari (Schmutz, RMNH no. 65245).

Notes.— Surprisingly, there are apparently no earlier records of this widely-distributed species.

Phalaropus lobatus (Linnaeus)

[*Tringa*] *tobata*, misprint corrected to *lobata* in the Emendanda, Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 148, 824 (Emend.) – America septentrionali, Lapponia.

Collectors.— None.

Notes.— Verheijen (1971) observed a Phalarope at Kedindi, on the north-west coast of Flores, on 1.xi.1970. The bird was associating with domestic ducks in a salt-water creek in a coconut-plantation, ca. 200 m from the sea. At sea this species is a common winter visitor throughout the region.

Esacus magnirostris (Vieillot)

Oedicnemus magnirostris Vieillot, 1818, Nouv. Dict. Hist. Nat. (Nouv. éd.) 23: 321 – no locality = la N.elle Hollande (see Pl. G. 39, fig. 1, in vol. 28, 1819).

Collectors.— Van der Sande (1), Rensch (1), Verheijen/Schmutz.
Material.— (?), i.1909, south coast (v.d. Sande, ZMA no. 24161).
Egg: c/1, 18.xi.1948, Papagaran (RMNH no. 70432).

Measurements and weight:	RMNH no. 70432	62.2 × 45.1	4.9815

Stiltia isabella (Vieillot)

Glareola isabella Vieillot, 1816, Analyse: 69 – l'Australasie.
Glareola grallaria Temminck, 1820, Manuel d'Orn. (2 éd.) 2: 503 – l'Austral-Asie.

Collectors.— Semmelink, Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 4); ♂ im., 23.vi.1969, Ruteng (Verheijen, RMNH no. 65249); ♂, 2 ♂, 25.vi.1969, Ruteng (Verheijen, RMNH nos. 65250, 65251, 65252); ♂, 3 ♀, 18.vii.1969, Ruteng (Verheijen, RMNH nos. 65255, 65253, 65254, 85149).
Iris light brown to brown, bill dark brown, at gape reddish, legs purplish brown.

Notes.— On the label of RMNH no. 65249 is noted that this is one of five specimens brought in, all (like this one) without remiges (these had presumably been pulled out by the catchers). Evidently, this species is a periodically common visitor in the southern winter.

Specimen RMNH cat. no. 4 was recorded by Schlegel (1865b: 17), but overlooked by Rensch (1931a). Of the other old, historical specimens listed by Schlegel, RMNH cat. no. 1 is of particular interest, being the type of *Glareola grallaria*, and very likely also a syntype of *Glareola isabella* (having been received from the Paris Museum).

The other member of this family to be expected on Flores is *Glareola maldivarum*. I mention it here to point out that on Timor, this species was collected as long ago as November 1829 by S. Müller (Schlegel, 1865b: 17). The year 1820 given by Schlegel is, of course, an error. I found that actually, the mounted specimen (RMNH cat. no. 19) has a cardboard label with the year 1820 on it, but on the under surface of its socle, the correct year 1829 is pencilled. White & Bruce (1986: 178) only mention a record by de Sousa (1883), but Müller's specimen was obtained fifty years earlier.

One wonders whether, perhaps, the birds seen by Father Schmutz near Nisar on 23 November 1974 and between Djonéng and Lita early December 1969, might have been *G. maldivarum* rather than *S. isabella.* The dates of specimens of *S. isabella* in the winter-quarters in our collection range from 6 June to 7 November, and one from May (without exact date). Dates of *G. maldivarum* in the winter-quarters range from 21 September to 16 April. The RMNH material from Java is dated September (2), October (46) and November (15).

Sterna albifrons sinensis Gmelin

[*Sterna*] *sinensis* Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 608 – Sina (ex Latham, 1785: 365: China).

[*Sterna*] *Pusilla* Temminck, 1840, Manuel d'Orn. (2e éd.) 4: 465 – des Îles de la Sonde et des Moluques ... On la trouve jusqu'á la Nouvelle-Guinée = Java, cf. Junge (1948: 317).

Collector.— Rensch (4).
Material.— None.

Notes.— Rensch (1931a: 489) identified his material as *S. a. sinensis*, and this was confirmed by Junge (1948: 315-318), who examined one of Rensch's specimens. Junge further concluded that the breeding birds of the region are *sinensis*, and that *pusilla* is a synonym. Nadler (1976), however, came with a different opinion: he considered that, although the breeding birds of the Indian Archipelago are *sinensis*, the region is, with a great degree of probability, the winter-quarters of a smaller subspecies, which breeds in northern India, and that the name *pusilla* was based mainly on such smaller birds, in winter plumage, as is apparent from Temminck's description and from the name he gave them (*pusilla*); for *sinensis* is larger, not smaller than nominate *albifrons*. These smaller Indian birds were included in nominate *albifrons* by Junge (1948) and by Glutz (1982: 734). If this view is accepted, all that remains to be decided is the unimportant question, whether *pusilla* is a synonym of *albifrons* or a synonym of *sinensis.* Junge made a mounted bird from Java, in breeding-dress, lectotype of *S. pusilla* (RMNH cat. no. 1 of *S. a. sinensis*). In this bird I measured a wing-length of 191 mm. This makes *S. pusilla* a synonym of *S. a. sinensis*, unless it can be proved that the specimen was not part of the type series. The specimen was collected by Kuhl (1820/1821). Unfortunately, it has been newly mounted, so that there is no original hand-writing underneath the socle, the writing being in van Oort's hand. Nevertheless, van Oort clearly indicates that the bird was originally labelled as *Sterna pusilla* Kuhl, and there can be no doubt that it was in Temminck's hands. The fact that the name *S. pusilla* was given (as a manuscript name) by Kuhl, and that Kuhl collected exclusively in West Java, where he died within nine months of his arrival from Europe, confirms that this bird must certainly have been a syntype of *S. pusilla* Kuhl, and that Junge was completely justified in making it the lectotype.

Storr (1973: 46, and several subsequent publications) elevated the weakly differentiated subspecies *sinensis* to species status, without explanation.

Sterna bergii cristata Stephens

Sterna cristata Stephens, 1826, in Shaw's Gen. Zool. 13 (1): 146 – China; and many of the south-eastern islands of Asia = China (restricted type locality).

Collector.— Semmelink.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 39).

Notes.— The above specimen was recorded by Schlegel (1864a: 11, where it is cat. no. 35).

Chlidonias hybridus subsp.

Collector: Verheijen (1, MCZ).
Material: (?), 4.vi.1961, Soa (Verheijen, MCZ no. 332909).

Notes.— This specimen was examined and identified for me by Dr Paynter (in litt., 14.x.1993), according to whom it is an immature bird, which he has not attempted to identify to subspecies. On geographical grounds, and month of collecting, the bird would almost certainly belong to the Australian subspecies *javanicus* (cf. Mees, 1977b). It is curious that this specimen seems to constitute the first definite record from the Lesser Sunda Islands, where the species ought to be a regular migrant visitor. Recent field observations from Timor confirm this (Andrew, 1986).

David & Gosselin (2002: 32) have taken me to task over treating *hybridus, a, um,* as an adjectivum, "against the advice of a scholar". The reason was that in a book of which the said scholar is co-author, the name is expressly listed as a Latin adjectivum (Coomans de Ruiter et al., 1948: 119). This book was the obvious source for a Dutch ornithologist to consult and rely on, certainly 25 years ago when my paper was published (Mees, 1977b: 49). I had every reason to regard this book, a pioneer study in its field, as a reliable guide. I note its omission from the references given by David & Gosselin. The late H. G. Deignan certainly was a good latinist. He provided the name *Pteruthius hybrida* Harington with a "sic!" and changed it into *hybridus* (Deignan, 1964: 388). This issue is clearly controversial among classical scholars. Where the specialists disagree, who am I, a complete ignoramus in this field, to take sides. The natural course to take is to retain the spelling I have used in recent years, until the controversy has been completely solved. See also below under *Cisticola*.

Chalcophaps indica indica (Linnaeus)

[*Columba*] *indica* Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 164 – in India orientali.

Collectors.— Weber, Everett, de Jong (2), Verheijen/Schmutz.
Material.— (?), xi.1888, Maumeri (Weber, RMNH cat. no. 136); ♀, 5.xi.1968, Ruteng (Verheijen, RMNH no. 65284); ♀, 5.iii.1971, Rana Loba, Borong (Verheijen, RMNH no. 66097); ♂, 11.iii.1971, Kisol, Borong (Verheijen, RMNH no. 66096); ♀, 12.iii.1971, Kisol, Borong (Verheijen, RMNH no. 66098); ♀, 1.v.1971, Ngalor-Roga, Rahong (Verheijen, RMNH no. 66099); ♂, 15.ix.1971, Naga, 250 m (Schmutz, RMNH no. 97112); ♀, 10.x.1971, Nunang, 650 m (Schmutz, RMNH no. 85314); ♀, 16.vi.1973, kuststrook Borong (Verheijen, RMNH no. 85315); ♂, 16.ix.1976, Poco Lareng (Verheijen, RMNH no. 81095); ♂, (Schmutz no. 1515, RMNH no. 81096).
Eggs: 24 clutches of 1 (19 ×) and 2 (5 ×) eggs, from various localities on Flores, and from Palué, collected in the months March (2), April (7), May (5), June (2), July (3), October (1) and November (1), and three undated (RMNH nos. 70525-70547, 73509). Unlike the eggs of most other species of pigeon, which are white, the eggs of *Chalcophaps indica* are easily identified because of their pale brownish cream colour.

Some measurements and weights:	RMNH no. 70536	27.7 × 20.9	0.3709
		28.6 × 21.3	0.3614
	RMNH no. 70538	27.2 × 19.7	0.2874
	RMNH no. 70541	26.8 × 20.9	0.3544
		26.9 × 21.1	0.3315

Notes.— Birds from Flores belong to the nominate subspecies, the males having a white forehead and supercilium, and a blue-grey crown and nape.

Birds from Timor, *C. i. timorensis* Bonaparte, are abruptly different and closer to the Australian group of subspecies, although perhaps to a certain extent intermediate

(Johnstone, 1984). The geographical variation of this pigeon, with the remarkably wide range of the nominate race, evidently requires further study.

Treron floris Wallace

Treron floris Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 496 – Flores and Solor Islands.

Collectors.— Semmelink, Allen, Martens, Weber, Everett, Rensch (2), Schmutz.
Material.— ♂, 1862, Larantoeka (Semmelink, RMNH cat. no. 1); ♂, (?) juv., xi.1888, Maumeri (Weber, RMNH cat. nos. 2, 3); (?), xii.1888, Mbawa near Rokka (Weber no. 507, ZMA); ♂, ♂?, (?), 18.vi.1974, Orong, 550 m (Schmutz, RMNH nos. 85120, 85121, 85122).

Notes.— Although this species was described by Wallace, on the basis of specimens collected in 1862 by Allen, twenty years earlier, a specimen from Bima, Sumbawa, had found its way to Leiden (cf. Schlegel, 1866b: 212; now RMNH cat. no. 7).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	145	78½	-	24	17
♂?	150	83½	-	22.5	17
(?)	152	88	23.5	23	18.5
(?)	145	76	24.5	22	16.5

Ptilinopus cinctus albocinctus Wallace

Ptilonopus albocinctus Wallace, 1864, Proc. Zool. Soc. Lond. (1863); 496, pl. XXXIX – Flores (in the interior only).
Ptilopus cinctus Florensis Schlegel, 1871, Ned. Tijdschr. Dierk. 4: 20 – Flores. Re-naming of *P. albocinctus*, as it is not regarded as a species, but a "souche".

Collectors.— Allen (1), Colfs, Rensch (6), Schmutz.
Material.— (?), 1880, Flores (Colfs, RMNH cat. no. 1); ♀, 29.iii.1976, Poco Nernancang (Schmutz, RMNH no. 97110); (?),5.vi.1976, Poco Nernancang (Schmutz, RMNH no. 81102); (?), 17.v.1976, Lingko Ncilor (Schmutz, RMNH no. 81098); (?), 22.v.1976, Lingko Ncilor (Schmutz, RMNH no. 81101); (?), 21.vii.1976, Poco Nernancang (Schmutz, RMNH no. 81103); ♀, (?), 1.v.1978, Golo Léhot (Schmutz, RMNH nos. 81100, 81099); (?), 4.v.1978, Golo Rucuk (Schmutz, RMNH no. 81097).

Ptilinopus regina flavicollis Bonaparte

[*Ptilopus*] *flavicollis* Bonaparte, 1854, Consp. Gen. Av. II: 20 – Timor.

Collectors.— Semmelink, Colfs, Everett (1).
Material.— (?) ad., 1862, Larantoeka (Semmelink, RMNH cat. no. 5); (?) ad., vi.1880, Flores (Colfs, RMNH cat. no. 6).

Notes.— As stated by Rensch (1931a: 488), this pigeon appears to be rare on Flores, being known from the two specimens listed here, and a single one collected by Everett at Maumeri. The Maumeri record, published by Hartert (1898a: 48), puzzled me, as I could not find any other evidence that Everett had visited this locality. Mrs. LeCroy (in litt., 12.iii.1991) has, however, confirmed the record: ♀, viii.1897 (Everett, AMNH no. 609099).

According to Johnstone (1981), *P. r. flavicollis* is a synonym of the Australian *P. r. ewingii*; the reason why I have not yet accepted this conclusion, is a reluctance to discard a name that has been in use since 1854, without personal investigation (for which the material has not been available to me), and that a distribution of subspecies as indicated by Johnstone is unusual. For much the same reasons, White & Bruce (1986: 201) have retained *flavicollis*. Johnstone had not examined material from Flores. Higgins & Davies (1996: 993) also continue to recognize *flavicollis*.

Ptilinopus melanospilus melanauchen (Salvadori)

J[*otreron*] *melanauchen* Salvadori, 1875, Ann. Mus. Genova 7: 671 – Flores.

Collectors.— Semmelink, Allen, Colfs, Weber, de Jong (1), Verheijen (2, MCZ), Schmutz.
Material.— ♂, 13.vi.1862, Larantoeka (Semmelink, RMNH cat. no. 11, holotype of the subspecies); (?) = ♂, 1880, Flores (Colfs, RMNH cat. no. 13); ♀, xi.1888, Maumeri (Weber, RMNH cat. no. 14); ♂ juv., xi.1888, Maumeri (Weber, RMNH cat. no. 15); ♂ imm., 29.xi.1888, Rusa Radja (Weber, ZMA no. 2574); ♂ im., 29.xi.1888, Rusa Radja (Weber, ZMA no. 2574); ♂, 15.vii.1969, Paku-Nggoang, 300 m (Schmutz, RMNH coll. no. 0000); ♀, 17.vii.1969, Paku (Schmutz, RMNH no. 85087); ♂, large gonads, 20.i.1973, near Nunag, 800 m (Schmutz, RMNH coll. no. 0000).
Eggs: c/2, 18.vi.1961, Soa (RMNH no. 70562); c/1, xi.1961, Soa (RMNH no. 70563); c/1, 1964, Soa (RMNH no. 70564). Curiously, Verheijen (1964: 198) gave only a single record (with a query) and that one for May. The eggs are plain white, only moderately glossy.

Measurements and weights:	RMNH no. 70562	29.5 × 22.3	0.4907
		29.6 × 22.4	0.5155
	RMNH no. 70563	28.1 × 22.7	0.4734
	RMNH no. 70564	29.0 × 22.6	0.4745

The eggs agree in size with eggs from Java recorded by Hellebrekers & Hoogerwerf (1967: 42), or they may be marginally broader, but they are distinctly heavier. On the other hand, they agree perfectly, in appearance, measurements and weight, with eggs of *Streptopelia chinensis tigrina*, so that a large dose of scepticism about their identification is justified.

Notes.— The name *Jotreron melanauchen* was entirely based on Schlegel (1866b: 207): "Individu de l'Île de Flores. Aile 4 pouces 2 lignes. Tache de la gorge d'un jaune de citron foncé. Tache noire de la nuque large". This is RMNH cat. no. 11, the only specimen from Flores that was available to Schlegel.

Ducula aenea polia (Oberholser)

Muscadivores aeneus polius Oberholser, 1917, U.S. Nat. Mus. Bull. 98: 18 – Pulo Siantan, Anamba Islands.

Collectors.— Semmelink, Allen, Weber, Everett, Rensch (1), Verheijen (1, MCZ), Verheijen.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 3); (?), xii.1888, Maumeri (Weber nr. 44G, ZMA); (?), xii.1888, Sikka (Weber, RMNH cat. no. 10); ♂, well-feathered nestling, 15.vi.1970, Wesang, 700 m (Verheijen, RMNH no. 65278); ♂, not dated, Flores (Verheijen, RMNH no. 81092).
Eggs: c/1, 5.v.1953, Wesang (RMNH no. 70548); c/1, 15.i.1958, Wesang (RMNH no. 70549); c/1, 18.ii.1958, Wesang (RMNH no. 70550); c/1, 24.v.1958, Flores (RMNH no. 70551); c/1, 24.v.1958, Flores

(RMNH no. 70552); c/1 ca. 29.vi.1958, Léwé (RMNH no. 70553); c/1, 16.vii.1958, Flores (RMNH no. 70554); c/1, 30.x.1958, Déngé, Todo (RMNH no. 70555); c/1, c/1, 1961, Lamba, Todo (RMNH nos. 70556, 70557); c/1, 23.i.1961, Kisol (RMNH no. 70558); c/1, 1.v.1961, Kisol (RMNH no. 70559); c/1, 13.v.1964, Kisol (RMNH no. 70560); c/1, 17.v.1964, Kisol (RMMH no. 70561). The eggs are white, slightly glossy.

Some measurements and weights:	RMNH no. 70553	46.3 × 32.6	1.4648
	RMNH no. 70554	45.5 × 33.2	1.6190
	RMNH no. 70555	47.8 × 32.9	1.7130
	RMNH no. 70557	46.9 × 32.5	1.6185
	RMNH no. 70558	52.4 × 32.9	1.8570
	RMNH no. 70559	47.0 × 33.8	1.8665
	RMNH no. 70560	49.4 × 33.8	1.7960
	RMNH no. 70561	44.8 × 32.7	1.7004

Verheijen (1964: 198) mentioned that the nine clutches he listed under this species, might include eggs of *D. l. sasakensis*. The eggs of *D. sasakensis* remain undescribed, but I would expect them to be a trifle smaller than those of *D. aenea*. Chances are, that the eggs are correctly identified. Note that some eggs are from Wesang, where also a skin of *D. aenea* was obtained (and no *D. sasakensis*), and from Kisol, which seems too low for *D. sasakensis*. White & Bruce (1986: 204) record as breeding season in the Lesser Sunda Islands the months April to July. Verheijen's eggs, however, prove breeding in January, February, May, June, July, and October; the nestling listed above would have hatched from an egg laid in March. These data suggest that nesting may take place throughout the year.

Notes.— In using the name *polia* rather than *aenea* for these birds, I follow Stresemann (1952: 520) whose arguments look convincing to me. Actually, the name *polia* had been resurrected earlier, by Delacour (1946, 1947a), following Mayr's (1944a: 147-148) argument that birds from Malaysia are different from those of the Lesser Sunda Islands (the latter were at that time regarded as the nominate race). Subsequently, Hoogerwerf (1963b) found a lot of variation in birds from diverse localities within the range here ascribed to *polia*. Perhaps his most surprising conclusion was that four specimens from Komodo and Rintja were "so different in certain aspects", that it seemed "quite impossible to unite them with *polia*". Hoogerwerf compared these specimens with the type of *D. problematica* Rensch from Sumba, and found them to agree well. He further speculated that *problematica* could be an endemic subspecies of Komodo and Rintja, and that the type from Sumba could have been a straggler from Komodo/Rintja, as: "These birds are extremely good fliers which certainly are able to cover a distance of 100 km or more within a rather short time, so that the presence on Sumba of birds originating from Komodo or Rintja need not be rejected". Especially in the light of the fact that Hoogerwerf placed specimens from West Flores in *polia*, and that Rintja is separated from western Flores by a sea strait of scarcely 1 km in width (cf. p. 6), the concept of an endemic subspecies on Komodo and Rintja is quite unbelievable. Hoogerwerf's specimens from Komodo and Rintja and probably also the type specimen of *D. problematica* had been preserved in formalin before being skinned. In spite of Hoogerwerf's awareness of the effects such conservation fluids, as well as grease and de-greasing fluids, could have on the plumage, it is likely that the differences he described have to be attributed to such factors.

In the unlikely case that differences between birds from the western part of the

range and birds from the Lesser Sunda Islands are confirmed, the name *problematica* will be available for the latter.

The authors of the chapter Columbidae in del Hoyo et al. (1997: 229) have become so confused by the several shifts of the type-locality of the species, that they include the whole range of *polia* in the range of the nominate race, for which they (correctly) give the type locality as Manila!

The specimen measured does nothing to support Mayr's contention that birds from Flores are smaller than birds from Sumba, but does not convincingly contradict it either.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
(?)	246	138	36.6	31	24.6

Ducula rosacea (Temminck)

Columba rosacea Temminck, 1836, Recueil d'Ois. 4 (livr. 98): pl. 578 – Timor.
Muscadivores rosaceus zamydrus Oberholser, 1917, Proc. U.S. Nat. Mus. 54: 179 – Solombo Besar Island, Java Sea.

Collectors.— Semmelink, Allen, Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 4); (?), vii.1974, Pota (Schmutz, RMNH no. 81093).

Notes.— The subspecies *zamydrus* was listed by Chasen (1935: 18) with an asterisk, meaning that he had not examined material, and therefore had not been able to verify its validity. Peters (1937: 49) accepted it without comment, as did Deignan (1961: 109), who referred for this to Chasen. Hoogerwerf (1963c) accepted *zamydra,* with a very unlikely distribution. Goodwin (1970: 407) mentions *zamydra*, but with added the remark "I have not seen specimens of this form".

In the mean time, Mayr (1944a: 133) came with the definite statement, that: "The description of Oberholser's *amydrus* [sic] (Solombo Besar) indicates that it is based on the characters of grease-stained specimens". Subsequently van Bemmel (1948: 376) gave this pigeon a binominal, implying that he did not recognize subspecies, whereas White & Bruce (1986: 207) also rejected *zamydra*. It seems highly unlikely that this "Kleininselbewohner" would have developed into a distinctive subspecies on Solombo Besar and Arends.

D. rosacea is a widely-distributed species inhabiting, mainly, smaller islands, westward through the Java Sea to P. Nangka off Billiton (cf. Van Bemmel, 1940a, overlooked by Van Marle & Voous, 1988), and eastwards to the Tanimbar and Kai Islands (Van Bemmel, 1948: 376). In addition, there is a record from Telofoso on Halmahera, some 900 km away from the nearest localities in the main range. This is so remote, as to require careful verification. Fortunately, this is possible. The record is based on material collected by Bernstein, and in the archives of the RMNH I found an original list from Bernstein, dated Ternate, 21 March 1862, entitled: "Lijst van de naturaliën....grootendeels afkomstig van Noordelijk Halmahera en Morotai".[5] In the list: "*Carpophaga formosa* ? van Tolofoso op N. Halmahera; Iris donker kersrood, randen der oogleden iets ligter". [6] Espe-

[5] List of natural history objects . . . . mainly originating from northern Halmahera and Morotai.
[6] *Carpophaga formosa* ? from Tolofoso on N. Halmahera; Iris dark cherry-red, eye-rims a trifle lighter.

cially as in the preceding period Bernstein's activities were confined to the North Moluccas, and as he never visited the better-known part of the range of *D. rosacea*, the record is above any suspicion. Schlegel (1866b: 201) already discussed the peculiar distribution; he also stated that Bernstein had collected five specimens at Tolofoko (there is some variation in the spelling of the name of this locality), evidently in error. Schlegel (1873: 88) correctly lists four specimens (Schlegel cat. nos. 20-23), but now there are only two left (30.i.1862, RMNH cat. nos. 23 and 24). In the exchange book, I found that on 6. vi.1899 a ♀ was sent to D. S. Drew of the Public Museum, Wanganui, New Zealand, and about the same time another one (sex not recorded) to D'Arcy W. Thompson, University College, Dundee, Scotland. With this, all four specimens have been accounted for.

Specimens from "Makassar", collected by Teysmann, received in 1878 (RMNH cat. nos. 21, 22, 31), may safely be assumed to have been mislabelled, and to originate from the islands to the south of Sulawesi (Celebes), even though Wallace is also supposed to have collected two specimens at Makassar, which were discussed by Stresemann (1941: 59). The case is very similar to that of *Macropygia magna macassariensis* (cf. Mees, 1972). Therefore, the inclusion of Saleyer into the range of the species by White & Bruce (1986: 207) was based on inference only (the specimens labelled Makassar), although it is very likely to occur there. On the other hand, Tual or Klein Kei (Little-Kei) can be added to the list of islands given by these authors (cf. Van Bemmel, 1948; Hoogerwerf, 1963c).

Ducula (*lacernulata) sasakensis* (Hartert)

Carpophaga sasakensis Hartert, 1896, Novit. Zool. 3: 564 – Lombok.

Collectors.— Everett ("a series"), Rensch (1), Verheijen/Schmutz.
Material.— (?), 14.ix.1968, Ruteng (Verheijen, RMNH no. 65277); ♂, 18.ix.1969, forest between Paku and Sok-Rutung (Schmutz, RMNH no. 66108); ♂, late ix.1969, forest between Paku and Sok-Rutung (Schmutz, RMNH no. 85077). Iris dark brown, eye-rim and legs red-cabbage violet, bill grey with a blackish tip (Schmutz).

Notes.— Interestingly, this well-marked subspecies shares the light grey crown with nominate *lacernulata* from West Java; it is abruptly different from adjacent *williami* of East Java and Bali, which has a pinkish crown. In Java, there is still a huge gap in the known distribution of *lacernulata* and *williami* (cf. Mees, 1996: 23-24).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
2♂	215, 222	162, 148	30, 32	26, 28	20.5, 22
(?)	215		148	32	28

Columba vitiensis metallica Temminck

Columba metallica Temminck, 1835, Recueil d'Ois. 4 (livr. 95): pl. 562 – Timor.

Collector.— Schmutz.
Material.— ♀, 21.vi.1972, Léma, 900 m (Schmutz, RMNH no. 85076). Iris brownish yellow, basal two-thirds of the bill, and bare skin around the eyes blood-red, bill-tip yellowish white, legs violet-red. This bird was collected in primary forest.

Notes.— This species is apparently uncommon on Flores, the above specimen providing, in fact, the first record from the island.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♀	236	126	27.5	27.7	20

Macropygia unchall unchall (Wagler)

C[*olumba*] *Unchall* Wagler, 1827, Syst. Av., Columba: 38 – Java.

Collectors.— Everett (1), Verheijen/Schmutz.
Material.— ♂, 18.vii.1969, Ruteng (Verheijen, RMNH no. 65289); ♂, 18.viii.1969, Wangkung, Rahong (Verheijen, RMNH no. 85130); ♂, fledgling, 30.vi.1970, Ruteng/Kumba (Verheijen, RMNH no. 65293); ♂, 4.vi.1976, Poco Nernancang (Schmutz, RMNH no. 97109); ♂, 29.vi.1978, Golo Rucuk (Schmutz, RMNH no. 81094); ♂, 1.v.1978, Golo Léhot (Schmutz, RMNH no. 81054). No eggs (see below); the fledgling points to laying in May.

Notes.— Previously, only a single specimen of *Macropygia unchall* was known from Flores: ♀, October 1896, collected by Everett (cf. Hartert, 1904: 182 footnote). I cannot find any difference between specimens from Flores and specimens from Java, the type-locality of the nominate race.

When Verheijen (1964) published his list, he was not aware of the occurrence of this species on Flores. It is possible that some of the eggs identified as from *M. emiliana*, actually are from *M. unchall*, but I know of no characters by which to separate the eggs of the two species, although those of the latter may average a trifle larger (cf. Hellebrekers & Hoogerwerf, 1967: 45).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
5 ♂	170-176	158-177	28.3-29	22.2-24	15.8-17
	(172.8)	(168.8)	(28.7)	(23.0)	(17.0)

Macropygia ruficeps orientalis Hartert

Macropygia ruficeps orientalis Hartert, 1896, Novit. Zool. 3: 573 – Tambora, Sambawa [sic].

Collectors.— Everett ("a series"), de Jong (1), Verheijen/Schmutz.
Material.— ♀, 12.v.1971, Langkas, Rahong (Verheijen, RMNH no. 85310); ♂, 2.vi.1976, Poco Nernancang (Schmutz, RMNH no. 85311); ♂, 23.vii.1976, Poco Nernancang (Schmutz, RMNH no. 81053); ♂, ♀, 24.viii.1976, Poco Nernancang (Schmutz, RMNH nos. 85313, 85309); ♂, 4.ix.1976, Poco Nernancang (Schmutz, RMNH no. 85312).

Notes.— There is a clear sexual dimorphism in plumage, the females differing from the males in having black spots on the breast and black streaks on the darker crown. A similar sexual difference is found in the nominate race, *M. r. ruficeps* from Java, but in the subspecies from Borneo (*nana*) and Sumatra (*sumatrana*), peculiarly, both sexes have black spots on the breast.

According to White & Bruce (1986: 188): "The supposed larger size is not a good character". In specimens of the nominate race from western Java I took the following wing-measurements: 12 ♂ 141-153 (147.1) mm, 12 ♀ 135-146 (142.1) mm. This suggests

to me that the size-difference alone is quite enough for the recognition of *orientalis*. The measurements also show a sexual difference in size in the nominate race, that is not apparent in the (admittedly quite insufficient) material of *orientalis*.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
4 ♂	155-163	164-186	19-20	19-20.2	13-16
	(159.3)	(172)	(19.3)	(19.6)	(15)
2 ♀	160, 162	166, 171	19, 20.5	20, 20	14.8, 15

Macropygia emiliana emiliana Bonaparte

M[*acropygia*] *emiliana* Bonaparte, 1854, Compt. rend. Acad. Sci. Paris 39: 1111 (27 in reprint) – Java.

Collectors.— Everett (2), de Jong (1), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— (?) nestling, 4.x.1968, Ruteng, 1100 m (Verheijen, RMNH no. 65288); ♂, 13.vi.1969, Nunang, 650 m (Schmutz, RMNH no. 85131); ♂, 12.iii.1978, Nggoang, 800 m (Schmutz, RMNH no. 81057); (?) (= ♂), 25.vi.1978, Flores (Schmutz, RMNH no. 81056); (♂), without data, but undoubtedly 1978, Manggarai, Flores (Schmutz, RMNH no. 81055).
Eggs: c/1, 10.v.1947, Bénténg Djawa (RMNH no. 70505); c/1, 2.viii.1947, Flores, without locality (RMNH no. 70506); c/1, 8.vi.1954, Wesang (RMNH no. 70507); c/1, 17.v.1956, Méngé (RMNH no. 70508); 3 c/1, v.1957, Tado (RMNH nos. 70509-70511); c/1, 1.v.1957, Tado (RMNH no. 70512); c/1, 19.ii.1958, Wesang (RMNH no. 70513); c/1, vi.1958, Tulang (RMNH no. 70514); c/1, 1.vi.1958, Tado (RMNH no. 70515); c/1, 16.x.1958, Waso Bénténg Djawa (RMNH no. 70516); c/1, 21.vi.1959, Poéng (RMNH no. 70517); c/1, 15. v.1959, Mano (RMNH no. 70518); c/1, 18.vi.1960, Lai, Palué (RMNH no. 70519); c/1, 22.vi.1960, Palué (RMNH no. 70520); c/1, 27.vi.1960, Palué (RMNH no. 70521); c/1, 29.vi.1960, Palué (RMNH no. 70522); c/1, 1.v.1960, Palué (RMNH no. 70523); c/1, 20.vi.1961, Mataloko (RMNH no. 70524). The eggs are white, almost without gloss, I cannot confirm the statement by Hellebrekers & Hoogerwerf (1967) that they are never pure white, but always: "creamy or buffy white or ivory". To me, they seem just white.

Measurements and weights:			
	RMNH no. 70505	32.5 × 23.3	0.578
	RMNH no. 70506	33.7 × 22.8	0.5575
	RMNH no. 70507	- × 24.7	0.624
	RMNH no. 70508	31.2 × 22.8	0.505
	RMNH no. 70509	34.9 × 24.7	0.5937
	RMNH no. 70510	33.0 × 23.0	0.521
	RMNH no. 70511	33.6 × 22.7	0.5463
	RMNH no. 70512	33.1 × 24.0	0.5607
	RMNH no. 70513	32.7 × 22.1	0.4302
	RMNH no. 70514	32.9 × 23.8	0.576
	RMNH no. 70515	32.6 × 21.8	0.5144
	RMNH no. 70516	36.7 × 21.8	0.567
	RMNH no. 70517	33.5 × 23.9	0.620
	RMNH no. 70518	31.7 × 23.1	0.4567
	RMNH no. 70519	33.0 × 24.0	0.612
	RMNH no. 70520	34.8 × 22.5	0.5795
	RMNH no. 70521	31.4 × 22.5	damaged
	RMNH no. 70522	34.1 × 23.2	0.608
	RMNH no. 70523	35.1 × 23.8	0.617
	RMNH no. 70524	31.2 × 22.4	0.465

Verheijen (1964) listed these 20 clutches all under the name of *Macropygia phasianella emiliana*, but at that time it was not generally known that, besides *M. emiliana*, *M. unchall*

occurs on Flores. It is likely that the collectors of these eggs identified their material to genus only. In addition, *M. ruficeps* being of fairly common occurrence on Flores, one might expect some of the eggs to belong to that species. In all three species, a single egg seems to constitute the complete clutch. The eggs of *M. emiliana* and *M. unchall* are probably not separable, but the eggs of *M. ruficeps* should be distinguishable from the former two on the basis of smaller size and, particularly, lower weight (cf. Hellebrekers & Hoogerwerf, 1967: 44-45). A snag is that the subspecies *M. r. orientalis* is distinctly larger than nominate *ruficeps* from Java, and might have correspondingly larger and heavier eggs. Anyway, there was ample reason to measure and weigh all the eggs.

A useful fact is that five of the eggs are from the island of Palué, where *M. unchall* and *M. ruficeps* may safely be assumed not to occur, so that the identification of these eggs ought to be certain. The slight reservation I feel is not because I consider it likely that *Macropygia* is represented on Palué by more than one species, but because of a very slight possibility that this species is not *M. emiliana* but *M. magna*: Verheijen (1961) heard and saw birds on Palué, but did not collect any. For comparison, here follow the weights of eggs from Java as recorded by Hellebrekers & Hoogerwerf. *M. r. ruficeps*: 0.300-0.380; *M. e. emiliana*: 0.45-0.57; *M. u. unchall*: 0.465-0.68. It is at once clear that, compared with weights from Flores, these figures are not of much help. The series from Flores suggests that eggs with a weight of less than 0.5 g could be *M. r. orientalis*, as they are well below weights of the other eggs, but the minimum recorded in Java for *M. emiliana* is 0.45 g, so that only one of the Flores eggs is below it (with 0.43). From the Java weights it might look as if eggs of over 0.6 g are *M. unchall*, but then three of the four eggs that could be weighed from Palué, definitely *M. emiliana*, are over 0.6 g. It looks as if the majority of the eggs, perhaps all of them, have been correctly identified as being of *M. emiliana* (assuming, of course, that the genus has been identified correctly).

Notes.— It is unexpected that none of the early collectors has obtained *M. emiliana*. Hartert (1898a: 49) listed two specimens (♂ ad., ♀ im.) collected by Everett. A few years later, he spoke of "several" specimens which had been sent by Everett (cf. Hartert, 1904: 182 footnote).

Whatever its merits on a morphological base, the division of the *Macropygia amboinensis* group into six subgroups, of which four are given species status, and two, the *emiliana* and the *tenuirostris* subgroups, inhabiting the Sunda region and the Philippines respectively, are placed in subspecific relationship to *M. phasianella* from eastern Australia, has something artificial, as the three subgroups thus united under the specific name of *phasianella*, are geographically separated by the subgroups *magna* and *amboinensis*, both regarded as separate species.

The absurdity of this classification was first pointed out by Mayr (1944a: 148-149, 191), who, as a consequence, reduced the members of the subgroups *magna* and *rufipennis* to subspecies of *phasianella*, but hesitated to further unite this conglomerate with *amboinensis*, which he considered to belong: "at least to the same superspecies". Mayr concluded with the suggestion that: "This whole group of forms would make a favorable subject for a study in character geography and speciation".

Now, over half a century later, Mayr's suggestion has not yet been taken up, and in spite of his very sensible comment, the illogical classification has been maintained, for example by Goodwin (1970: 152-153) and Dickinson et al. (1991: 192-193). Recently, however, White & Bruce (1986: 189) and Sibley & Monroe (1990: 198) have taken the

obvious step of treating each of Mayr's six subgroups as a separate species, and I follow them, with in mind the additional argument that the co-existence of three rather similar species of *Macropygia* on the comparatively small island of Flores, should be a warning against oversimplification. The opposite view, to unite all subgroups, has been taken mainly by Australian authors (Storr, 1973: 49 and 1984: 66; Condon, 1975: 166; Frith, 1976: 234; Blakers et al., 1984: 224) and is equally well defensible. It should be noted, however, that in a later work, Frith (1982: 143-144) has changed his opinion and treated the Australian *M. phasianella* as a separate species again, predicting that eventually the conglomerate may be found to consist of two species: *M. amboinensis*, *M. phasianella* and *M. magna* making one, and *M. tenuirostris* with *M. emiliana* and *M. rufipennis* the other.

Streptopelia bitorquata bitorquata (Temminck)

Columba Bitorquata Temminck, 1809, Hist. Nat. Pigeons, Les Colombes: 86, pl. XL – elle habite l'Inde, mais nous ignorons dans quelle île.

Collectors.— Allen (at least 5, cf. Salvadori, 1893: 422), Weber, Verheijen.
Material.— (?), xi.1888, Maumeri (Weber, RMNH cat. no. 8); ♂, (?)juv., 23.ix.1970, Maro-Kama (Verheijen, RMNH nos. 65280, 65279). Iris of adult golden yellow, of juvenile brownish cream colour; bill blackish brown, legs dark purplish red.
No eggs. Verheijen (1964: 198) recorded with a query one case of breeding in May.

Notes.— Judging by the fact that only three collectors have obtained it, this dove seems to be rather local on Flores, where it is probably confined to the coastal regions, as it is elsewhere. Schmutz (MS) saw it at Nunang (650 m), and more commonly near the west coast, from sea-level to 400 m.

Streptopelia chinensis tigrina (Temminck)

Columba tigrina Temminck, 1809, Hist. Nat. Pigeons, Colombes: 94, pl. 43 – Timor; Batavia.

Collectors.— Semmelink, Allen (at least 5, cf. Salvadori, 1893: 444), Weber (1, ZMA), Everett, Rensch (1), de Jong (2), Verheijen (2, MCZ), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 13); ♀, 17.vi.1968, Ruteng (Verheijen, RMNH no. 65256): ♀, 30.i.1970, Ruteng (Verheijen, RMNH no. 65272); ♀, 19.ix.1970, Kisol (Verheijen, RMNH no. 65273); ♀, 22.ix.1970, Maro-Kama (Verheijen, RMNH no. 65274); 2 ♂, 23.ix.1970, Maro-Kama (Verheijen, RMNH nos. 65275, 65276); ♀, 9.iii.1971, Maro-Kama (Verheijen, RMNH no. 66100); ♀, 30.vi.1971, Langkas, Rahong (Verheijen, RMNH no. 66101); ♀, 2.v.1971, Langkas (Verheijen, RMNH no. 66102); ♂ juv., 24.v.1971, Langkas (Verheijen, RMNH no. 66103); ♀, 25.v.1971, Langkas (Verheijen, RMNH no. 66104); 2 ♂, 28.vi.1971, Langkas (Verheijen, RMNH nos. 66105, 66106); ♂, 30.vi.1971, Langkas (Verheijen, RMNH no. 66107).
Eggs: 64 clutches of c/1 (39 ×) and c/2 (25 ×), collected in the months March (4), April (23), May (14), June (1), July (6), August (4), September (3), October (2), December (1), and six undated (RMNH nos. 70433-70496). The eggs are white, slightly glossy.

Some measurements and weights:	RMNH no. 70453	28.0 × 20.8	0.3735
	RMNH no. 70454	31.9 × 21.8	0.4794
	RMNH no. 70474	28.2 × 22.0	0.4447
		30.0 × 22.0	0.468
	RMNH no. 70489	31.9 × 22.4	0.4603

RMNH no. 70490	29.7 × 22.6	0.5191
RMNH no. 70491	29.1 × 21.6	0.4383
RMNH no. 70492	28.9 × 21.8	0.4151
RMNH no. 70493	30.7 × 21.1	0.451
	31.0 × 21.3	0.4511

Geopelia striata maugei (Temminck)

Columba Maugeus Temminck, 1809, Hist. Nat. Pigeons, Les Colombes: 115 – les îles de l'Australe-Asie.
Columba maugens Temminck, 1809, Hist. Nat. Pigeons, Les Colombes: pl. LII – no locality.
C[*olumba*] *maugei* Temminck, 1811, Hist. Nat. Pigeons, Index: xiv – correction of misprint (cf. Mees, 1975b: 126-127).

Collectors.— Semmelink, Allen, Martens, Everett, Rensch (2), de Jong (1), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 2); 2 ♂, 16.ix.1970, Maro-Kama (Verheijen, RMNH nos. 65299, 65300);(?), 23.ix.1970, Maro-Kama (Verheijen, RMNH no. 65301); ♂, 30.ii.1971, Nisar-Badjo, 50 m (Schmutz, RMNH no. 66110); ♀, 9.iii.1971, Maro-Kama, Kisol (Verheijen, RMNH no. 66109).
Eggs: c/2, 23.vi.1947, Rekas (RMNH no. 70500); c/2, Dampék, 21.vi.1959 (RMNH no. 70501); c/2, 1. v.1959, Dampék (RMNH no. 70502); c/1, 1960, Rekas (RMNH no. 70503); c/2, 3.v.1960, Téo (RMNH no. 70504), and three undated clutches (RMNH nos. 70497-70499). The eggs are white, smooth but without gloss.

Some measurements and weights:	RMNH no. 70500	21.8 × 17.1	0.2135
		22.7 × 17.3	0.2072
	RMNH no. 70501	21.5 × 17.0	0.1916
		22.9 × 17.1	0.1891
	RMNH no. 70502	22.5 × 17.0	0.23
		24.4 × 17.3	0.2066
	RMNH no. 70504	21.6 × 17.8	0.2172
		22.0 × 17.8	0.2142

Trichoglossus (*haematodus) weberi* (Büttikofer)

Psitteuteles weberi Büttikofer, 1894, in Weber, Zool. Ergebnisse 3: 290, pl. XVII fig. 1 – Flores.

Collectors.— Weber, Everett ("a fine series"), Endih (1), Rensch (4), de Jong (4), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— 2 (?), 23/25.xi.1888, Reo (Weber, RMNH cat. nos. 1, 2, syntypes); (?) juv., 26/28.xi.1888, Bari (Weber, RMNH cat. no. 4, syntype); ♂, i.1889, Endeh (Weber, RMNH cat. no. 3, syntype); 15 ♂, 17 ♀, 6 (?), 1969/1976, from Rahong, Nunang, Ulu Ros, Larang, Langkas (Rahong), Nggolong-Tédé (Verheijen/Schmutz, RMNH, cat. nos. 5-42). Iris red, bill red, legs brownish grey.
Eggs (fig. 13f): c/2, 25.viii.1960, Mataloko (RMNH no. 70577); c/2, 20.vi.1961, Mataloko (RMNH no. 70578); c/2, 25.v.1962, Mataloko (RMNH no. 70579). The eggs are white.

Measurements and weights:	RMNH no. 70577	26.3 × 21.6	0.4538
		26.7 × 21.0	0.4247
	RMNH no. 70578	28.1 × 22.1	0.4528
		27.0 × 21.7	0.4456
	RMNH no. 70579	26.4 × 22.5	0.4105
		26.5 × 22.0	0.4202

Notes.— The nomenclatural history of this distinctive endemic form is a chequered one. It was introduced in ornithology by Büttikofer, as a geographical representative of *T. euteles* (Büttikofer described it as a species, but he did not yet use ternary nomenclature). Mivart (1896: 129-130), the first to comment, was misguided by four specimens of *T. euteles* mislabelled as being from Flores (BM, leg. Allen), into believing that *T. weberi* was a synonym of *T. euteles*. The matter was put right by Hartert (1898a), who re-instated *T. weberi* as an "excellent species". Mathews (1927: 296) listed it, under the generic name *Eutelipsitta* thought up by himself, as a species, *E. weberi*. The specific status was apparently given because he believed that *weberi* and *euteles* both occurred on Flores. Three years later he corrected this: "Read *Eutelipsitta euteles weberi* (Büttikofer), and delete Flores from the distribution of *E. e. euteles*" (Mathews, 1930: 914). The elimination of Flores from the range of *T. e. euteles*, enabled Mathews to treat *weberi* as a subspecies.

Up to that time, the relationships, as a species or a subspecies, had always been sought with *T. euteles*. Rensch (1931a: 527) came with a radically different proposal: "Ich fasse "*Psitteuteles*" *weberi* als stark specialisierte Rasse von *Tr. ornatus* auf, da alle Zeichnungsmerkmale dieses Rassenkreises vorhanden sind (gelber Halsring, Blau am Kopfe etc.) und nur die Lipochromfärbung der Unterseite weniger intensiv ist". Rensch's *T. ornatus* evidently included *T. haematodus*, but these were separated by Peters (1937: 148), in whose classification *T. ornatus* became a monotypic species, and all other forms, including *weberi*, went with *haematodus.* A year earlier, Stresemann (1936: 363) had listed *T. ornatus* as a separate species, and later he supported this opinion with the following argument: "*T. ornatus* steht der weitverbreiteten Art *T. haematodus* ziemlich nahe, ist aber so stark von dieser unterschieden, dass er als besondere Art geführt werden muss" (Stresemann, 1940: 435).

The same classification was accepted by subsequent revisers, such as Cain (1955) and Forshaw (1973: 58-59). Cain (1955: 443) placed, within the species *T. haematodus*, *weberi* in the "*capistratus* group", stating: "*weberi* is a small greened *flavotectus*". Cain's evaluation of *weberi* is difficult to contradict, but does hardly do justice to its aberrant character in comparison with the surrounding subspecies. Considering the very close relationship usually existing between birds from Flores and Sumbawa, the striking differences between *weberi* and *T. h. forsteni* need an explanation.

Rensch (1931b: 395) discusses a ♂ from Wai Sano, collected by de Jong, but strangely, in the preceding enumeration of material no specimen from that locality is listed.

Measurements:	wing	tail	culmen from cere
15 ♂	124-132	82-102	18-20.1
	(127.8)	(93.2)	(19.1)
16 ♀	123-131	82-109	17-19.2
	(127.1)	(93.5)	(18.4)

Cacatua sulphurea occidentalis Hartert

Cacatua parvula occidentalis Hartert, 1898, Novit. Zool. 5: 120 – Lombok.

Collectors.— Semmelink, Allen, Martens, Weber, Everett, Endih (2), Rensch (2), de Jong (2), Geeraeds, Verheijen/Schmutz.

Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 4); 3 (?), 1862, Flores (Allen, RMNH cat. nos. 1-3); (?), 23/25.xi.1888, Reo (Weber, RMNH cat. no. 5); (?), 17.ix.1968, Nunang (J. Geeraeds, RMNH no. 66136); ♀, 11.v.1969, Waé-Wako (Schmutz, RMNH no. 66137).
Eggs (fig. 13g, 13gg, 13ggg): c/1, 23.vi.1955, Flores (RMNH no. 70573); c/2, 28.vi.1955, W. Rembong (RMNH no. 70574); c/1, 20.xi.1960, Soa (RMNH no. 70575); c/1, 26.ii.1961, Kisol (RMNH no. 70576); c/1, not dated, Soa (RMNH no. 70580). The eggs are elongate, dull white, without any gloss, their surface slightly rough.

Measurements and weights:	RMNH no. 70573	35.8 × 27.2	1.3123
	RMNH no. 70574	43.5 × 29.0	1.510
		44.5 × 29.2	1.6332
	RMNH no. 70575	42.0 × 27.1	1.3496
	RMNH no. 70576	39.9 × 28.6	1.3719

Notes.— Of the subspecies *parvula*, only the type (♀, 1829, Samao, leg. S. Müller, RMNH cat. no. 1) was available to me for comparison. It certainly has a smaller (especially a more slender) bill than all specimens from Flores, and therefore I would tentatively retain *occidentalis*, which was synonymized with *parvula* by White & Bruce (1986: 211). Forshaw (1973: 122) also recognized it.

Measurements:	wing	tail	tarsus	culmen from cere	culmen depth	culmen width
Flores (*C. s. occidentalis*)						
♀	207	107½	18.6	30.4	20.4	19.5
5 (?)	209-223	99-106	19.4-20.5	31.2-38.3	19.8-24	19-21
Samao off Timor (type of *C. s. parvula*)						
♀	216	114	19.3	30	19.6	16

Tanygnathus megalorynchos floris Hartert

Tanygnathus megalorhynchos floris Hartert, 1924, Novit. Zool. 31: 126 – South Flores (Mangarai).

Collectors.— Everett (5), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— (?), 1.i.1969, central Manggarai (Schmutz, RMNH no. 66133); ♀, 11.xi.1970, Réo, near the coast (Verheijen, RMNH no. 66134); ♀, 17.vii.1971, Look-Mabacone, mangrove (Schmutz, RMNH no. 66135). Iris grey, bill red with a whitish tip, cere greyish, eye-rim above the eye grey-yellow, below it grey, legs olive grey.

Notes.— Schmutz (MS) reports observations from the coastal region near Mburak (50 m), where at Sokrutung many hundreds of *Tanygnathus* and *Cacatua* were seen as they came to sleep communally in some large trees along the river. Inland they were seen at Kulan (430 m), also a swampy place, between Paku (350 m) and Kandang (600 m), and Nggoang (900 m). According to locals, they came in that season (about the end of February) to Nggoang to harvest the nuts of *Canarium asperum*. The five specimens collected by Everett were all females; so were two of the three birds collected by the fathers, the sex of the third one being uncertain. It seems that the male sex of *T. m. floris* remains unknown. Note that Forshaw (1973: 188) examined 8 specimens, all females: the total material of the subspecies known.

Forshaw (l.c.) recognized eight subspecies (nominate *megalorynchos*, *affinis*, *subaffinis*,

hellmayri, viridipennis, djampeae, floris and *sumbensis*). White & Bruce (1986: 227-228) reduced this to five, by placing *viridipennis, djampeae* and *floris* in the synonymy of nominate *megalorynchos,* on the basis of the argument that the characters of *viridipennis* and *djampeae* were due to "an irregular small island effect unworthy of formal designation", and *floris* was based on: "a clinal effect leading to *sumbensis*". Lacking adequate comparative material to form an independent opinion, I prefer to follow Forshaw's more cautious approach.

Measurements:	wing	tail	tarsus	culmen from cere	depth of culmen at base	width of culmen at base
♀	229	146	21.4	45	23	24.2
♀	220	137	21	42	23	23.6
(?)	235	150	23	46	27	26.8

Loriculus flosculus Wallace

Loriculus flosculus Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 488 – Flores.

Collector.— Allen.
Material.— (?), 1862, Flores (Allen, BM no. 73.5.12.1555, holotype).

Notes.— This species is known from a single unsexed specimen only, collected by Allen, hence without an exact date and locality. Finsch (1868: 728) regarded the bird as immature, as the red throat patch appeared to be not fully developed. Reichenow (1882: 114) was apparently the first to add information that did not exist; he wrote "iride miniatis" and assumed that the type was a male. Sometimes Allen recorded the colour of the eyes on the labels of specimens he collected, but there is no such information on the label of the holotype of *L. flosculus.* Enigmatically, Forshaw (1973: 320) describes adult males as well as females; he also describes the iris colour: orange in males, brown in females, with a reference to Wallace. I have been unable to find this reference and as Wallace never had more than this one unsexed individual, it cannot be correct.

During the last twenty years, there have been a number of sight records, as summarized by Butchart et al. (1996: 344-346); the cumulative evidence is sufficient to accept that the species still exists.

The eggs described by Forshaw, ex Schönwetter (1964: 526) cannot have been correctly identified. One might think of confusion with *L. exilis* of Sulawesi (Celebes), which has been considered a subspecies of *flosculus* by Rensch (1931a: 525), but the measurements seem too large for that dwarf of the genus, and moreover it inhabits Sulawesi (Celebes), not Flores. Rensch has not been followed, and all later authors, like Stresemann (1936: 363; 1940a: 444, 445) and Peters (1937: 259) have treated *L. exilis* as a separate species. Stresemann considered the presumed relationship between *L. flosculus* and *L. exilis* at best remote.

Measurements:	wing	tail	tarsus	culmen from skull	culmen from cere
(?)	80	34	10.4	16.4	10.5

Geoffroyus geoffroyi floresianus Salvadori

Geoffroyus floresianus Salvadori, 1891, Cat. Birds Brit. Mus. 20: 406 – Flores.

Collectors.— Semmelink, Allen, Everett, v.d. Sande (1), Rensch (8), de Jong (2), Verheijen (5, MCZ), Verheijen/Schmutz.
Material.— ♂, ♀, (?) juv., 1862, Larantoeka (Semmelink, RMNH cat. nos. 5-7); ♂, 1862, Flores (Allen, RMNH cat. no. 1); ♂, 9.xii.1968, Pongkor (Verheijen, RMNH no. 59809); ♀ juv., 13.ix.1971, Tjeréng, 850 m (Schmutz, RMNH no. 85281); ♀, 22.ix.1971, Kandang, 900 m (Schmutz, RMNH no. 85282); ♂, 24. ix.1971, Nisar (Schmutz, RMNH no. 97117); ♂, 16.x.1971, Tjeréng, 750 m (Schmutz, RMNH no. 85283); ♀, 25.v.1974, Nunang, 1000 m (Schmutz, RMNH no. 81064); ♂, 25.vi.1975, Paku, 300 m (Schmutz, RMNH no. 81068); ♂, 28.vi.1978, Golo Rucuk (Schmutz, RMNH no. 81067); ♂, 9.x.1982, Cereng, 600 m (Schmutz, RMNH no. 97118). Iris sulphur yellow.
Eggs: c/3, 14.vi.1954, Wesang (RMNH no. 70565); c/2, 14.v.1955, Mano (RMNH no. 70566); c/3, Mano (RMNH no. 70567); c/1, 10.vi.1957, Montjok (RMNH no. 70568); c/3, c/2, 7.v.1957, Méngé (RMNH nos. 70569, 70570); c/2, 3.vii.1957, Flores, without locality (RMNH no. 70571); c/2, 12.vii.1959, Léwé (RMNH no. 70572).

Measurements and weights:	RMNH no. 70565	30.3 × 25.4	0.6595	
		31.1 × 25.5	–	damaged
		31.9 × 25.7	0.6586	
	RMNH no. 70566	29.8 × 25.6	0.6591	
		30.2 × 25.4	0.6386	
	RMNH no. 70567	28.5 × 24.5	0.5853	
		29.8 × 26.5	0.7269	
		29.9 × 25.6	0.6717	
	RMNH no. 70568	34.2 × 26.3	0.737	identification correct?
	RMNH no. 70569	30.8 × 26.0	0.6615	
		31.5 × 25.8	0.7437	
		31.6 × 26.3	0.7317	
	RMNH no. 70570	29.8 × 25.4	0.7165	
		30.4 × 26.3	0.688+	very large blowhole
	RMNH no. 70571	30.5 × 25.6	0.6455	
		30.9 × 25.5	0.694	
	RMNH no. 70572	29.0 × 25.0	0.5982	
		29.1 × 25.4	0.6525	

Notes.— These birds are rather smaller in wing and tail than the specimens measured by Forshaw (1973: 171).

Measurements:	wing	tail	tarsus	culmen from skull	culmen from cere
♂	156	70	-	225	21.7
♂	154	71	20	26.5	22
♂	153	66	17	25	22
♂	160	77	16.8	26	22.5
♂	163	71	-	26	21.8
♀	149	69	19½	25	20
♀	152	74	18	25.5	21.3
♀ juv.	152	70	17½	25	20.5

Cuculus saturatus horsfieldi Moore

Cuculus horsfieldi Moore, 1858, in Horsfield & Moore, Cat. Birds Mus. Hon. East-India Comp. II: 703 – Java.

Collectors.— Allen, Everett, de Jong (3), Schmutz.
Material.— ♂ im., 29.i.1976, Joneng, dunes (Schmutz, RMNH no. 97107); ♀, 12.xi.1977, Cereng, 400 m (Schmutz, RMNH no. 97106); ♂ im., 12.ii.1982, Nunang, 650 m (Schmutz, RMNH no. 81059). Iris ochre, eye-rim yellow.

Notes. — Their measurements place these specimens definitely in the subspecies *horsfieldi* (cf. Junge, 1937a). Payne (in del Hoye et al., 1997: 512, 555) has made the interesting suggestion that *horsfieldi* is not a subspecies of *C. saturatus*, but a separate species. The evidence provided is somewhat sketchy and I look forward to a more comprehensive documentation.

Measurements:	wing	tail	entire culmen	exposed culmen
♂	207	147	28	21.2
♂ im.	202	144	27	20
♀	200	127	28	21.4

Cuculus saturatus lepidus S. Müller

Cuculus lepidus S. Müller, 1845, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 236 – Timor.

Collectors.— Everett (6), Rensch (3).
Material.— None.

Notes.— Everett's men collected half a dozen specimens towards the end of 1896, and Rensch obtained three in June 1927. Although Rensch (1931a: 542) reported that he found it "vereinzelt", it is still strange that it was not obtained by the Fathers, neither did Verheijen (1964) acquire its eggs.

C. s. lepidus is a mountain bird, not usually occurring below ca. 800-1000 m, although Rensch (1931a: 542) found it on Bali as low as 500-600 m. In the mountains of the Lesser Sunda islands it is widely distributed. White & Bruce (1986: 231) list it from Lombok, Sumbawa, Flores, Pantar, Sumba and Timor. Also Bali, as just mentioned.

The Sumba record is, however, erroneous. The species was first listed by Rensch (1931b: 389), in an enumeration of the birds of Sumba, and casually mentioned by Rensch (1931a: 542). I cannot find on what the Sumba record by Rensch, Peters (1940: 20), and White & Bruce is based. The species was not recorded by A.B. Meyer, not mentioned by Hartert (collections of Doherty and Everett), not collected by Dammerman, Stein or Sutter. The error probably originated from the confusion there has been over the names of the *Cuculus*-species in the Indo-Australian region. Until recently, the name *C. poliocephalus lepidus* was used for the form now called *C. saturatus lepidus*. For a while, *C. saturatus* was known by the name *C. intermedius.* Note that Rensch (1931a: 541) gives under *C. p. lepidus*, mistakenly, a reference to *C. intermedius* of Hartert (1898a: 45), which is, however, *C. saturatus horsfieldi*. Rensch seems to have thought that *C. intermedius* of Hartert applied to *C. s. lepidus,* and has overlooked that *C. saturatus lepidus* has in the same article the name *C. poliocephalus.*

The fact that the record from Sumba is erroneous, does not necessarily mean that therefore *C. s. lepidus* does not occur on the island. Pantar, from where it is reliably known, is not much higher than Sumba (1365 m against 1225 m). Another factor influencing the distribution may be the availability of host species. In Java *Phylloscopus trivirgatus* and *Seicercus grammiceps* have been recorded as hosts. Related species (*Phylloscopus presbytes, Seicercus montis)* occur on Flores and Timor, but no resident *Phylloscopi* are known from Sumba.

Cuculus pallidus (Latham)

C[*olumba*] *pallida* Latham, 1801, Suppl. Ind. Orn.: lx – Nova Hollandia = New South Wales.
Cuculus poliogaster S. Müller, 1845, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 236 noot 4 – Ternate.

Collector.— Schmutz.
Material.— ♂, 26.x.1969, Nanga-Lili (Schmutz, RMNH no. 65302).

Notes.— Individuals of this species found outside Australia may be assumed to be migrant visitors. Besides Flores, it has in the Lesser Sunda Islands been recorded from Timor (McKean, Mason & O'Connor, 1975). I do not think that the occurrence on Timor as late in spring as the end of October, justifies the assumption that it reproduces there (although I do not deny the possibility). Several other migrants from Australia may stay in their winter quarters until October and even November, for example *Stiltia isabella, Halcyon sancta, Myiagra r. rubecula* (cf. Mees, 1982a). The Flores specimen is equally late. *C. pallidus* is peculiarly scarce outside Australia: besides those from the Lesser Sunda Islands, there is one record from Babar (cf. Hartert, 1906: 295, s.n. *Cuculus variegatus*), one from Ternate (the type specimen of *Cuculus poliogaster*, collected by Forsten), and only three from New Guinea. Evidently few birds migrate outside Australia.

Cacomantis variolosus sepulcralis (S. Müller)

C[*uculus*] *sepulcralis* S. Müller, 1843, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 177 – Java en Sumatra.

Collectors.— De Jong (1), Verheijen/Schmutz.
Material.— ♂, 7/8.vi.1968, Ruteng (Verheijen, RMNH no. 59807); ♀, 22.vi.1971, Langkas, Rahong (Verheijen, RMNH no. 85259); (?) pull., 17.ix.1976, Waé Lega (Schmutz, RMNH no. 81305); ♂, 29.vi.1978, Golo Léhot (Schmutz, RMNH no. 81319).
Eggs in the collection Ottow. Verheijen (1964) recorded eggs of this cuckoo in the months May (1), July (2), August (3), September (5) and October (2). According to Ottow & Verheijen (1969), *Saxicola caprata* is the favourite host on Flores: eleven of the thirteen records concerned this species (the host-species of the two remaining nests could not be identified, it was probably a warbler).

Notes.— The species *C. variolosus* can conveniently be divided into two sub-groups: the brighter, darker "*sepulcralis*" group, ranging from the mainland of south-eastern Asia, to the Philippines, the Greater Sunda Islands, and the Lesser Sunda Islands east to Flores and Sumba, and the "*variolosus*" group, duller in plumage, found in northern and eastern Australia, New Guinea, the Moluccas and Timor.

On Timor, the species was discovered in 1829 by Salomon Müller, who recognized its distinctiveness and described the one specimen obtained as *C. tymbonomus.* This remained generally recognized and with the introduction of ternary nomenclature, became *Cacomantis variolosus tymbonomus*.

Confusion was, unintentionally, started by Junge (1937b: 179-180), who compared specimens of *C. variolosus* from New Guinea (migrants from Australia, although this is not stated clearly), with material from northern Australia (*dumetorum*) and from Timor (*tymbonomus*). He considered these all identical and as *tymbonomus* is an older name than *dumetorum*, he concluded that northern Australia should be included into the range of *tymbonomus*. The specimens from northern Australia available to Junge were: one ♀, 31.vii.1840, Pig Lagoon, Port Essington (RMNH cat. no. 1, name of collector not given, but almost certainly J. Gilbert), and a bird of unknown sex from Cape York, without date or collector's name, purchased from Frank in 1870. Junge's text: "the specimens of *tymbonomus*, which are in the Leiden museum" is due to his inclusion of specimens from Australia and New Guinea under that name, for there is not now, and there has never been, more than the one specimen from Timor in the collection. That the specimen is a holotype was already made clear by its describer: "*C[uculus] tymbonomus*, n. sp. Het ♂, hetwelk wij alleen van deze soort bezitten" [7]) (Müller, 1843: 177). In judging Junge's work, it should be kept in mind, how very little he had to go on. His material will be further discussed below.

Peters (1940: 25-26), informed by Mack that *dumetorum* cannot be separated from nominate *variolosus*, and by Junge that *tymbonomus* is an earlier name for *dumetorum*, naturally placed both names into the synomymy of nominate *C. v. variolosus*. Probably through an oversight he omitted to mention Timor in the description of the range of this expanded subspecies, so that it remains unclear whether he would have regarded it as a resident or as a migrant visitor from Australia, although the latter is likely.

Mayr (1944a: 149-150), on the basis of Stein's material from Timor, disagreed with Junge: "It has been assumed by recent writers, for some curious reason, that no resident race of this cuckoo occurs on Timor Island and that the name *tymbonomus* was a synonym of *variolosus* or at best an earlier name for *dumetorum* from western Australia. Stein's specimens prove that there is an endemic race of this species on Timor, as might be expected from the general distribution of the species, and that the name *tymbonomus* is, therefore, not applicable to western Australian birds".

Mayr proceeds to describe the subspecific differences. His criticism of "recent writers", just quoted, is somewhat overdone, for Junge never mentioned whether he regarded *C. variolosus* on Timor as a resident or as a migrant visitor: the fact that he was unable to distinguish the type of *tymbonomus* from Australian birds does not automatically mean that he considered it a migrant. Peters did not give an opinion either.

This is as matters stood, when White got on the trail. He asked me to examine the type specimen of *tymbonomus*, with the thought in mind that it might be a migrant from Australia. From my reply (dated 18.xi.1976), I quote: "The type of *tymbonomus* is our only specimen from Timor. It belongs to the pale Australian group, and allowing for 140 years difference in age, it does not look different from two specimens collected by me

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[7]) *C[uculus] tymbonomus*, n. sp. The single male we possess of this species

in northern Australia. The type of *tymbonomus* is plain above, without the rufous edges to the feathers which Mayr claimed are characteristic of this race. I would suspect all birds with rufous edges to be immature. I regret that we have no juvenile ('immature' of Mayr) birds, which according to Mayr would be 'even more different'. One old specimen from Timor does not make much of a series. In my opinion the type (merely labelled 1829, without date), might conceivably be a migrant". White (1977) presented my reply correctly, but added a concluding sentence for which I would certainly not have wanted to share responsibility: "If there is a distinct resident form in Timor, it is evident that *tymbonomus* is not on present evidence available as its name". Next we find: "Müller's *tymbonomus* has been confirmed as a migrant of the nominate form (G.F. Mees)" (White & Bruce, 1986: 236). Thus, my cautious words: "might conceivably be", were, in two steps, changed to "confirmed", and on this basis, Bruce (l.c.) felt justified to provide the juvenile birds from Timor, described by Mayr, with a new subspecific name, *C. v. whitei*. It does not look as if Bruce had personally examined any of this material.

In the meantime, the type of *tymbonomus* had been sent to Dr Schodde, who informed me (in litt., 2.ii.1979) as follows: "We have now compared it with a selection of Stein's material from Timor and found they all belong to one and the same subspecies ... *tymbonomus* may look like *variolosus* from northern Australia but retains juvenile barring on the under-tail coverts and a rufous wash on the rectrices longer into adulthood and has a proportionally much longer tail".

The two Australian birds examined by Junge are both in their first juvenile plumage: the Port Essington specimen is heavily barred, both above and below, the Cape York one is also heavily barred below, but the upper surface is more spotted than barred. It will be clear that these two specimens could not possibly form a basis for a meaningful comparison with one adult ("nearly adult" according to Junge) specimen from Timor. The conclusion that the Timor bird did "fully agree" with specimens from North Australia is therefore enigmatic, as is his remark about birds received from the Buitenzorg Museum, which in its context suggests that these were Australian birds. Actually, they are birds from the Mamberamo expedition (leg. W.C. van Heurn), previously recorded by Hartert (1932: 453), which Hartert assumed (correctly, no doubt) were migrants from Australia. In addition, Junge had two specimens from southern New Guinea, one from Andai, and one from Misool. Mr White, in common with a majority of his fellow-men, sometimes found it difficult to abandon a pet theory. He had another one about *C. variolosus*: "I wonder whether C. *variolosus* and *C. sepulcralis* are in fact conspecific. Might not *C. heinrichi*, which I have not seen, but which was stated to have a barred juvenile plumage (unlike *C. castaneiventris*), possibly represent *C. sepulcralis*. Stresemann's description of *C. heinrichi* did not consider this possibility" (White, in litt., 10.xii.1976). My reply (dated 21.xii.1976) read: "As *C. heinrichi* is not represented in our collection I am unable to speculate about its relationships. As regards your suggestion it is relevant to state, however, that I know the songs of *C. variolosus sepulcralis* (Java), *C. v. chivae* (Biak), *C. v. variolosus* (New South Wales) and *C. v. dumetorum* (Northern Australia), and they all sound pretty much the same to me, whereas according to Heinrich (in Stresemann, 1931) the song of C. *heinrichi* is 'ganz anders'". Later, without reference to Heinrich's observations, White (in White & Bruce, 1986: 235), still without having examined material, repeated his opinion: "that *C. heinrichi* is derived from C. *sepulcralis*". This opinion, of the co-occurrence on Halmahera and Batjan of *C. variolosus* with a

presumed derivative of C. *sepulcralis*, must have influenced White in his decision to treat these as different species. Against this, his remark about the close relationship between *C. merulinus*, *C. sepulcralis* and *C. sonnerati*, with the conclusion that: "It is, however, wrong to suppose that they are all representatives of a single species in view of the situation in the Malay Peninsula, Greater Sundas and part of the Philippines, where 3 sympatric species occur", seems odd, as nobody has ever claimed these three to be conspecific, so that he is attacking windmills here.

Sibley & Monroe (1990: 98-99) have accepted White's ideas and claimed of C. *sepulcralis*: "this species is distinct and more closely related to *C. merulinus* with which it is sympatric".

The suggestion that *C. variolosus* and *C. sepulcralis* are not conspecific, although their ranges are complementary, deserves some consideration, but I find the assumption that the two are not even very closely related, and that *C. sepulcralis* is closer to *C. merulinus* (with which, indeed, it is sympatric over a large part of its extensive range), completely unacceptable. The songs of *C. merulinus* and *C. variolosus* are clearly different, as undoubtedly every ornithologist with field-experience in south-east Asia knows, and as I described from Java (Mees, 1954). In evaluating the relationship between the *variolosus* and the *sepulcralis* groups, not only their similarity in voice will have to be considered, but also the fact that the Timor form seems to be to a certain extent intermediate, resembling *variolosus* in plumage, but *sepulcralis* in relative length of the tail. Tail-lenght as such cannot be considered a specific character in this case, for the longest-tailed subspecies, *C. v. macrocercus*, is found in the Bismarck Archipelago.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Flores (*C. v. sepulcralis*)					
♂	117	126	13.4	22	17.3
♀ juv.	111	112	14	22	16
Java (*C. v. sepulcralis*)					
10 ♂	115-122	115-133	15-18	18-22.7	16-17.8
	(118.2)	(122.5)	(16.8)	(20.9)	(17.2)
Timor (*C. v. tymbonomus*)					
♂	123	119	17.5	22.5	16.8
Kimberley Division, Australia (*C. v. dumetorum*)					
♀	127	95	16.5	20.5	17
♀	128	105	17	23	17.5
Port Essington, Australia (*C. v. dumetorum*)					
♀ juv.	122	99	16	20.2	17.2
Cape York, Australia (*C. v. dumetorum*)					
(?) juv.	122	94	17	19.8	14.8
Pionier bivak, New Guinea					
♂ subad.	121	102	17.3		
♂ subad.	125	98	16	23	18

Chrysococcyx basalis (Horsfield)

Cuculus basalis Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 179 – Java.

Collector.— Rensch (1).
Material.— None.

Notes.— For a discussion of records of this species from Borneo, see the notes under *C. minutillus.*

Chrysococcyx lucidus plagosus (Latham)

C[*uculus*] *plagosus* Latham, 1801, Suppl. Ind. Orn.: xxxi – Nova Hollandia.

Collectors.— Ten Kate, Verheijen/Schmutz.
Material.— (?), iv.1891, Sika (ten Kate, RMNH cat. no. 8); ♀, 4.vii.1971, Langkas, Rahong (Verheijen, RMNH no. 69760).

Notes.— The identification of several species of this genus is notoriously difficult. The specimen from Flores listed by Wallace (1864: 484) as *Chrysococcyx chalcites* (which equals *C. lucidus*), was apparently referred to *C. basalis* by Sharpe (1877: 320, cf. Parker, 1981: 35; I can find no evidence that Allen ever collected more than a single specimen of the genus *Chrysococcyx* on Flores), was re-identified as *Chalcococcyx malayanus* by Shelley (1891: 299) and as *Chrysococcyx russatus jungei* by Parker (1981: 37). The specimen collected by Ten Kate was originally identified as *Chalcococcyx malayanus* (cf. Büttikofer, 1892: 194), and correctly re-identified as *Chalcococcyx plagosus* by Finsch (1900: 95).

It is with much hesitation that I have retained the subspecific name *plagosus* for these birds, for in a well-argumented paper, Gill (1983) has shown that geographical differentiation between populations of Australia and New Zealand is negligible. If two subspecies are recognized, obviously birds wintering in the Lesser Sunda Islands must belong to the Australian *plagosus* and not to nominate *lucidus.* Gill made in his revision no mention of the subspecies *aeneus*, described from the New Hebrides by Warner (1951), and from the discussion he gives of the New Hebridean population, it is apparent that he would not expect an endemic subspecies there; like previous authors (e. g.: Friedmann, 1968: 110), he includes the New Hebrides into the range of *C. l. layardi*. *Chalcites lucidus aeneus* Warner is a primary homonym of *Chalcites malayanus aheneus* Junge (cf. ICZN, 1985: art. 58 (6)). Many years ago I drew the attention of Dr Warner to the homonymy, and the fact that he has never renamed *C. l. aeneus,* may mean that he also did no longer consider it a recognizable subspecies. Greenway (1978: 108-109) has accepted the subspecies, presumably without new investigation. I know of no other mention of it in the ornithological literature.

The statement in Blakers et al. (1984: 300) that this species has resident populations in the Philippines, with a reference to Condon (1975: 208-209), who made no such claim and describes the range correctly, must be due to confusion with *C. minutillus.*

Chrysococcyx minutillus subsp.

Collectors.— Allen (1), Verheijen (eggs only).
Material.— Egg: c/1 + 2 of *Gerygone sulphurea*, 27.ix.1955, Flores (RMNH no. 76581),

Measurements and weight:	RMNH no. 76581	21.0 × 14.0	0.107

The egg is immaculate olive brown.

Notes.— Unfortunately, the Fathers never managed to obtain skins of this species,

although it is not rare (cf. Ottow & Verheijen, 1969), so that in Flores it remains known from the single specimen collected by Allen.

Admirable as Parker's (1981) revision is, his division between the species *C. minutillus* and *C. russatus*, as well as the ranges ascribed to them, has something artificial. Ford (1981) has presented a strong case for *russatus* and *minutillus* in Australia being conspecific. Indeed, Parker himself referred to intermediate specimens from the Australian continent. Following the nomenclature used by Parker, the host species of *C. russatus jungei* on Flores is *Gerygone s. sulphurea*, and the host species of *C. minutillus albifrons* in Java is also *Gerygone s. sulphurea.* This supports the case for uniting the populations from Flores and Java to one species, which must bear the older name *C. minutillus*. Without topotypical material of *jungei*, and without specimens from Flores, I cannot give an opinion on the subspecific status of the Flores population, but it is unusual for Sulawesi (Celebes) and Flores to share one subspecies (and Java to have another). Therefore, I prefer to leave the subspecific identity of the population from Flores open until adequate material becomes available.

Re-uniting *C. minutillus* and *C. russatus* leaves the problem of the occurrence of two species (*C. minutillus cleis* and *C. russatus aheneus* in Parker's nomenclature) in Borneo (not Sulawesi as claimed by Blakers et al., 1982: 301). The status of *cleis* as a separate form could still do with supporting evidence. Thompson (1966: 397) brought all the specimens then known from Borneo together and concluded that such variation as they showed in plumage was sexual, although he was not clear about variations in wing-length. Nothing is known of breeding habits (host species, eggs), and voice of the birds from Borneo. If the co-occurrence of two forms as resident birds is confirmed, one of them must be a distinct species: *C. aheneus* or *C. cleis*. Payne (in del Hoyo et al., 1997: 563) came with a new concept: that both *cleis* and *aheneus* would be subspecies of *C. minutillus*, spatially separated as follows: *C. m. cleis*, N and E Borneo, and *C. m. aheneus*, SE Borneo and Phillipines. This view is not supported by the localities listed for the two forms by Parker, which seem haphazardly mixed, with both recorded from Mt. Kinabalu. This only increases my doubts about the validity of *cleis*.

Now that I am discussing Borneo, I should also like to mention the type specimen of *Cuculus neglectus* Schlegel (1864b: 35). This bird was made the type of a separate genus *Heterococcyx* by Salvadori (1874: 61), but subsequently relegated to the synonymy of *C. basalis*, a migrant from Australia. The type, however, is a fledgeling, not or barely able to fly. It cannot possibly be a migrant from Australia, and must belong to a resident species. I forwarded the specimen to Mr Parker, for his opinion. He concluded that it must be either *C. russatus aheneus* or *C. minutillus cleis* (in the nomenclature of Parker), but was not able to decide which of these two. The name *C. neglectus* antedates by many years both *aheneus* and *cleis.*

The type-specimen of *Cuculus neglectus* constituted the sole basis for the inclusion of mainland Borneo into the winter range of *C. basalis* (cf. Smythies, 1957: 638, etc.).

At my request, Mr Parker also borrowed from the Singapore Museum the specimen of *C. basalis* from the North Natuna Islands, first recorded by Chasen (1935: 128). He could confirm that it had been correctly identified. It constitutes the sole remaining record of *C. basalis* from the "Bornean Province".

Eudynamys scolopacea malayana Cabanis & Heine

E[*udynamis*] *malayana* Cabanis & Heine, 1862, Mus. Heineanum 4(1): 52 – Sunda-Inseln; Sumatra.

Collectors.— Allen, Weber, Everett ("a small series"), Elbert (1), Endih (1), de Jong (1), Verheijen (eggs), Schmutz.
Material.— ♂, ♀, xii.1888, Maumeri (Weber, RMNH cat. nos. 38, 39); ♂, 4.ii.1910, Endeh (Elbert, RMNH no. 2330); ♂, 15.ix.1969, Nunang (Schmutz, RMNH no. 85129); ♀, laying, 17.xi.1984, Rangga, 650 m (Schmutz, RMNH no. 97108). Iris blood-red.

Notes.— Verheijen (1964: 199) listed egg-finds in November and December (one each). Ottow & Verheijen (1969) recorded two eggs, both found in November, in nests of *Corvus macrorhynchus*, the only host-species that could be established on Flores.

Scythrops novaehollandiae Latham

Scythrops novae Hollandiae Latham, 1790, Index Orn. 1: 141 – nova Hollandia.

Collectors.— Semmelink, Allen (1), Martens (1), Weber, Verheijen (egg, in coll. Ottow).
Material.— (?) skull, 1862, Larantoeka (Semmelink, RMNH cat. no. a); (?), 19/24.xii.1888, Kotting (Weber, RMNH cat. no. 35).

Notes.— Van Oort (1907: 125) listed Semmelink's specimen as a complete skeleton, and in fact there is a complete skeleton, but only the skull actually belongs to *Scythrops*, the remainder of the skeleton is of a gallinaceous bird. Not improbably, this was done on purpose, at a time that complete skeletons went on display, and it was considered desirable to mount the spectacular skull on something that looked likely.

Ottow & Verheijen (1969) describe an egg found on 22.xi (year and locality not given) in a nest of *Corvus macrorhynchos*; besides this egg, the nest contained four eggs of the host and one egg of *Eudynamys scolopacea*. In addition they record that a *Corvus florensis* was seen feeding a fledgeling *Scythrops*. In an earlier paper, Verheijen (1961) referred to an observation made on 28.iii.1960 in Central Flores, of two full-grown young being fed by crows.

This species, previously regarded as monotypic, was divided into three subspecies by Mason & Forrester (1996); their study included RMNH cat. no. 35, but they were unable to assign it to a subspecies. Therefore I have, for the time being, left it with a binomial name.

Centropus bengalensis sarasinorum Stresemann

Centropus bengalensis sarasinorum Stresemann, 1912, Novit. Zool. 19: 338 – Lombok, Sumbawa, Flores... Celebes...

Collectors.— Allen, Colfs, Weber (2 and a skull, of which 1 and the skull returned to ZMA), Everett (3?), Rensch (1), Verheijen (2, MCZ), Verheijen/Schmutz.
Material.— ♀, 1880, Flores (Colfs, RMNH cat. no. 22); (?), xii.1888, Maumeri (Weber, RMNH cat. no. 24); (?) nestling, 29.vi.1969, Nunang, 650 m (Schmutz, RMNH no. 81110); ♀, 17.xii.1969, Nunang, 650 m (Schmutz, RMNH no. 85128); ♂, ♀, 26.ii.1976, Nunang (Schmutz, RMNH nos. 81058, 81052).

Eggs: 23 clutches, of which five are from Palué, of c/1 (6 ×), c/2 (9 ×), c/3 (6 ×), and c/4 (2 ×), collected in the months January (1), February (2), March (6), April (4), May (5), June (2), July (1), August (1), and one insufficiently dated. The eggs are white, with smooth but not very glossy shells.

Some measurements and weights:	RMNH no. 70600	32.7 × 25.4	0.8293
		33.9 × 25.9	0.8931
		34.2 × 25.5	0.9306
		35.1 × 26.0	0.922
	RMNH no. 70602	31.4 × 24.7	0.7581
		33.6 × 25.3	0.8485
		33.7 × 24.8	0.8037
		33.8 × 25.6	0.8397

The eggs are a little larger and heavier than those of *C. b. javanensis* from Java (cf. Hellebrekers & Hoogerwerf, 1967: 56), as would be expected from the larger size of *C. b. sarasinorum.*

Notes.— Four of the birds are in adult plumage, one (cat. no. 24) is in change. As I have pointed out before, the well-established notion that this species would have an "eclipse" plumage, or a "winter" plumage, is erroneous: once the adult plumage has been attained, it does not change (cf. Mees, 1971a).

In measurements, this subspecies is intermediate between the smaller *C. b. javanensis*, and the larger *C. b. medius*. White & Bruce (1986: 244-245) have, because of its intermediate character and geographical distribution, chosen not to recognise it. The discussions given by these authors, though lengthy, leave one in doubt as to whether they have personally examined material. In my opinion, the fairly large size-differences involved, and particularly the wide range of this intermediate subspecies, justify its recognition. White (l.c.) called even *medius* "a very poor form", and united it also with *javanensis*. This certainly went too far. Bruce (l.c.), in addition, proposed to suppress *C. b. philippinensis* as a size-race, ignoring the fact that this is not a size-race, but was based on plumage-characters.

Measurements:	wing	tail	tarsus	bill
♂	152	156	36	25
3 ♀	173, 174, 182	226, 204, 235	45.3, 44, 46	29, 27.8, 30
(?) 1	59	203	42	28

Tyto alba javanica (Gmelin)

Strix javanica Gmelin, 1788, Syst. Nat. (ed. 13), 1 (1): 295 – Java = Batavia, for the name is entirely based on a paper by von Wurmb (1781), who lived in that town.

Collectors.— Semmelink, Verheijen (4, MCZ), Verheijen/Schmutz.

Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 6); ♂, 24.v.1969, Nunang (Schmutz, RMNH no. 66139); ♀, 9.x.1969, Ruteng, 1150 m (Verheijen, RMNH no. 65300); ♀, 15.xi.1969, Ruteng (Verheijen, RMNH no. 65310).

Eggs: c/3, ca. 20.iii.1954, Mataloko (RMNH no. 70612); c/2, 26.vi.1958, Deno (RMNH no. 70613); c/1, 27.vi.1958, Deno (RMNH no. 70614); c/4, 15.vi.1961, Soa (RMNH no. 70615); c/1, 25.v., 1961, Soa (RMNH no. 70616); c/3, 15.xi.1961, Soa (RMNH no. 70617); c/3, 5.v.1963, Soa (RMNH no. 70618); c/1, 17.v.1963, Soa (RMNH no. 70619); c/1, 18.v.1963, Soa (RMNH no. 70621); c/2, 16.xi.1966, Soa (RMNH no. 70622); c/1, without data, Flores (RMNH no. 70620). The eggs are immaculate white.

Some measurements and weights:	RMNH no. 70612	42.3 × 34.2	2.3068
		42.6 × 32.4	1.7897
		42.7 × 33.5	2.0227
	RMNH no. 70613	41.1 × 32.4	1.9062
		41.3 × 32.8	1.9504

Notes.— Rensch (1931a: 522) placed the Barn Owls from Java, Lombok, Flores and Timor in the subspecies *javanica*. Without comment he accepted the subspecies *sumbaensis* from Sumba, *everetti* from Sawu, and *kuehni* from Kisar, all three of which had been described by Hartert.

Mayr (1944a: 150-151) studied material of two of these named populations (*everetti* and *kuehni*), comparing them with specimens from Timor and from Australia, and concluded, that all should be united with *T. a. delicatula* from Australia. In a previous publication, I followed this, without own investigation (cf. Mees, 1964a: 37).

Assuming that both the cited authors were right, the implication would be that *T. a. delicatula* does not differ from *T. a. javanica*, and that the colonisation of Australia by *Tyto alba* must be very recent indeed. Anyway, the subspecific status of the Lesser Sunda Island birds could not be evaluated properly, without a comparison with birds from Java as well as birds from Australia.

Unfortunately, the material available from Australia was very inadequate, but there is a clear suggestion that Australian birds are smaller than *javanica*, and this is supported by the measurements of a large series, provided by Schodde & Mason (1980: 82).

A further comparison showed that birds from Australia are paler on the upper parts than birds from Java, and that in this respect, the specimens from Flores agree with *javanica* and not with *delicatula*. Perhaps birds from Flores average smaller than birds from Java, but larger series are required to confirm this, and even in size they may be closer to topotypical *javanica* than to *delicatula*. In conclusion: *T. a. delicatula* is a valid subspecies, differing from *T. a. javanica* by average smaller size and by paler coloration. Birds from Flores are *javanica*, not *delicatula*. This leaves open the possibility that birds from Sawu, Timor and Kisar are *delicatula*, as claimed by Mayr (l. c.) and White & Bruce (1986: 146).

There is only one specimen from Sumba in the collection, of somewhat problematical antecedents (sex not given, mounted, no date, no collector, received from the Koloniaal Instituut in 1875). One wing is clipped, from the other wing the longest primaries are missing. The reason why I mention this imperfect specimen is that it does not have the very pale, almost whitish, tail presumed to be the main character of *T. a. sumbaensis*. The tail does not differ significantly from the tails of *T. a. javanica*, or *T. a. delicatula* for that matter. In view of the hazy antecedents of the specimen, the question arises, whether its given provenance from Sumba is reliable. Few specimens from Sumba are known (Stein collected only one, Sutter none), and I consider that the validity of *T. a. sumbaensis* requires confirmation.

Surprisingly, there seem to be no published records of the Barn Owl from Sumbawa. On 22.ix.1984 I observed one on the Tg. Pioen peninsula, northern Sumbawa. There is now a specimen record from Sumbawa Besar (Johnstone et al., 1996: 170).

Measurements:	wing	tail	tarsus	culmen from cere
Java (*T. a. javanica)*				
15 ♂	295-324	114-132	68-77	22-24
	(308.1)	(121.5)	(71.6)	(23.1)

17 ♀	286-321 (305.4)	110-126 (119.5)	65-74 (70.1)	22-24 (23.5)
Flores (*T. a. javanica*)				
♂	297	117	69	23
2 ♀	278-289	108-120	69-70	19-22.3
(?)	297	112	64	22.5
Australia (*T. a. delicatula*)				
2 ♂	272, 277	103, 103	68½, 72	20½, 22.3
♀	277	103	70½	21½

Tyto longimembris longimembris (Jerdon)

Strix longimembris Jerdon, 1839, Madras J. Lit. Sci. 10: 86 – Neilgherries.

Collector.— Verheijen (1, MCZ).
Material.— None.

Notes.— From Flores, the MCZ-specimen, collected near Wangkung in March 1956, remains the only one recorded (cf. Paynter, 1963), but Verheijen (in litt., 17.vi.1991) mentioned that about 1953 the late Father Jan Loeters showed him a place in an extensive plain grown with alang-alang (*Imperata cylindrica*), where he had flushed a "Barn Owl" from a nest with eggs on the ground. Father Verheijen found it strange that a Barn Owl would nest on the ground, but forgot it until *Tyto longimembris* was discovered.

Stresemann (1939: 316, 325, 343 fig. 11) gave *T. longimembris* as an example of a species that has colonized Australia from mainland Asia through the "Graslandstrasse" formed by southern China, Taiwan, the Philippines, Sulawesi (Celebes) and Flores. It is rather interesting that he anticipated its occurrence on Flores, from where at that time it was not yet known. Mayr (1944b: 119) accepted this reconstruction as: "clearly indicated". Amadon & Jewett (1946) considered it "probable" that Stresemann was right, but added that: "it occurs in southern Indo-China, so there seems still a possibility that it will be found somewhere in Malaya". In the revision of the subspecies presented by these authors, the Australian *walleri* is stated to be separable "at a glance" from continental *longimembris*, whereas *amauronota* of the Philippines is considered intermediate in certain respects. Thus, the geographical variation described by these authors would seem to support, or at least not to contradict, Stresemann. However, Amadon (1959), following the examination of much additional material in the British Museum, again reviewed the subspecies of *T. longimembris*, accepting as valid *chinensis* (southern China), *pithecops* (Taiwan), *amauronota* (Philippines), *papuensis* (New Guinea). The main difference from his earlier revision was in his evaluation of *walleri*, which he accepted, but with the comment: "The race *walleri* is exceedingly similar to *longimembris* of India: in fact, if their ranges were continuous there could be no thought of separating them... Perhaps the species has spread comparatively recently from India to Australia and may still be recorded from some of the intervening areas, for example Sumatra". Although Amadon's hesitation is understandable, the logical next step was to synonymize *walleri* with *longimembris* (cf. Mees, 1964a). The morphological evidence, as far as now available, no longer supports Stresemann's reconstruction of its distributional history. Several other grassland birds have at present an interrupted range: continental Asia and Java,

but not Malaya and Sumatra (e. g. *Timalia pileata*, *Prinia polychroa*, *Prinia inornata blythi* [8], *Dicrurus macrocercus*), suggesting a grassland corridor in the not too remote past, probably during the last period of low sea level (Late Pleistocene).

Otus magicus albiventris (Sharpe)

Scops albiventris Sharpe, 1875, Cat. Birds Brit. Mus. 2: 78, pl. VIII fig. 1 – Flores.

Collectors.— Semmelink, Allen, Everett, Verheijen, Schmutz.
Material.— (?) juv., ♀, 1862, Larantoeka (Semmelink, RMNH cat. nos. 1, 2); ♀, 23.x.1968, Nunang, 650 m (Schmutz, RMNH no. 65313); ♂ with large gonads, 3.x.1975, Cereng, 550 m (Schmutz, RMNH no. 85159), (?), xi.1982, Nunang (Schmutz, RMNH no. 81023). Stomach contents of no. 85159: Cicadas.
Eggs (fig. 14a): c/1, without data, Flores, received 1973 (Verheijen, RMNH no. 70604); c/1, without data, received 1973 (Verheijen, RMNH no. 70605); c/2, 25.ix.1955, Bénténg Djawa (RMNH no. 70606); c/2, 1.vi.1961, Soa (RMNH no. 70607); c/2, 4.vi.1961, Soa (RMNH no. 70608).

Measurements and weights:	RMNH no. 70604	32.9 × 27.1	0.8449
	RMNH no. 70605	32.6 × 27.9	0.9621
	RMNH no. 70606	31.7 × 27.8	0.9638
		33.5 × 29.0	1.1071
	RMNH no. 70607	33.2 × 28.1	very large blowholes, no weights taken
		33.2 × 28.2	
	RMNH no. 70608	32.6 × 29.5	0.875
		32.8 × 29.2	0.959

Notes.— Without much confidence I follow current practice of listing this bird under the above trinomial. The state of flux in which the classification at the specific and subspecific levels of the genus *Otus* is at present, makes any trinomial of no more than temporary validity.

Measurements:	wing	tail	tarsus	exposed culmen
♂	156	73	27	21
♀	164	73½	28.4	21
(?)	164	69	27½	19

Otus alfredi (Hartert)

Pisorhina alfredi Hartert, 1897, Novit. Zool. 4: 527 – Mount Repok and other hills at about 3500 feet in S. Flores.

Collector.— Everett (3).
Material.— None.

[8] Watson et al. (1986a: 142) united *P. inornata* with the African *P. subflava*. The illogical sequence of subspecies: first the Asiatic one from west to east, followed by the African ones from north-west to south, suggest that this was a last-minute decision. The interesting, isolated occurrence on Java (*blythi*) was overlooked.

Notes.— Within a year after its description, Finsch (1898b: 177, 183) concluded that *Pisorhina alfredi* is not a valid species, but represents the red morph of *Otus manadensis* on Flores, hence of *O. manadensis albiventris* (Finsch did not recognize *albiventris*, but that does not affect his conclusion). Subsequent workers have ignored Finsch's views, and Stresemann (1925: 193) gave as his opinion that *Otus alfredi:* "gehört sehr wahrscheinlich zum Formenkreis *O. spilocephalus*". It was kept in the vicinity of *O. spilocephalus* by Rensch (1931a: 521), Peters (1940: 89) and Eck & Busse (1977: 72). Certainly, nobody since Finsch appears to have doubted its status as a distinctive species.

Some years ago it struck me that, whereas the plumage differences between *O. m. albiventris* and *O. alfredi*, as described and illustrated by Hartert (1898a: pl. 1) and Marshall & King (in Amadon & Bull, 1988: pl.), are considerable, the morphological differences are very slight. Hartert stated of *alfredi*: "Toes and one-fifth of tarsus bare, the remainder of the tarsus thickly feathered", whereas *albiventris* would have "the tarsi... feathered down to the toes... the beak larger". The illustrations, however, show *O. alfredi* with a tarsus-feathering similar to that of *albiventris*, and with the measurements one can do little, as Hartert omitted to give those of *albiventris*, but comparing the measurements provided for *alfredi* by Hartert, with those of *albiventris* taken from my material, I see little difference.

The above considerations led me to write to the American Museum of Natural History, with the request to re-examine the type material of *O. alfredi* with the thought in mind that it might represent a red morph of *albiventris*. In March 1991, Dr Marshall visited New York to make the comparison, and concluded that the suggestion first made by Finsch is correct.

As Dr Marshall was the acknowledged authority on the genus *Otus* I had no reason to doubt his conclusion, but recently the discussion about the status of *O alfredi* has been re-opened. The case is put strongly in del Hoye et al. (1999: 154):"morphological study clearly demonstrates its distinctness and validity as a species". Unfortunately, comparative documentation of these clear morphological characters is withheld. Admittedly there is mention of recent records, but too succinct to be of much use. Where has that specimen collected in 1995 gone? The references given look unpromising; I checked the only one available to me (Rasmussen, 1998) and found it unhelpful: "*O. alfredi* ….. is not the red morph of *albiventris*, but belongs to the *O. spilocephalus* group (Hartert, 1925, Widodo *et al.* unpublished)". I have already given my opinion on references to unpublished work, and those to Hartert and Stresemann have no much value in this connection, as the idea that *alfredi* might be the red morph of *albiventris* may not have been considered by these authors.

On the other hand, evidence indicates that *O. alfredi* is a mountain bird, with an altitudinal range different from that of *albiventris*. I am now quite prepared to accept the validity of *O. alfredi.* As regards its relationships, as quoted by Rasmussen, it deserves mention that the Javanese mountain form *angelinae* has now been chopped off from *spilocephalus*, so that the latter is no longer its nearest neighbour and its most obvious relative.

Addendum.— The paper I had been hoping for appeared already in 1999 (Widodo et al., 1999), but I became aware of this, and received a copy, only in 2003. It is comprehensive and completely convincing, and answers all my questions. The authors ascribe

the small size of the recently-collected male to its being a juvenile, but a part of the difference might be sexual, the Everett specimens being unreliably sexed and perhaps females.

Otus silvicola (Wallace)

Scops silvicola Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 487 – Flores.

Collectors.— Allen (1), Everett (3), Verheijen (3, MCZ), Verheijen/Schmutz.
Material.— ♀ juv., 22.xii.1968, Wangkung, Rahong, 900 m (Verheijen, RMNH no. 65311); ♂ juv., 10.ii.1969, Nunang, 650 m (Schmutz, RMNH no. 65312); ♀ ad., 8.ix.1971, Nunang, 650 m (Schmutz, RMNH no. 84864); ♂ ad., 1.xii.1975, Nunang (Schmutz, RMNH no. 81038); ♀ juv., 1.xii.1975, Nunang (Schmutz, RMNH no. 81039). Iris sulphur yellow.
Eggs (fig. 14b): c/2, 12.ix.1949, Rekas (RMNH no. 70610); c/3, 10.x.1949, Rekas (RMNH no. 70611).

Measurements and weights:	RMNH no. 70610	36.8 × 32.0	1.685
		38.3 × 32.4	1.629
	RMNH no. 70611	40.5 × 32.3	1.828
		41.6 × 32.1	1.954
		45.1 × 32.4	1.856

One of the eggs of clutch 70611 is indeed conspicuously longer than the others.

Notes.— The material is of particular value as hitherto few specimens existed in collections: the type collected by Allen, three males from Flores, collected by Everett, two males from Sumbawa, collected by Rensch, and three birds from Flores (fig. 8), collected by Verheijen (MCZ, cf. Paynter, 1963).

Unfortunately, only two of the above specimens are adult, one of each sex; the others are fledgelings, with the remiges and rectrices basally still in sheath.

Wallace did not mention the sex of the type, for which he recorded a wing-length of 8½ inches, tail 4½ inches. The two males from Sumbawa had wing 215, 221, tail 101, 106 mm (Rensch, 1931a: 521). Hartert (1897b: 527) gave for males a wing-length of 215-223 mm, tail 108 mm. According to him, the type was a young bird (sex doubtful) in down, with only a few feathers, and: "the dimensions of the type are very much larger", which is not borne out by the figures of the type provided by Wallace. Warren (1966: 271) claimed, without explanation, that the type was an "Immature

Fig. 8. *Otus silvicola,* Flores, 12.x.1975 (photo E. Schmutz).

female". The various contradictory statements about the type evidently required looking into. At my request, Mr Cowles has carefully examined the type specimen, about which he informed me as follows (in litt., 22.xi.1988): "We do not have any other *silvicola* for comparison, but I have examined other *Otus* specimens and the young downy ones. These are really very downy and fluffy, even when fairly well grown. The *silvicola* type is rather different in that it is fully feathered and shows an intermediate stage, being a mixture of some adult plumage with dark streaked feathers on the back, two or three on the upper breast and 4 or 5 on the abdomen. The head, neck, upper back and most of the breast has finely barred plumage similar to the juvenile plumage and is rather loose in construction, like the young birds. To my mind this specimen appears to be just changing into first adult plumage and could be called immature or subadult, certainly not downy young as Hartert suggested .... The original Wallace label is marked ♀ and that is no doubt why Miss Warren copied it into her type-specimens publication". Measurements taken from the type by Mr Cowles are, wing 223 mm, tail 109 mm, quite close to the measurements provided by Wallace in the original description. With the evidence now available (that the specimen is fully grown), the sex given on the label may be questioned, it is more likely to be a male. About the three MCZ specimens, I was informed by Dr Paynter (in litt., 20.x.1988): ♀, 11.ii.1959, Mano (MCZ no. 261890), wing 240 mm, tail 120 mm; (?) juv., no date, Mano (MCZ no. 261891); ♀?, 27.vii.1958, Mano (MCZ no. 261892), very badly worn (captive bird?). The measurements of the two adult birds in the RMNH collection are given below. The juvenile birds have wing-lengths of ♂ 204, ♀ 176 and 212 mm.

The surprising and interesting point is the large size of the female. In plumage, I can see no obvious differences between the sexes. There has been much speculation on the affinities of *Otus silvicola*. Paynter (1963) thought that: "This endemic owl is probably a giant geographical representative of *O. bakkamoena*". Hekstra (in Burton, 1973: 113) claimed it to be closely related to *Otus brookii*, a very little-known mountain-bird of Borneo, Sumatra and Java, but he gave no explanation for this view. Perhaps it was merely based on *O. brookii* also being, for a member of the genus *Otus*, rather large; its few published measurements, however, show it to be much smaller than *O. silvicola* (wing 5 ♂ average 162.4 mm, 1 ♀ 183 mm, according to Marshall, 1978: 57). Eck & Busse (1977) have forced both *silvicola* and *lempiji* (Java, Bali) as subspecies in an enormously expanded species *Otus asio.* Few authors will follow them in this extreme lumping, but the notion that *silvicola* and *lempiji* are closely related persists (cf. White & Bruce, 1986: 253). Therefore, I want to stress not only the huge difference in size: *lempiji*, wing 20 ♂ 135-149 mm, 22 ♀ 136-151 mm (cf. Mees, 1986: 52), but also the sexual difference in size, which is marginal in *lempiji* (ca. 1½%), as opposed to ca. 12% in *silvicola.* Compare also the difference in size of the eggs: average 33.5 × 28.8 mm, weight 0.97 (0.9-1.09) g in *lempiji* (cf. Hellebrekers & Hoogerwerf, 1967: 58).

I should like to add that *Otus asio* is also a small species, with only a slight sexual difference in size (cf. Ridgway, 1914, 689).

It is interesting to note that there is now another tendency, in the opposite direction, towards the recognition of more species. Roberts & King (1986) and Marshall & King (in Amadon & Bull, 1988) have separated *O. lempiji* from *O. bakkamoena*, with which it has been held to be conspecific for a long time, on the basis of differences in voice. I find their arguments convincing. This adds to the opinion, that the general

state of knowledge of the genus *Otus* does not yet allow theories on interspecific relations to be more than speculation.

Measurements:	wing	tail	tarsus	entire culmen
♂	214	103	32.6	30
♀	252	120	35	35

Ninox scutulata florensis (Wallace)

Athene florensis Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 488 – Flores.
Ninox macroptera Blasius, 1888, Braunschw. Anz., 11 Jan., Nr. 9: 86 – Manganitu, Gross-Sanghir (non vidi).
Ninox sanghirensis Blasius, 1888, Ornis 4: 546 – lapsus or alternative name for *N. macroptera*.
Ninox scutulata ussuriensis Buturlin, 1910, Mess. Orn. 1: 187 – Ussuri and Korea (non vidi).

Collectors.— Allen (1), Schmutz.
Material.— (?), 1862, Flores (Allen, BM no. 73.5.12.1650, holotype of the subspecies); ♀, 14.i.1983, Nunang, 650 m (Schmutz, RMNH no. 81164); ♂, 19.iii.1983, Paku, 350 m (Schmutz, RMNH no. 97115).

Notes.— These are large birds (see measurements). Birds of this size surpass in measurements birds from Japan, and must originate from Ussuria. Therefore, *florensis* replaces *ussuriensis* as the valid name for the large birds from eastern Siberia. Deignan (1951) has suggested that the name *florensis* could be applicable to "Chinese birds", and this is probably correct for birds from Manchuria. Unfortunately, Deignan does not provide a single measurement, neither does he discuss *Ninox macroptera* Blasius, of which the type-locality was restricted to Mindoro by Peters (1940: 141), although, as far as I can see, all the type material was from the Sanghir Islands, and Mindoro is not even mentioned by Blasius (1888: 545-555). Previously, Meise (1941: 355-356) recorded two large specimens (2 ♀, wings 239, 241 mm), from Noesa Penida near Bali, for which he used the name *macroptera*, correctlty placing *ussuriensis* in its synonymy, but he seems to have overlooked *florensis*, which is an older name than *macroptera.*

The name *N. s. florensis* has not been generally used in recent literature, but duPont (1971a), following Deignan's suggestion, quoted above, that Chinese birds should be called by this name, referred three winter birds (October and December) from Luzon to it, with the remark: "Not previously recorded from the Philippines". As no measurements are provided, indeed, no description of any kind is given, it is impossible to judge whether the identification was correct. A little later, duPont (1971b: 176) listed the Philippine subspecies, accompanied by very succinct diagnoses; the first one, *randi,* even with measurements (wing 240, tail 135, bill 28, tarsus 33), followed by *palawanensis* ("differs from *randi* by being smaller", wing 195, tail 109; no characters are given to distinguish this subspecies from *borneensis*), by *japonica* ("differs from *randi* by having the upperparts browner and the red-brown in the wings and tail much reduced; underparts not as heavily streaked"; no measurements are given), and by *florensis* ("differs from *japonica* by having the upperparts much paler and the underparts not so heavily streaked"; no measurements given). This would suggest that both *japonica* and *florensis* have the measurements of *randi*, but *japonica* certainly never reaches a wing-length of 240 mm, which also places the measurements of duPont's *florensis*, hence the subspecific identity of these birds in doubt. Parkes (1971: 14-15) was not convinced of the applicability of the name

florensis in the sense in which it was used by Deignan and duPont, but nevertheless also used it: "I believe it to be highly likely that many Philippine specimens that have been identified in the past as *japonica* will prove, upon reexamination, to be referable to the pale, grayish race called *florensis* by Deignan". As Parkes also failed to give measurements, the identity of the specimens he was discussing remains obscure.

On this basis, Dickinson et al. (1991: 229) included *N. s. florensis* in the avifauna of the Philippines, with added a note "The type of *florensis*...has been compared with northern birds likely to be on their breeding grounds, and is a good match for BM 1934.1.1.1549 taken at Wei Hai Wei, NE Shantung, China on 12 May 1911; *florensis*...is therefore thought to have precedence over *ussuriensis*...as the correct name for the northern Chinese population". The conclusion about the synonymy is correct, but a bird collected on 12 May at Wei Hai Wei would almost certainly have been a migrant from further north, and provides no proof that the subspecies *florensis* breeds in China proper (cf. LeFevre, 1962: 74). The region of Chefoo/Wei Hai Wei is a well-known staging post for migrants across the Yellow Sea. As still no measurements are given, it is not clear whether this comparison has any relevance to the identification of the Philippine specimens. In spite of this unsatisfactory evidence, *N. s. florensis* ought to occur in the Philippines as a passage migrant and, probably, a winter visitor. One would expect the winter range to extend westward to at least eastern Java and Borneo, although there are no records, but the occurrence on islands off the west coast of Peninsular Thailand (Deignan, 1963: 63) is unlikely and is presumably based on misidentification.

In reply to my request for the loan of the specimen of *Ninox scutulata*, which, naturally enough, I believed that Pfeffer (1958: 71) had obtained in Flores, I received one collected by him in Borneo (♀, 25.iii.1957, Long-Kemuat, upper Bahau, MHNP no. 1960.762). This is the bird recorded by Pfeffer (1960: 201) under the name of *N. s. borneensis*, the resident subspecies. The measurements I took from this specimen (wing 212, tail 109, tarsus 26, culmen from skull 25.8 mm) are, however, too large for *borneensis* (in which the wing-length does not exceed 200 mm), and show it to be an individual of the migrant visitor *N. s. japonica.*

The wing-length of a carcass picked up on Ashmore Reef was recorded as only 226 mm (Schodde & van Tets, 1981), but is still within the range of variation of birds from Ussuria (cf. Vaurie, 1965: 618, s. n. *ussuriensis*), hence of *florensis*. The ♂ from Boemboelan, northern peninsula of Sulawesi (Celebes), 28.x.1939, reported by Ripley (1941a: 354, s. n. *N. s. scutulata*), had a wing-length of 238 mm and therefore is definitely *florensis.* That the subspecies *N. s. japonica* also occurs in northern Celebes, was pointed out by Van Marle (1940b: 123, s. n. *N. s. scutulata*), but only *N. s. florensis* seems to reach the Lesser Sunda Islands.

Measurements:	wing	tail	tarsus	culmen from skull	culmen from cere
♂	235	125	ca. 30	25	14
♀	235	113	29.8	25	14.7
(?)	242	127	ca. 31.5	25	14.5

Caprimulgus macrurus schlegelii Meyer

[*Caprimulgus*] *Schlegelii* Meyer, 1874, Sitzb. Akad. Wiss. Wien 69: 210 – no locality = Port Essington.

Material.— ♂, 15.ix.1975, Nisar, 250 m (Schmutz, RMNH no. 75297).
Egg: c/1, 11.x.1956, Djinggor (Verheijen, RMNH no. 70624). This and the other eggs of the species are creamy to pale pinkish buff, clouded with poorly-defined light grey and brownish markings.

Notes.— The above material was recorded in a paper by Mees (1977a: 31, 36, 47), to which I refer for further particulars. The subspecies *schlegelii* is only poorly differentiated from the nominate race, with type-locality Java.

Dickinson et al. (1991: 234) suggested that eggs of *C. manillensis* (previously known as *C. macrurus manillensis*) from Cape Engano, Luzon, illustrated by Mees (1985: fig. 7 nos. 1 and 2), had been misidentified and were actually referable to *C. affinis griseatus*. I asked Mr Walters, who selected these eggs for illustration, about this possibility, and his reply is that he sees no reason to question their identification (as *C. manillensis*).

Caprimulgus affinis affinis Horsfield

Caprimulgus affinis Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 142 – Java.
Caprimulgus affinis undulatus Mayr, 1944, Bull. Amer. Mus. Nat. Hist. 83: 152 – Flores.

Collectors.— Weber, Everett, Rensch (5), Verheijen/Schmutz.
Material.— (?), skeleton, 28.xi.1888, Reo (Weber, RMNH cat. b, cf. van Oort, 1907: 156); ♀, x.1896, Desoe, S. Flores, 3300 ft. (Everett, BM no. 98.5.4.36); ♂, 25.v.1972, Nisar, 50 m (Schmutz, RMNH no. 85272); ♀, 29.vi.1974, Orong, 550 m (Schmutz, RMNH no. 85271); ♂, 17.ix.1975, Joneng (Schmutz, RMNH no. 85270).
Eggs: c/2, 12.viii.1955, Mano (RMNH no. 70623); c/1, 16.x.1956, Djinggor (RMNH no. 70625); c/1, 23.ix.1957, Léwé (RMNH no. 70626); c/1, 2.xi.1957, Léwé (RMNH no. 70627); c/3, 4.xi.1957, Mano (RMNH no. 70628); c/2, 10.xi.1957, Léwé (RMNH no. 70629); c/1, 19.xi.1957, Mano (RMNH no. 70630); c/2, 21.ix.1959, Léwé (RMNH no. 70631); c/2, 22.ix.1959, Léwé (RMNH no. 70632); c/1, 23.ix.1959, Léwé (RMNH no. 70633). The eggs resemble those of *C. macrurus* in a general way, but average a trifle smaller; the ground colour is a little colder, tending towards olive-grey rather than buffy; the markings are darker and usually more sharply defined.

Measurements and weights:	RMNH no. 70623	29.6 × 20.2	0.4308	
		29.8 × 19.5	0.4235	
	RMNH no. 70625	28.2 × 20.3	0.4668	
	RMNH no. 70626	28.9 × 20.6	0.4420	
	RMNH no. 70627	28.1 × 21.5	0.4782	
	RMNH no. 70628	26.3 × 20.2	0.3980	
		26.5 × 19.8	0.3770	large hole
		26.9 × 20.3	0.4460	
	RMNH no. 70629	27.0 × 19.7	0.4217	
		27.8 × 20.3	0.4427	
	RMNH no. 70630	27.7 × 20.2	0.4216	
	RMNH no. 70631	29.5 × 20.8	0.4869	
		29.7 × 21.6	0.5076	
	RMNH no. 70632	26.5 × 19.9	0.3509	
		28.4 × 20.7	0.4461	
	RMNH no. 70633	29.7 × 20.5	0.3642	

Notes.— The material on which Mayr (1944a: 152) based the subspecies *undulatus* was not rich: 2 ♂ and 3 ♀ from Sumbawa and Flores. As type, he chose the nesting ♀ from Flores, listed by Hartert (1898a: 42). The subspecies *undulatus* was described as

being: "Similar to *affinis* in the coloration of the upper parts, but tending to be lighter, more evenly colored, and more finely vermiculated; breast and belly are more closely barred and the barring extends farther down along the flanks". My examination of a larger material from Java and the Lesser Sunda Islands (RMNH, BM), failed to support any of the characters claimed by Mayr, who evidently underestimated the amount of normal individual variation. Differences in method of preparation also affect some characters, such as the visible extent of barring of the underparts. Hence it is with confidence that I unite *undulatus* with nominate *affinis*.

Mayr (l. c.) recognized two additional subspecies from the Lesser Sunda Islands: *C. a. kasuidari* Hachisuka from Sawu (type locality) and Sumba, and *C. a. timorensis*, newly described from Timor. Neither subspecies is satisfactory: the three specimens from Sawu examined by me (viii.1896, leg. Everett, BM nos. 97.11.1.76, 125, 126) fit into the nominate race; from Timor, only a single old specimen could be examined (♂, 1861, East Timor, leg. Wallace, BM no. 88.10.3.135), so that I prefer not to give a definite opinion on the validity of *timorensis*, although I must admit to having little confidence in it. Two specimens from Kisar, to the East of Timor (8 and 25.xii.1897, leg. Schädler, RMNH cat. nos. 17 and 18) are characterized by rather pale, less brownish-tinged, underparts (compared with the average *affinis*). A bird from Alor (v.1897, ex Rolle, RMNH cat. no. 16), on the other hand, is over average brown, with even the wing specula tinged very pale brown. Junge (1954: 318) was unable to name the collector of Rolle's small Alor collection. Although there is no collector's name on the labels, the skins show the unmistakable, rather thin shape characteristic of H. Kühn's work. In the Lombok series, one individual (♂, vi.1896, leg. Everett, BM no. 97.11.1.44) is very pale, almost like *griseatus*! The Lombok series illustrates well the amount of individual variation existing even on a smallish island: there is not only variation in the depth of the cinnamon colour, but also in the amount of black on the pileum. All this confirms me in the opinion that in birds with this kind of complicated colour pattern, it is just not possible to base subspecies on samples of one or two specimens, as has been done in the past.

This brings me to *C. a. propinquus*, a subspecies described on the basis of a single male from Parigi, Sulawesi (Celebes). Compared with four specimens of the same sex of nominate *affinis* (Java 3, Borneo 1), it was stated to differ by being: "much lighter, both above and below, and the buffy spots on the chest and wing-coverts are more numerous and pronounced and much lighter; the vermiculations on the back finer and the tail-bars above narrower" (Riley, 1918). I doubt the validity of *propinquus*, and only the fact that Mayr examined two additional specimens from the same area (Tawaya), which showed the same characters as the type, has made me retain it for the moment.

Three of the nine birds from Borneo (♂ 171, ♀ 169, 170) surpass in wing-length specimens from all other localities. The large size of Borneo birds was first noted by Mayr (1944a: 152) according to whom: "The large size of two of the three specimens is probably due to altitudinal variation. They were collected at Tanggaroeng, Mahakkam River (H. Raven)". There is a misconception here, for Tanggaroeng (recte: Tenggarong) is in the delta region of the Mahakkam, only some 25 km west of Samarinda, and hardly above sea-level. The bulge inland to the headwaters of the Mahakam, shown in Mayr's (1944a: fig. 2) distribution map, has to be corrected. For notes on Raven's itinerary, see Deignan (1960).

Specimens from Sumatra average smaller than specimens from Borneo, but larger than birds from Java. The series from Java and Sumatra are long enough to make it

likely that the difference, slight as it is, is real and not due to inadequate sampling.

The opinion that *C. monticolus* of the Asiatic mainland is conspecific with *C. affinis*, was apparently first expressed by Stresemann in a letter to Rothschild (1927), who did not agree. Later by Rensch (1931a: 537) and Mayr (1944a: 153). The latter supported this with the statement that: "The two 'species' *affinis* and *monticola* [sic] are perfectly connected by the subspecies *griseatus* (Luzon) and *stictomus* (Taiwan)". It is my feeling that Mayr has put the case too strongly: Philippine *griseatus* and *mindanensis* (the validity of *mindanensis* requires confirmation; it is at best only slightly differentiated from *griseatus*) differ conspicuously from typical *affinis* by being much greyer, less brown: the upper parts, including the head are mottly grey; the underparts are much paler brown; in measurements, however, they agree with *affinis* (see table). The Taiwanese subspecies, *stictomus*, clearly belongs to the *monticolus* group; it has similar tail-markings; admittedly it is greyer than the very richly-coloured mainland birds, and seems to average slightly smaller, but I doubt that these characters prove a close relationship with *griseatus*. The size-gap between *stictomus* and *griseatus* is considerable. I much doubt Mayr's (1944a: fig. 2) reconstruction of its history of expansion, from the Asiatic mainland, through Taiwan and the Philippines to Celebes, Java and the Lesser Sunda Islands; certainly the morphological evidence provided by the Taiwanese and the Philippine forms, does not strongly support it. For one thing, it would have required, in the course of this colonisation, first to have changed from brown to grey, and subsequently from grey to brown again.

Peters (1940: 212-213) and Etchécopar & Hüe (1978: 498) preferred to keep the two as separate species. The reason why, in spite of the unconvincing morphological evidence, I have nevertheless reluctantly accepted that *C. monticolus* and *C. affinis* are conspecific, is that their calls are said to be identical (cf. Sibley & Monroe, 1990: 191). [9])

Measurements:		n	wing	tail
Sumatra (*C. a. affinis*)	♂	11	157-168	91-97
			(163.5)	(94.1)
	♀	10	158-166	86-94
			(161.0)	(90.8)
Borneo	♂	3	164-171	91, 94, 93
			(166.3)	
	♀	6	160-170	84-95
			(165.0)	(91.5)
Java	♂	21	154-167	86-98
			(160.9)	(92.7)
	♀	14	155-163	86-95
			(159.0)	(91.2)
Bali	♂	5	156-166	91-98
			(161.2)	(94.5)
	♀	3	156-161	93-96
			(159.0)	94.5

[9]) As there is now general agreement that names ending in *–cola*, and perforce also *–colus*, are substantiva, not adjectiva, *monticolus* and *monticola* are different words. Therefore, Peters (1940: 201) did not create secondary homonymy whnen he transferred *Stenopsis cayensis monticola* to the genus *Caprimulgus*, and there was no need for him to rename that form. *Caprimulgus cayensis apertus* Peters, 1940, nomen novum, is a synonym of *Caprimulgus cayensis monticola* (Chapman, 1915).

Lombok	♂	6	158-160	90-96½
			(159.3)	(93.8)
	♀	5	152-165	88-94
			(158.2)	(91.0)
Sumbawa	♂	1	163	92
Flores	♂	2	162, 168	95, 96
	♀	2	160, 165	92, 96
Alor	♀	1	156	87
Sawu	♂	1	164	101
	♀	2	163, 165	90, 94
Timor	♂	1	157	91
Kisar	♀	2	152, 156	89, 85
Northern Philippines: Luzon, Mindoro, Catanderanes (*C. a. griseatus*)				
	♂	5	160-168	87-94
			(163.6)	(91.2)
	♀	1	167	91
Mindanao (*C. a. mindanensis*)				
	♂	1	166	89
	♀	1	157	81
Taiwan (*C. a. stictomus*)	♂	11	184-197	105-121
			(191.5)	(113.6)
	♀	9	175-192	99-119
			(184.1)	(107.8)
Macao (*C. a. amoyensis*)	♀	1	199	123
Southern China (*C. a. amoyensis*)				
	♂	2	191, 198	118, 116

Collocalia fuciphaga fuciphaga (Thunberg)

Hirundo Fuciphaga Thunberg, 1812, Kongl. Vet.-Akad. nya Handl. 33: 153 – Java (reference not verified).
Collocalia francica dammermani Rensch, 1931 (September), Mitt. Zool. Mus. Berlin 17: 541 – Mboera, West-Flores.
Collocalia francica dammermani Rensch, 1931 (December), Treubia 13: 396 – Mboera, West-Flores.

Collectors.— de Jong (1), Verheijen (1, MCZ), Verheijen.
Material.— ♂, 9.iii.1971, Maro-Kama, Borong (Verheijen, RMNH no. 85325). Primary moult.
Eggs: c/2 with nest, 24.xi.1981, south coast Todo (RMNH no. 80906). The eggs are long-oval, dull white.

Measurements and weights:	RMNH no. 80906	19.5 × 13.4	0.0988
		20.6 × 13.2	0.0990

The nest is of the best edible quality, with little or no extraneous matter, thus supporting the identification.

Notes.— In his description of *C. f. dammermani*, Rensch claims: "Von diesem Rassenkreise war bisher noch kein Vertreter von den Kleinen Sunda-Inseln bekannt"; yet, a few pages earlier in the same publication, he (Rensch, 1931b: 377) records *C. f. micans* from Sumba! The type-locality of *micans* is Sawu, another of the Lesser Sunda Islands (cf. Stresemann, 1914b: 6). Both *dammermani* and *micans* are regarded as synonyms of nominate *C. f. fuciphaga* by White & Bruce (1986: 266), and although their opinion is poorly documented, I follow them for the moment.

About few genera of birds there has been so much confusion as about *Collocalia*, and even the most recent classification can by no means be called definitive. Rensch (1931a:

539) refers specimens from Lombok, with a query, to *micans*, but according to White & Bruce (1986: 266) this is an error. Rensch (1930: 49-51; 1931a: 540) has twice described his visit to the cave where these specimens were found. White & Bruce (1986: 265) are confused about the specimens discussed by Rensch, and speculate that he had examined material collected by Everett, but it is quite clear that Rensch only discussed the three specimens from his own collection. As the nests were not "edible", the birds can not be *C. fuciphaga*, which is according to current opinion the only producer of edible nests in this region. Obviously, there must be on Lombok a hitherto unidentified species of *Collocalia*, which is not *C. fuciphaga*; most likely it is *C. salangana*, a species common in Java (I follow Salomonsen, 1983: 86, in not regarding *C. salangana* as conspecific with *C. vanikorensis*).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	114	48	9	7.7	4

Collocalia esculenta sumbawae Stresemann

Collocalia esculenta sumbawae Stresemann, 1925, Mitt. Zool. Mus. Berlin 12: 189 – Tambora 3000', Sumbawa.

Collectors.— Rensch (4), Verheijen (5, MCZ), Verheijen/Schmutz.

Material.— ♂, 9.xii.1968, Ruteng (Verheijen, RMNH no. 59905); (?) nestling, 15.vi.1969, Nunang, 600 m (Schmutz, RMNH no. 81458). Iris light brown, bill black, tarsus blackish flesh colour, toes and nails blackish.

Eggs: 15 clutches of c/1 (6 ×) and c/2 (9 ×), collected in the months March (2), April (2), May (2), June (2), July (1), August (2), September (1), November (1), and three insufficiently dated; also a sample of three eggs without data, and a sample of six eggs without data, from Liang Bitu, Dano, Méngé, Madjung, Léwé, Ntéwéng (Mano), Puntu, and several clutches without locality (RMNH nos. 70657-70662, 70662a). The eggs are long-oval, white without markings.

Some measurements and weights:	RMNH no. 70668	16.5 × 11.1	0.0545
		17.2 × 10.9	0.0516
	RMNH no. 70669	16.5 × 10.5	0.0514
		16.8 × 10.8	0.0522

Notes.— RMNH no. 59905 has noted on its label, that it was captured on a nest with eggs. This is interesting, as the bird is in the last stage of primary-moult, the 1st (outer) primary on both sides being short, basally in sheath. December is not mentioned as a breeding-month by Verheijen (1964).

Stresemann (1925) diagnosed the subspecies *sumbawae* in the following words: "durch den lebhaft violettblauen statt grünen Glanz der Oberseite und der Flügel stark abweichend von *C. e. neglecta* und *linchi;* Innenfahne der Steuerfedern an der Basis weiss, nicht dunkel wie bei *linchi*. Flügel 94 mm". Rensch (1931a: 538) commented: "Ich kann diese unlängst beschriebene Rasse durchaus bestätigen: der blaue und violette Schiller der Oberseite und der Schwingen weicht stark von dem grünen Schiller der östlich und westlich anschliessenden Rassen ab und ist nur bei jungen Exemplaren weniger deutlich (bläulichgrün)". More recently, Salomonsen (1983: 29) described *C. e. sumbawae* as being: "Like nominate *esculenta*, but gloss of upper-parts duller and not

greenish-blue, but darker blue...". Note that violet has been eliminated from the spectrum, although Salomonsen examined at least partly the same specimens previously studied by Stresemann and Rensch.

Gloss as a subspecific character must be treated with the utmost caution, for not only may its colour depend on the angle under which it is viewed, but it is also strongly dependent on the state of the plumage. With only one adult bird from Flores, and none from other parts of the range ascribed to *sumbawae*, I am obviously not in a good position to discuss the characters and variation of the subspecies. Just the same, it is worth observing that the specimen is mainly glossy green, perhaps with a slight admixture of bluish on the primaries and rectrices, but still essentially glossy green. From birds of Java and Bali (*C. linchi*) it differs by the latter being a duller oil-green, and lacking white basal spots to the rectrices. *C. e. neglecta* seems to be a duller subspecies (cf. Mayr, 1944a: 153); the few specimens available to me conform to this.

Although it is not directly relevant, I have, for the identification of these specimens, consulted Somadikarta's (1986) paper. The large amount of material studied by him, gives his paper a great value. Still, there remain some unexplained facts. He has specifically separated *C. esculenta* and *C. linchi*, the latter inhabiting Sumatra, Java, Bali and Lombok. *C. linchi* is diagnosed as being glossy green, and having a naked hind-toe; the western populations of *C. esculenta*, on the other hand, would be glossy blue, and have a feather tuft on the hind-toe. I find it illogical that the more eastern populations of *C. esculenta*, like *C. e. sumbawae*, immediately adjacent to *C. linchi*, are glossy green, and have a naked hind-toe. There is also a large distributional gap between the eastern populations of *C. esculenta*, and the western populations included by Somadikarta into this species. It might be more logical to treat these western forms as constituting a distinct species, the name of which would apparently be *Collocalia cyanoptila*, or *C. marginata*, if the relationship of the Philippine forms currently included in *C. esculenta* lies with these western forms (cf. Dickinson, 1989). If this is accepted, it becomes once more possible to unite *C. linchi* and *C. esculenta* to one species.

In several publications, Somadikarta has hinted that *C. linchi* is not conspecific with *C. esculenta*, but I cannot find that he has published arguments, until 1986, when he described sympatric occurrence of *C. linchi* and *C. esculenta* in Sumatra. I note that Somadikarta himself said of this: "I have not yet decided upon the relationship between the *esculenta* taxa without tail spots to the west and north of Stresemann's line and those with tail spots to the east and south".

In his discussion of nominate *C. e. esculenta*, Salomonsen (1983: 34-35), refers to a paper by me (Mees, 1965: 172) of which he finds some of the conclusions "quite incomprehensible". When a man of the calibre of Salomonsen reads in my paper the opposite of what I intended it to mean, only one conclusion is possible, and that is that I have completely failed in writing comprehensible prose. For this I accept the full blame. What I was trying to point out was that, within the large range ascribed to nominate *C. esculenta* before Ripley separated *C. e. nubila* (Celebes, the Moluccas, Aru Islands, the whole of New Guinea), North Moluccan birds actually are darker on the underparts than specimens from New Guinea and the Aru Islands, thus conforming to Ripley's diagnosis, but that the material available to me from Ambon in the South Moluccas, the type-locality of nominate *esculenta*, was also dark, like birds from the North Moluccas, so that if *C. e. esculenta* had to be split by this character, birds from the North and the South Moluccas

would remain together as nominate *esculenta*, whereas the birds with whiter underparts from the Aru Islands and New Guinea, if the difference was considered sufficient for expression in nomenclature, would have to be known as *C. e. hypoleuca*.

There are other aspects of swift classification in which Salomonsen and I do not see eye to eye, for example in the recognition of *Hemiprocne mystacea confirmata*. It is mainly a matter of subjective judgement, whether one wants to recognize in nomenclature an average difference, but I regret that Salomonsen (1983: 11) ignored the specimen from southern New Guinea with a wing-length of only 212 mm, which was the starting point of the discussion (Mees, 1964b: 11-12). This gave in the small series measured by me for the smaller subspecies *confirmata* a wing-length of 208-236 (220.3) mm, for the larger subspecies *mystacea* a wing-length of 212-239 (226.9) mm. It remains my opinion, contrary to Salomonsen, that the considerable individual variation (ca. 13%), with an almost complete overlap in measurements, constitutes a more important argument against recognition of *confirmata*, than the average difference of 6.6 mm (ca. 3%) constitutes in its support.

In the case of *Collocalia vanikorensis*, Salomonsen (l.c.: 89) cited me correctly, as far as it goes, but he did not heed my conclusions. My comment on strange contradictions in Mayr's (1937) "thorough study" and "excellent review" (Salomonsen, l.c.: 84, 87) appears to have been too subtle for him. When consulting the distributional map presented by Salomonsen (l.c.: fig. 26), it should be kept in mind that he did not examine a single specimen from either the North or the South Moluccas, so that his inclusion of the North Moluccas into the range of the subspecies *waigeuenisis* is no more than a guess. The distribution shown in fig. 26 for *waigeuensis* (North Moluccas, Waigeu, Misool, Salawati), with on the New Guinea mainland opposite Salawati a different subspecies, *granti*, is zoogeographically impossible. It is perhaps well to point out that the name *moluccarum* antedates the names *aenigma, heinrichi, waigeuensis, steini* and *granti*; it is therefore unintentionally misleading when Salomonsen describes *moluccarum* as a "very ill-defined form", for it is the only name of the several just listed that may survive future revision.

Apus pacificus pacificus (Latham)

[*Hirundo*] *pacifica* Latham, 1801, Suppl. Ind. Orn.: lviii – Nova Hollandia.

Collector.— de Jong (1).
Material.— None.

Notes.— The fact that a single bird from Flores (♀, 18.x.1929, Mboera) remains the only specimen record of this species from the Lesser Sunda Islands, should not be interpreted as meaning that it is of rare occurrence. It should pass over the islands twice a year, on its migration from north-eastern Asia to Australia and back, and may also overwinter in small numbers, as it does in Sumatra and Java (cf. Holmes, 1977; Mees, 1982a: 90). Observations from Timor, in March and September 1985, confirm the above picture (Andrew, 1986).

Verheijen (1961) saw a bird which he identified as "*Apus pacificus* (or *A. affinis*)" on his visit to Palué. It is perhaps worth recording that on 24.ix.1984, when on board of the

RV Tyro, I observed two individuals of *A. pacificus* rather high over the ship in the position 7°15'903S, 120°38'563E, which is a little south of Djampea, and about 110 km north of western Flores.

The number of records from Sulawesi (Celebes) is also limited. In this connection I want to discuss a record by Maurenbrecher (in Coomans de Ruiter & Maurenbrecher, 1948: 176) of several *Apus affinis* at Makassar. White (1976, and in White & Bruce, 1986: 268) suggested that these observations concerned *A. pacificus*, but apparently he overlooked, at least he ignored, the statement in the same place, that Dr J.R. van Blom had found *A. affinis* nesting in the fort of Balangnippa, Sindjai (Bonthain). This seems definite enough, and proves breeding in southern Celebes at least some forty years earlier than the record listed by White & Bruce, that was based on observations made in 1978 by Escott & Holmes (1980). In early October 1984, when staying in Makassar for a few days, I had, from my hotel room, a view of several busily-attended nests of *A. affinis*, placed under the edge of the roof of a nearby tall house. Evidently, the species is a well-established resident.

Alcedo atthis floresiana Sharpe

Alcedo floresiana Sharpe, 1892, Cat. Birds Brit. Mus. 17: 140, 151 – Flores.

Collectors.— Allen (at least 4), Weber (1, specimen not traced), Everett (2), Rensch (3), de Jong (1), Schmutz.
Material.— ♀, 20.ix.1969, Look (Schmutz, RMNH no. 81403); ♂, 12.x.1969, Nggoer, west coast (Schmutz, RMNH no. 97138); ♂, 14.ix.1971, Look river, coast (Schmutz, RMNH no. 97124).

Notes.— This is a good subspecies, deeper blue than the migrant subspecies from the northern hemisphere, but, like them, with brown cheeks. It is confined to the Lesser Sunda Islands. *A. a. ispidoides*, the resident subspecies of Sulawesi (Celebes), the Moluccas, etc., is deep blue, like *floresiana,* but has the sides of the head blue (sometimes, there are traces of brown).

In a previous publication I pointed out that there is no proof of the occurrence of this species (the subspecies *ispidoides*) on the western Papuan islands Misool and Salawati (cf. Mees, 1965: 198). As not all subsequent authors are aware of this (cf. Rand & Gilliard, 1967: 281; Forshaw, 1983: 70; Beehler, Pratt & Zimmerman, 1986: 144), I repeat it here.

Forshaw (1983: 69, map) has in addition given the species a much too generous range in mainland New Guinea, where it is known from the eastern part only. An interesting question is: why this should be so.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen	culmen from nostril
♂	72	31	10½	44.8	37.8	33.9
♂	72	30½	11	49	37.3	32
♀	71	30	9.2	43	38	34

Ceyx rufidorsa Strickland

Ceyx rufidorsa Strickland, 1847, Proc. Zool. Soc. Lond. 14 (1846): 99 – Malacca.

Collectors.— Allen (at least 2, cf. Sharpe, 1892: 180); Colfs (1); Everett ("a fine series from the lower country", cf. Hartert, 1898a: 42).
Material.— (?), 1880, Flores (Colfs, RMNH cat. no. 26).

Notes.— It is interesting that this species has penetrated as far east as Sumba, where evidently it is not rare (there are seven specimens in Sutter's collection, cf. White & Bruce, 1986: 486). The distributional maps published by Forshaw (1983: 128) and Ripley & Beehler (1987) must be corrected in this respect.

The question as to whether *C. rufidorsa* and *C. erithaca* are to be regarded as conspecific has, after more than forty years of investigation and discussion, become a matter of purely subjective personal preference. The latest revisers (Ripley & Beehler, 1987) treat *C. rufidorsa* as a separate species; they say also that the species, thus defined, shows no geographical variation worthy of nomenclatural separation, so that, evidently they no longer recognize *C. rufidorsa jungei* Ripley from Simalur, still listed by Van Marle & Voous (1988: 129).

Pelargopsis capensis floresiana Sharpe

Pelargopsis floresiana Sharpe, 1870 (1 April), Monogr. Alcedinidae (pt. viii): pl. 36 and text – Flores.
Pelargopsis floresiana Sharpe, 1870 (June), Proc. Zool. Soc. Lond.: 62, 68 – Flores.

Collectors.— Allen (at least 5, cf. Sharpe, 1892: 104), Everett, de Jong (2), Verheijen/Schmutz.
Material.— ♀, 12.viii.1968, Waé Mulu, 700 m (Verheijen, RMNH no. 65314); ♀, 7.vii.1972, Ruteng, 1150 m (Verheijen, RMNH no. 85277); ♂, ♀, 1.viii.1972, Bara-Latji, 200 m (Schmutz, RMNH nos. 80855, 81069).
Iris chocolate brown.

Notes.— Specimen no. 85277 crashed through a window pane at the, for this species, surprising altitude of 1150 m.

The description of *Pelargopsis floresiana* in the Monograph of the Alcedinidae was published at least two months earlier than that in the "Proceedings", which is usually cited as the original description (for the date of publication of Part viii of the Monograph, see Zoological Record for 1870: 41).

The statement by Warren (1966: 99), on a syntype of *Pelargopsis floresiana*: "Flores, 1869. Collected by A. R. Wallace", cannot be correct. The bird in question, like the other syntypes referred to, must have been collected by Allen in 1862.

The status of the subspecies *floresiana* requires discussion. According to Sharpe (1892), the main character by which this subspecies could be distinguished from *P. gurial* was that it shows "the crown of the head strongly washed with green". Sharpe's *P. gurial* is the subspecies from continental India, now known as *P. c. capensis*, the form the most remote from Flores of the whole conglomerate, but the only subspecies with which Sharpe compared *floresiana*. Subsequently Vorderman (1895b) distinguished his *P. sasak* from *floresiana*: "door het gemis aan groen, waarmede de kopvederen van *floresiana* sterk bewassen zijn" [10]).

[10] By the absence of green, with which the feathers of the pileum of *floresiana* are strongly washed.

The character was dismissed by Hartert (1898a: 43) in the following words: "A fine series of this interesting form from South Flores. Specimens from Lombok cannot be separated from typical *floresiana*. Vorderman's *sasak* is only an immature specimen, as the characters given by him are found in immature birds before me". Note that Hartert calls *floresiana* an interesting form, but provides no evidence that he has compared it with any other subspecies. Oberholser (1909) had no material, either from Java or Flores, and therefore his description of *floresiana* was based on Sharpe (1870, 1892), although it is not clear where he got the statement about paler ochraceous lower parts, as this is not a character mentioned by Sharpe. Stresemann (1913b: 338) had a specimen from Bali which he referred without explanation to *floresiana*. Forshaw (1983: 145) gave as only character to separate *floresiana* from *javana*, that the former would have "the brownish cap and sides of the head washed with dull green". This looks much like a repetition of a character originally given by Sharpe, and I cannot confirm it. White (in White & Bruce, 1986: 274) repeated the greenish wash and resurrected the character of the pale shade of the ochraceous underside, which had become lost in recent years. None of the four specimens from Flores examined by me has a greenish wash on the head, neither are the underparts conspicuously pale, compared with *javana*. A specimen from Bali (RMNH no. 10122) shows no trace of green on the cap either.

Only Hoogerwerf (1963d: 150), perhaps the only author to have personally compared specimens from Flores (2) with specimens from Java (4), expressed doubt about the validity of *floresiana*, although, owing to his limited material, he did not venture a definite conclusion. With a much larger material than Hoogerwerf had, I still feel dubious about the validity of *floresiana*. This is mainly due to the large individual variation. Tentatively, I would diagnose *floresiana* (as differentiated from *javana*) as follows: cap on average darker; mantle and tail, and also the rump-patch somewhat deeper and purer blue, less greenish blue.

Measurements:		wing	tail	entire culmen	exposed culmen	culmen from nostril
Flores	♂	147	94	80	70	63
	3 ♀	155, 156	90+, 97	81, 83, 78	74, 75, 71½	65, 67, 63½
		160		104		
Bali	♂	146	89	81	74	66

Halcyon chloris chloris (Boddaert)

Alcedo Chloris Boddaert, 1783, Table Pl. Enlum.: 49 – no locality, but = Bouro (Buru), from the references to Buffon and Latham.

Collectors.— Semmelink, Allen, Martens, Colfs, Weber, ten Kate, Rensch (1), de Jong (2), Verheijen (4, MCZ), Pfeffer (2), Verheijen/Schmutz.

Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 69); (?), 1862, Flores (Allen, ex coll. Sody, RMNH no. 26948); 2 (?), 1880, Flores (Colfs, RMNH cat. nos. 115, 116); ♂, xii.1888, Sikka (Weber, RMNH cat. no. 124); (?), 1/3.v.1891, Groot Bastaard (ten Kate, RMNH cat. no. 126); (?), 27.ix.1955, Bénteng-Djawa (Verheijen, RMNH no. 61512); (?), x.1958, Ruteng (Verheijen, RMNH no. 61513); ♂, 5.ix.1968, Ruteng (Verheijen, RMNH no. 59808); ♀, 14.x.1970, Ru'a, Ruteng (Verheijen, RMNH no. 65325); ♂, 1.ix.1971, Nunang, 650 m (Schmutz, RMNH no. 85266); ♂, 2.x.1971, Tendo, Ruteng (Verheijen, RMNH

no. 85267); ♀, 14.i.1983, Nunang, 650 m (Schmutz, RMNH no. 81160); (?) [= ♂], not dated, West Flores (Verheijen, RMNH no. 65326).
Eggs (fig. 14c): c/4, 27.ix.1955, Bénténg Djawa, Kentjo (RMNH no. 70635); c/4, 10.x.1955, Mano (RMNH no. 70636); c/4, 2.xi.1956, Poéng (RMNH no. 70637); c/4, x.1957, Tulang, Potjong (RMNH no. 70638); c/2, 11.x.1957, Mano (RMNH no. 70639); c/3, 19.x.1958, Potjong (RMNH no. 70640); c/4, 16.ix.1959, Puntu (RMNH no. 70641); c/1, 12.x.1959, Montjok (RMNH no. 70642). The eggs are white, only moderately glossy.

Some measurements and weights:	RMNH no. 70635	28.2 × 23.8	0.536
		29.1 × 23.7	0.4983
		29.1 × 25.0	0.5695
		29.1 × 25.3	0.5917
	RMNH no. 70637	30.6 × 25.4	0.6057
		30.9 × 25.3	0.5961
		31.4 × 26.0	0.6529
		31.7 × 26.3	0.6492
	RMNH no. 70641	29.5 × 24.6	0.5315
		30.5 × 24.5	0.5269
		30.7 × 23.9	0.4898
		30.8 × 24.9	0.5221

Notes.— It remains to be seen whether birds from Java and Sumatra, variously named *cyanescens*, *laubmanniana* and *palmeri*, are really different from the nominate form.

Measurements:	wing	tail	tarsus	culmen from skull	culmen from nostril
2 ♂	106, 116	63½, 70	16.2, 16	47.3, 53	38.4, 42
♀	111	66	15.8	48.7	39

Halcyon sancta sancta Vigors & Horsfield

[*Halcyon*] *Sanctus* Vigors & Horsfield, 1827, Trans. Linn. Soc. Lond. 15: 206 – New Holland.

Collectors.— Everett (3), Rensch (7), de Jong (2), Verheijen/Schmutz.
Material.— ♀, 5.v.1956, Ruteng (RMNH no. 61482); ♂, 27.vi.1971, Langkas, 750 m (Verheijen, RMNH no. 85269); ♂, 3.xi.1971, Nisar, beach (Schmutz, RMNH no. 85268); ♂, 2 ♀, 15.ix.1982, Nunang, 650 m (Schmutz, RMNH nos. 81161, 81073, 81075); ♀, 20.ix.1982, Nisar (Schmutz, RMNH no. 81074).

Notes.— Rensch (1931a: 533) observed of this species: "Ein australischer Zugvogel, der sich während der Trockenzeit in grosser Anzahl an den Küsten – besonders in der Mangrovezone – vereinzelt auch im Kulturlande und im Buschwalde (bis 200 m Höhe) findet". The material listed here increases the vertical range considerably, to over 1000 m (Ruteng).

I take this opportunity to correct an error in a previous paper where a specimen of *H. sancta* is listed, collected on Ambon in January (cf. Mees, 1982a: 93). The specimen was misidentified and is *H. chloris*! The removal of this record underlines that "oversummering" of *H. sancta* in its winter quarters is exceptional. There is no evidence to support White's speculation that the species might occasionally remain and breed in the Lesser Sunda Islands (White & Bruce, 1986: 278).

Halcyon fulgida Gould

Halcyon fulgidus Gould, 1857, Proc. Zool. Soc. Lond. 25: 65 – Lombock.
Monachalcyon fulgidus gracilirostris Rensch, 1928, Orn. Mber. 36: 48 – Sita (700 m), Westflores.

Collectors.— Allen, Colfs, Weber, Everett, Rensch (2), de Jong (3), Verheijen (4, MCZ), Verheijen/Schmutz.
Material.— (?), 1862, Flores ("collected for Mr Wallace" = Allen, RMNH cat. no. 1); (?), iv.1880, Flores (Colfs, RMNH cat. no. 2); (?), v.1880, Flores (Colfs, RMNH cat. no. 3); (?), 26.xi.1888, Bari (Weber, RMNH cat. no. 5); skeleton, xi.1888, Bari (Weber, RMNH cat. a); (?), xi/xii.1888, Flores (Weber, RMNH cat. no. 4); ♀, 30.x.1958, Ruteng (Verheijen, RMNH no. 61543); (?) ad., 1.xii.1958, Potjong (Verheijen, RMNH no. 85274); ♀, 17.ii.1959, Ruteng (Verheijen, RMNH no. 61544); ♀, 10.i.1969, Todo, 700 m (Verheijen, RMNH no. 65315); ♀, 12.ix.1971, Tjeréng, 850 m (Schmutz, RMNH no. 81071); ♀, 21.x.1971, Rana-Kulan (Verheijen, RMNH no. 85276); ♀ im., 22.x.1971, Rana-Kulan (Verheijen, RMNH no. 85273); (?), ix.1972, Mano (Verheijen, RMNH no. 85275); ♂, 15.ix.1976, Laring (Schmutz, RMNH no. 81027); (?), 1.v.1978, Golo Lehot (Verheijen, RMNH no. 81070).
Eggs (fig. 14d): c/2, Flores, without further data (RMNH no. 70643); c/2, 7.xii.1952, Potjong (RMNH no. 70644); c/1, 22.xii.1953, Potjong (RMNH no. 70645); c/1, 9.i.1954, Potjong (RMNH no. 70646); c/1, 29.x.1955, Bénténg Djawa (RMNH no. 70647); c/2, xii.1955, Bénténg Djawa (RMNH no. 70648); c/2, ii.1958, Potjong (RMNH no. 70649); c/2, 1.xi.1958, Lalang, Todo (RMNH no. 70650); c/2, 14.ii.1959, Todo (RMNH no. 70651); c/1, 28.ii.1959, Lamé (RMNH no. 70652); c/1, 29.xii.1959, Poéng (RMNH no. 70653); c/1, x.1961, Soa (RMNH no. 70654); c/1, 12.x.1961, Soa (RMNH no. 70655); c/2, 3.iii.1962, Mataloko (RMNH no. 70656). The eggs are white, more glossy than those of *H. chloris.*

Some measurements and weights:	RMNH no. 70643	35.5 × 30.0	– (damaged)
	RMNH no. 70644	36.8 × 30.0	0.9847
		37.5 × 30.0	0.9384
	RMNH no. 70645	35.4 × 30.0	0.905
	RMNH no. 70646	36.3 × 30.7	0.940
	RMNH no. 70647	34.7 × 29.7	– (very large hole)
	RMNH no. 70648	36.4 × 29.7	1.0023
		36.9 × 29.8	0.9865
	RMNH no. 70649	34.9 × 30.9	0.9672
		36.6 × 30.1	0.9276
	RMNH no. 70656	35.1 × 30.0	0.9034
		35.5 × 30.0	0.9341

Notes.— Young birds differ from the adults by having the breast cream or pale brownish, with sparse, very narrow grey bars, not pure white as in the adults; back and the larger part of the wings dull black, without purple-blue gloss.

Forshaw (1985: 408) considered the subspecies *gracilirostris* to be: "probably not separable", and White (White & Bruce, 1986: 273) thought it unnecessary to recognise this subspecies formally.

For comparison with the series from Flores, only one specimen each from Lombok and Sumbawa were available to me (see table of measurements below). They show that Rensch's statement that Flores birds have the bill: "erheblich schmaler und länger" is not correct, but the second part of the diagnosis: "sein First kantiger als bei Exemplaren von Lombok" has some substance. The difference is subtle and variable, and I agree with White, that it is altogether too slight for recognition in nomenclature.

Inter alia it may be recorded that the RMNH male from Lombok is a Wallace

specimen, 1856; it is the bird figured by Sharpe (1868: pl. (99)). Warren (1966: 104) listed a single BM specimen from Lombok, ex coll. Gould, as holotype, probably following Sharpe (1892: 296), who lists this bird as type. In the original description, Gould makes no mention of the number of specimens he examined, although his reference to the trader Frank suggests that more specimens were then in the hands of that gentleman. In his next publication (Gould, 1860, pl. 46), however, it is clearly stated: "I published a description of this remarkably fine species of *Halcyon* in 1857, taken from specimens [note plural! - GM] received direct from Mr Wallace ..."; further down: "two beautiful specimens grace my collection". On this basis I would assume that all specimens collected by Wallace were seen by Gould, and therefore are syntypes: four in the British Museum, enumerated by Sharpe (1892), the RMNH specimen, and presumably also the male from Lombok in the Museum Heineanum (cf. Cabanis & Heine, 1860: 163).

The RMNH specimen was purchased from Frank on 1 May 1857; considering that Gould expressly states having consulted with Frank, and that he offered the description to the Zoological Society in its session of 24 March 1857 (it was published on 14 July 1857), it is obvious that the specimen sold by Frank (as *Alcedo* n. sp.; for *ƒ* 25.-, a high price!) is one of those examined by Gould.

Incomprehensibly, Schlegel (1874b: 16) claimed that this specimen was acquired in 1866, although he had listed it in the previous catalogue, published in 1863 (Schlegel, 1863b: 24-25)! Again, Schlegel (1864d: 21, 54, pl. 9 fig. 1) described and illustrated this same specimen, adding that it was the only one in the collection.

Measurements:		wing	tail	tarsus	culmen from skull	culmen from nostril
Flores	♂	134	106	22.5	51	37
	4 ♀	130-140	110-116	21.5-22.5	49-53	35-38
		(135)	(112)	(22.1)	(50.5)	(36.4)
	6 (?)	126-139	97½-112½	21-22.2	48-53	34.7-38
		(133.7)	(105.3)	(21.6)	(50.5)	(36.3)
Lombok	♂	132	107	21	52.5	37.6
Sumbawa	(?)	128	108	22	51	37

Merops ornatus Latham

M[*erops*] *ornatus* Latham, 1801, Suppl. Ind. Orn.: xxxv – Nova Hollandia = New South Wales (cf. Latham, Gen. Synops. Birds Suppl. 2: 155-156).

Collectors.— Allen, Colfs, Weber (1, ZMA), Rensch (2), Verheijen/Schmutz.
Material.— (?), iv.1880, Flores (Colfs, RMNH cat. no. 102); (?), v.1880, Flores (Colfs, RMNH cat. no. 99); 2 (?), 17.vi.1968, Ruteng (Verheijen, RMNH nos. 59805, 59806); 3 ♂, 1.ix.1971, Nunang, 650 m (Schmutz, RMNH nos. 85261, 85262, 85263); ♂, 13.vi.1976, Poco Nernancang (Schmutz, RMNH no. 81303); ♂, 17.v.1976, Lingko Ncilor (Schmutz, RMNH no. 81315); ♂, 19.v.1976, Lingko Ncilor (Schmutz, RMNH no. 81308).

Notes.— On Flores, this is a winter visitor from Australia; for a discussion see Mees (1982a: 102-104).

Merops philippinus Linnaeus

[*Merops*] *philippinus* Linnaeus, 1767, Syst. Nat. (ed. 12) 1 (2): errata at end of volume, referring back to (1): 183 – in Philippinis.

Collectors.— Allen, Weber (1), Everett (1), de Jong (2), Verheijen/Schmutz.
Material.— (?), xii.1888, Maumeri (Weber, RMNH cat. no. 41); ♀, 2.iii.1969, Lita, 50 m (Verheijen, RMNH no. 85265); ♂, ♀, 27.x.1969, Djonéng (Schmutz, RMNH nos. 65327, 65328); ♂, 5.ix.1971, Nunang, 650 m (Schmutz, RMNH no. 85264). Stomach contents Hymenoptera (wasps) and Odonata.
Eggs: c/4, c/4, and 4 loose eggs, 24.x.1974, Maro-Kama, 50 m (RMNH nos. 85431, 85432, 85433). The eggs are glossy white; they are the most nearly round eggs I know: in the bluntest one (21.5 × 20.3 mm), the width is 94.4% of the length.

Measurements and weights:	RMNH no. 85431	21.5 × 20.3	0.3169
		22.0 × 19.9	0.3166
		22.1 × 20.2	0.3352
		22.9 × 20.1	0.3354
	RMNH no. 85432	22.5 × 20.4	0.3098
		22.7 × 20.1	0.2736
		22.7 × 20.2	0.3075
		22.8 × 20.2	0.2856

Notes.— The ♂ from Djonéng is marked as having been collected at the nesting-hole. The eggs from Flores were previously recorded by Mees (1982a: 105); a discussion of geographical variation and distribution of the species is given in the same place, and is supplemented by Mees (1986: 63-64). An additional record of nesting in Celebes is from near Bintoehan, 26.viii.1945 (Coomans de Ruiter, 1947).

Eurystomus orientalis orientalis (Linnaeus)

[*Coracias*] *orientalis* Linnaeus, 1766, Syst. Nat. (ed. 12) 1: 159 – India orientali, arbitrarily restricted to Java by Stresemann (1913a: 298).
Eurystomus orientalis connectens Stresemann, 1913, Novit. Zool. 20: 302 – Moa.

Collectors.— Semmelink, Allen, Everett (4), Rensch (1), de Jong (2), Verheijen (1, MCZ), Verheijen/Schmutz.
Material. –(?), 1862, Larantoeka (Semmelink, RMNH cat. no. 68); ♂, 23.i.1969, Naga, 100 m (Schmutz, RMNH no. 97176); ♀, 22.vi.1969, Nisar (Schmutz, RMNH no. 85218); ♂, 1.ix.1969, Rowang, Ruteng, 1200 m (Verheijen, RMNH no. 65355); ♂ juv., 26.i.1976, Nisar, 100 m (Verheijen, RMNH no. 81091); ♀, 27.i.1976, Nisar (Schmutz, RMNH no. 81086); ♀, 30.i.1976, Waé-Wako, 200 m (Schmutz, RMNH no. 81087); 2 ♂, 7.ii.1976, Nunang, 650 m (Schmutz, RMNH nos. 81088, 81090); ♂ im., 12.ii.1976, Nunang (Schmutz, RMNH no. 81089).
Eggs: c/2, 5.xi.1960, Soa (RMNH no. 70634). The eggs are white, moderately glossy. This set was previously described by Forshaw (1993: 101, s. n. *E. o. pacificus*).

Measurements and weights:	RMNH no.70634	36.9 × 27.0	1.0673
		37.2 × 27.7	1.2072

Notes.— White & Bruce (1986: 285-287), the latter also referring to a manuscript by H. Scholtes, placed the subspecific name *connectens*, which had been used for the

Lesser Sunda Island populations since its introduction by Stresemann (1913a: 302), in the synonymy of *E. o. pacificus*. This may possibly be correct for some of the more easterly populations traditionally referred to *connectens*, but certainly not for birds from the Lesser Sunda Islands: specimens from Flores are clearly deeper coloured than *pacificus* and resemble birds of the nominate subspecies from Java, from which, in fact, I am unable to separate them. The Flores material shows no evidence of being part of a "continuous cline", as first suggested by Ripley (1942b), and repeated by White & Bruce (1986: 285-287). A specimen from Sumba (leg. ten Kate) also belongs to the nominate subspecies. Specimens from Timor are not available. As far as I can judge, *E. o. pacificus* has not yet been recorded from the Lesser Sunda Islands, although at least on the eastern islands of the chain it is to be expected as a winter visitor from Australia.

The type specimen of *E. o. connectens* is from the island of Moa, east of Timor (see also Greenway, 1978: 218). The specimen was examined by Mrs LeCroy. It is an adult bird with a blue throat and a red bill with a small black tip (this is noted on Kühn's field label: "vermilion with black tip"). Mrs LeCroy (in litt., 18.iii.1996) concluded that the type can be matched to specimens of nominate *orientalis* from Java, and not to the duller Australian *pacificus.* The specimen proves that nominate *orientalis* ranges at least as far east as Moa, and also, of course, that *E. o. connectens* is a synonym of *E. o. orientalis*, and not of *E. o. pacificus* as suggested by White & Bruce.

Mayr's (1944b: 119) reconstruction of the colonization of Australia by *E. orientalis* is not necessarily wrong, but it was mainly based on recognition of "*connectens*" from the Lesser Sunda Islands as "an exact intermediate between *orientalis* and *pacificus*", hence on (in my opinion) faulty systematics.

Rensch (1931a: 528) commented on the large size of some of his specimens. The specimens examined by me are not exceptionally large, but are in the upper half of the range of variation ascribed to their subspecies.

Of this small series, only one (RMNH no. 65355) had the bill entirely red; all others show it at least partly black or dusky, which is a sign of immaturity. The juvenile bird lacks the blue throat patch, and its measurements suggest that it is not yet fully grown. In one or two of the others the blue throat patch is not yet fully developed, but their measurements indicate that they are fully grown. The reason why Father Schmutz collected several immature specimens, is that I asked him to pay special attention to birds in dull plumage, hoping that this would lead to the discovery of *E. o. pacificus.*

Hoogerwerf (1969/1971: 466) believed bill-colour to be a subspecific character. Discussing his observations in Udjung Kulon, the westernmost peninsula of Java, he wrote: "Probably most records relate to the dark-billed migratory race *calonyx*, because in only two cases was the breeding subspecies *orientalis* identified by its ivory yellowish bill". I have already mentioned that a dark bill is a character of immaturity, but Hoogerwerf's statement that nominate *orientalis* would have an ivory yellowish bill also requires some comment. Adults of all subspecies have red bills (based on personal observations and on literature records). My observations include nominate *orientalis* in Java with red bills. Actually, in my diary notes from Java, I found a single reference to a bird which seemed to have an orange-yellow bill; whether this was just due to a trick played by the light or actually an intermediate stage, I cannot say. Even orange-yellow is far from ivory yellowish. Perhaps Hoogerwerf examined old museum

specimens, in which the red bills tend to bleach to a condition that may well be called ivory yellowish, but that does not explain his field-observations.

Stresemann (1939: 346; 1940a: 422) listed *Eurystomus orientalis* as an example (actually his best example) of 'Doppel-Einwandering' in Celebes: nominate *orientalis* from the Philippines, and *connectens* from the Lesser Sunda Islands. This case falls with the re-identification of the Lesser Sunda birds as nominate *orientalis*. Actually, as was pointed out by White & Bruce (1986: 286), there is no proof yet that *E. orientalis* breeds in Sulawesi (Celebes), although I think that it does. Whether the specimens from southern Sulawesi (Celebes) and Muna ascribed by previous authors to '*connectens*' are migrant visitors of *pacificus* or dull, immature individuals of *orientalis*, remains to be seen.

Measurements:	wing	tail	entire culmen	exposed culmen
4 ♂	189-200	91½-101	34-35	25-27
	(194.3)	(95.5)	(34.4)	(26.2)
3 ♀	190, 196, 197	95, 99, 95	36, 36, 34	30, 27, 26
(?)	199	101	33	24
♂ juv.	186	87	31	23

Dendrocopos moluccensis grandis (Hargitt)

Iyngipicus grandis Hargitt, 1882, Ibis (4) 6: 45 – In insulis Malayanis "Lombock" et "Flores", restricted to Lombok by Rensch (1931a: 546).

Collectors.— Allen (several), Weber, Everett, Rensch (5), de Jong (3), Verheijen (1, MCZ), Verheijen/Schmutz.

Material.— ♀, 23/25.xi.1888, Reo (Weber, RMNH cat. no. 2); ♀, xii.1888, Maumeri (Weber, RMNH cat. no. 1); ♂, 7.vii.1969, Nunang, 650 m (Schmutz, RMNH no. 81442); ♂, 5.vi.1978, Poco Nernancang (Verheijen, RMNH no. 81406); ♀, 26.vi.1978, Waé Rukus (Verheijen, RMNH no. 81433); ♀, 23.v.1978, Golo Léhot (Verheijen, RMNH no. 81441); ♀, 6.vi.1978, Waé Hiam (Verheijen, RMNH no. 81451).

Eggs: c/2, 13.v.1956, Tado (RMNH no. 70673); c/2, 24.vi.1960, Potjong (RMNH no. 70674). The eggs are glossy white.

Measurements and weights:	RMNH no. 70673	18.0 × 13.9	0.1240
		18.2 × 13.9	0.1227
	RMNH no. 70674	19.3 × 14.5	0.1462

(the second egg is badly damaged, not measurable)

Notes.— The species is apparently not known from Bali. There is a conspicuous difference in size and proportions between *D. m. grandis* and nominate *D. m. moluccensis* from Java. Note that *grandis* has a proportionally much longer bill and tail than *moluccensis*. The large size and long bill of this subspecies may be at the root of the erroneous records of *D. macei analis* from the islands between Sumbawa and Flores by Hoogerwerf (1956).

Measurements:		wing	tail	culmen from skull
Flores (*D. m. grandis*)	2 ♂	81, 86	42½, 45	17.9, 20.0
	5 ♀	84, 84½, 85, 87, 87	45, 44, 46, 46, 48½	20.4, 19.8, 20.3, 20.3, 21.3
West Java (*D. m. moluccensis*)	10 ♂	73-77 (74.5)	29-32½ (30.9)	15.0-17.0 (15.6)

East Java (*D. m. moluccensis*)	♂	76	30½	15.5

The smaller of the two males from Flores is probably immature.

Pitta elegans concinna Gould

Pitta concinna Gould, 1857, Proc. Zool. Soc. Lond. 25, 1857 (14 July): 65 – Lombock.
Pitta concinna everetti Hartert, 1898, Novit. Zool. 5: 459 – Alor.

Collectors.— Semmelink, Allen, Everett ("a fine series"), de Jong (3), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 3); (?), 13.vi.1973, Golo-Karot, Borong (RMNH no. 85295).
Eggs (fig. 14e): c/2, 27.i.1953, Nempong (RMNH no. 70675); c/1, 28.vi.1955, W. Rembong (RMNH no. 70676); c/1, ca. 20.iii.1957, Djinggor (RMNH no. 70677); c/3, iv.1957, Nunuk (RMNH no. 70678); c/3, iv.1959, Bénténg Djawa, Djinggor (RMNH no. 70679); c/2, 20.iv,1959, Waé Tua (RMNH no. 70680); c/1, 1960, Djinggor (RMNH no. 70681); c/3, 21.ii.1961, Kisol (RMNH no. 70682); c/3, 1.vi.1962, Soa (RMNH no. 70683).
There is some variation in the eggs. The ground colour is white, and they are either densely mottled with not very dark pinkish brown markings, or with sparser, more sharply defined, dark grey or blackish spots.

Measurements and weights:	RMNH no. 70677	25.5 × 21.0	0.2510
	RMNH no. 70678	24.9 × 20.8	0.2630
		25.4 × 21.2	0.2875
		the third egg is badly damaged	
	RMNH no. 70679	27.1 × 21.7	0.3284
		27.4 × 21.8	0.3528
		27.6 × 21.7	0.3384
	RMNH no. 70680	26.4 × 20.7	0.2393
		26.8 × 21.4	0.2932
	RMNH no. 70681	27.1 × 22.0	0.3359
	RMNH no. 70682	26.6 × 20.8	0.3275
		27.1 × 21.0	0.3259
		the third egg is badly damaged	
	RMNH no. 70683	28.4 × 22.0	0.3461
		29.0 × 21.5	0.3373
		29.0 × 22.2	0.3521

Notes.— As in so many instances, the first specimen of *P. e. concinna* was in the Forsten collection from Bima, ca. 1842. This subspecies was described almost simultaneously by Gould and by Verreaux. Mayr (1979: 328) records as publication date of *Pitta concinna* Gould, April 1857, for *Pitta Mathilda* Verreaux, July 1857, but according to Duncan (1937: 82), the actual date of publication of *P. concinna* is 14 July 1857, so that its presumed priority over *P. Mathilda* requires further investigation.

Meagre as the available material is, it supports White & Bruce (1986: 295) in their rejection of *everetti* from Alor, exclusively based on having a supposedly longer bill than *concinna*.

Measurements:		wing	tail	tarsus	entire culmen	exposed culmen
Flores	2 (?)	99½, 104	34½, 37	38½, 37	25, 27.3	20.4, 21.1
Adonara	(?)	100	36	37	27.8	21
Alor	2 (?)	105, 105	33, 37	37½, 38½	25.6, 27.8	20.3, 24

Pitta elegans maria Hartert

Pitta maria Hartert, 1896, Bull. Brit. Orn. Cl. 5: xlvii – Mountains of Sumba.

Collectors.— Everett (1), Verheijen.
Material.— ♀, 2.xii.1968, Ruteng, 1150 m (Verheijen, RMNH no. 85296). Iris grey-brown, bill brownish black, legs pinkish pearl colour.

Notes.— A male of this, the Sumba subspecies, was taken by one of Everett's native collectors in South Flores, in November 1896 (cf. Hartert, 1897b: 526-527 and 1898d: 470-471). In spite of Hartert having obtained Everett's personal assurance that the specimen was correctly labelled, an element of doubt seems to have remained whether it was actually from Flores and the record was completely ignored by later authors.

Now a second specimen of *P. e. maria* from Flores is available. The identification rests on the following characters: the superciliaries are pale over their whole length, very pale buff in their anterior part, almost white posteriorly (in *P. e. concinna*, the anterior superciliaries are brown); only the fifth primary, on each side, has a small white speculum, all other primaries are completely black; there is only a very small patch of greyish black on the lower breast, above the light red of the belly. In the colour of its superciliaries, the specimen resembles *P. e. elegans*, from which, however, it differs by smaller size, the broad terminal tail-band (much narrower in *elegans*), the reduction of the wing-speculum, and the slightly more extensive black throat-patch. Of particular interest is a note by Father Verheijen on the label: This bird has never before been found at such a high altitude and is unknown to the local population; normally from 0-500 m.

Whether *P. e. maria* is actually a migrant, or only shows some irregular dispersal, is not yet clear from the limited evidence available, but very likely it is as least a partial migrant ('Teilzieher'). Note that the geographically adjacent subspecies *P. e. elegans*, a breeding-bird of Timor and probably Kisar (♂, 15.xii.1897, leg. Schädler, RMNH cat. 7), is certainly migratory.

As the migration of *P. e. elegans* has been little studied, I have brought together its records in a map (fig. 9). On present evidence, the Sula Islands constitute its main non-breeding quarters; specimens were obtained there by Allen (at least 3), Hoedt (5), Doherty (1), Menden (1) and an anonymous collector (1). The remaining records, from Buru (2), Boano (1), Ternate (1) and Tahulandang or Tagoelandang (1, cf. Meyer & Wiglesworth, 1898: 355, specimen MTD no. C 13526), are all due North of Timor, and all indicate migration in the same direction.

Distribution of *Pitta e. elegans* by month:

	s.d.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Timor	-	22	2	-	-	-	1	-	-	-	-	2	1
Kisar	-	-	-	-	-	-	-	-	-	-	-	-	1
Buru	-	-	-	-	2	-	-	-	-	-	-	-	-
Boano	1	-	-	-	-	-	-	-	-	-	-	-	-
Sula Isl.	4	-	-	-	-	-	-	-	-	-	-	-	-
Sula Besi	-	-	-	-	-	-	-	-	-	-	-	4	-
Sula Mangoli	-	-	-	-	-	-	-	-	-	-	1	1	-
Taliaboe	-	-	-	-	-	-	-	-	-	-	1	-	-
Ternate	-	-	-	-	-	1	-	-	-	-	-	-	-
Tahulandang	-	-	-	-	-	-	-	-	1	-	-	-	-

Fig. 9. *Pitta elegans*, breeding area on Timor and Kisar and records from non-breeding quarters.

Documentation for the map and the table of *P. e. elegans*:: Timor: ♂ and ♀, xi.1828, juv., vi.1828 (S. Müller, RMNH 88875, 88876, 88877, types of the species); ♂, 24.xii.1931, Koepang (Stein, ZMB); 11 ♂, 11♀, six of these in juv. plumage, 9/28.i.1932, Tjamplong (Stein, AMNH and 3 ZMB); ♀, 4-11.1932, Noilama (Stein, AMNH). Kisar: ♂, 15.xii.1897 (Schädler, RMNH). Buru: ♂, ♀, 24.vi.1922, Mada Range, 5000' (Pratt Bros., AMNH, cf. Hartert, 1924). Boano: ♀, received in 1863 (Hoedt, RMNH 88878). Sula Islands, Sula Besi (Sanana): 3 ♂♂, 1♀, 18, 18, 19 and 21.xi.1864 (Hoedt, RMNH). Sula Islands, Sula Mangoli: ♂, 26.xi.1864 (Hoedt, RMNH); ♀, x.1897 (Doherty, AMNH). Sula Islands, Taliaboe: ♂, 6.x.1938 (Menden, MTD, cf. Eck, 1977 and in litt.). Ternate: ♂, 5.v.1861 (Bernstein, RMNH). Tahulandang (Tagoelandang): (?), 6.viii.1894 (MTD, cf. Meyer & Wiglesworth, 1898: 355).

The above enumeration shows how important it is not to rely on published records alone. Hitherto I believed Mayr's (1944a) to be a complete record of the collections made by Stein, but he listed only five specimens, when Stein actually collected 24. Allen spent two months on the Sula Islands in 1858, but as his specimens are only dated to the year of collecting and the period of his stay is not known, his material cannot contribute to the table, although it does provide supporting evidence for the periodically common occurrence of *P. elegans* on the islands. In this stage, negative information is also valuable: the CSIRO collections from Timor, obtained in de months April, May, August and October, do not contain any *P. elegans*. Note, however, that these collections are from Portuguese Timor, where there would be less suitable habitat than in the western half of the island.

As White & Bruce suggest that *P. e. elegans* is absent from Timor in the months July-August, it is worth recording that a nestling from Timor is dated June 1829 (S. Müller, RMNH no. 88877). Of course, with this old material, lacking original labels, there is always a possibility of error. It seems to me likely, that *P. e. elegans* is a 'Teilzieher', and that at least part of the population is sedentary.

Rensch (1931a: 548) still believed that the resemblance between birds from Timor and birds from the Sula Islands, etc. was due to: "eine parallele Entwicklung ... und daß späterhin wohl auch noch Kennzeichen gefunden werden, welche die nördliche *elegans*-Gruppe von den Timor-Stücken trennen". Stresemann (1939: 408, Abb. 18) gave *elegans* as an interesting example of a subspecies that had expanded across the range of a different one (*vigorsi*). Mayr (1944a: 154) compared specimens from Sula-Mangoli (1) and Buru (2) with a series from Timor, and failed to find characters by which to separate them. He says nothing about migration. Again, Mayr (1979: 328) lists the islands from which *elegans* is known, without any suggestion of migration.

Van Bemmel (1948: 356) included Ceram in the list of islands from where *P. e. elegans* has been recorded. White & Bruce (1986: 295) mentioned in their text that they had been unable to find on what the Ceram record was based, but nevertheless included Ceram without a query in their enumeration of islands. In Dr van Bemmel's card-index (which formed the basis for his paper), I read that the record of Ceram was based on Salvadori (1881: 391). Looking up the reference, I only found Ceram mentioned in the following short sentence: "Boano, ad occasum Ceram (Hoedt)", i.e.: Boano, to the west of Ceram. It is a safe assumption that, due to superficial reading, van Bemmel's record of Ceram is based on this short sentence. Therefore, Ceram has to be deleted from the list of islands whence *P. e. elegans* is known.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♀	105	32½	38	24	21

Mirafra javanica parva Swinhoe

Mirafra parva Swinhoe, 1871, Ann. Mag. Nat. Hist. (4) 7: 257 – Flores.

Collectors.— Allen (at least 3), Everett (2), Rensch (2), de Jong (1), Verheijen.
Material.— 5 ♂, 9.iii.1971, Maro-Kama, Borong, 50 m (Verheijen, RMNH nos. 66160, 66161, 85030, 85327, 85328).
No eggs.

Notes.— Since I discussed these specimens in connection with *M. j. aliena* of eastern New Guinea (Mees, 1982a: 110), five additional specimens of *M. j. parva* have become available: four from Sumba and one from Sumbawa (leg. Mees, ix.1984). These specimens are in good plumage, and therefore suitable for a meaningful comparison with other subspecies.

First, however, differences between this fresh material, and the specimens from Flores as well as two old specimens from Sumba (leg. Ten Kate, vi-vii.1891), have to be described and evaluated. The fresh birds (there is no difference between specimens from Sumba and Sumbawa) have the upper parts with very little brown, the feathers have broad greyish, whitish, or just a trifle brownish-grey margins; the worn birds from Flores, on the other hand, have the pale margins narrower, and the aspect of the upper surface is a little more brownish. I have no difficulty in ascribing the difference to the state of the plumage. The underparts show little or no difference. More different are Ten Kate's specimens from Sumba. On the upper parts they are close to the specimens from Flores, but, although they are less worn, the feathers look blacker. The puzzle is, however, that one of these birds especially has the outer margins of the primaries, as well as the wing-coverts and the alula, darker brown than in all other birds. Ten Kate's specimens have been prepared from alcohol (as indicated on their labels; see also Büttikofer, 1892: 197), but I do not believe that that is the cause of the difference, as alcohol tends to bleach out, not to darken and intensify colours. There remain two possibilities: either individual variation is greater than the modest material available to me suggests, or there is, within Sumba, some geographical variation.

Nominate *M. j. javanica* of Java (also southern Borneo and Bali, from where I have not seen material) is well-differentiated from *M. j. parva*: the feather edgings of the upper parts, including the wings, are much browner, not greyish, and the whole under surface is buffy. In *M. j. parva*, the throat and the lower abdomen are creamy white, and a pale buffy colour is confined to the breast and flanks. There is also a difference in measurements, *javanica* being a little larger, especially the bill, which is not so much longer as thicker, the mandible deeper.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Flores (*M. j. parva*)					
5 ♂	70-72	42-47	19.2-21.3	12-14	11-11.5
	(70.6)	(44.6)	(20.5)	(13.2)	(11.1)
Sumba (*M. j. parva*)					
♂	72	45	21	14.6	11.9

♀	69	43	21.2	14	11.5
2 (?)	72, 72	43, 45½	21, 21.6	13.8, 15	10.9, 12.2
Sumbawa (*M. j. parva*)					
♂	69	44	19.8	13	10.3
Western Java (*M. j. javanica*)					
10 ♂	73-77	42-49	22-24	13.5-16.2	11-13.8
	(75.0)	(44.6)	(23.2)	(15.2)	(12.3)

White & Bruce (1986: 297) have included Lombok into the range of nominate *M. j. javanica*. This was obviously based on Mayr (1944a: 154), who had a single specimen that he considered to agree better with *javanica* than with *parva*. As no measurements of either wing or bill are provided, this identification required confirmation. This was provided by Mrs LeCroy (in litt., 18.iii.1996): "The Lombok specimen of *Mirafra javanica* is identified in our collection as *parva* and seems to agree with that race. The measurements I made are as follows: wing 73, tail, 46, tarsus 22, exposed bill 12, entire culmen 14.5, bill depth at front of nares 6". Although the measurements by themselves are not quite conclusive, Mrs LeCroy's opinion that the specimen is *parva* should be accepted.

No material of *M. j. timorensis* from Timor (Dilli) and Savu has been available, so that for its characters I must refer to Mayr (1944a: 154). If the measurements taken by Mayr are comparable, *timorensis*, with wing 8 ♂ 72-77 (73.9) mm, 4 ♀ 69-73 (71.4) mm, is also larger than *parva*. Further, it is of interest to mention weights here. Sumba: ♂ 17.3, ♀ 17.8, 2 (?) 18.7, 18.8 g. Sumbawa: ♂ 16.5 g. In contrast, in a large series (27 ♂, 26 ♀, 3 (?)) of *M. javanica* subsp. from northern and north-western Australia (Western Australia and Northern Territory), I found weights of 19.2-26.6 g, the minimum being above the maximum of *parva*. This confirms that *parva* is not close to Australian birds.

Hirundo rustica gutturalis Scopoli

Hirundo (*gutturalis*) Scopoli, 1786, Del. Flor. Faun. Insubr. 2: 96 - nova Guiana (error!) = Antigua, Panay.

Collector.— Weber (2).
Material.— (?), skeleton, xii.1888, Maumeri (Weber, RMNH cat. no. c, cf. van Oort, 1907: 207).

Hirundo tahitica javanica Sparrman

Hirundo javanica Sparrman, 1789, Mus. Carlsonianum, fasc. 4, no. 3, pl. 100 – Java (reference not verified).

Collectors.— Weber (3, two of which in alcohol), Rensch (4), Verheijen (eggs only).
Material.— ♂ ad., xii.1888, Sikka (Weber, RMNH cat. no. 42).
Eggs: c/4, 8.xii.1957, Nanga pandu (RMNH no. 70684). The eggs are creamy white with dark purplish-brown spots, concentrated around the blunt end.

Measurements and weights:	RMNH no. 70684	15.4 × 11.9	0.0616
		16.6 × 12.5	0.0713
		18.0 × 13.3	0.084
		18.7 × 12.9	-

Notes.— Traditionally, the Lesser Sunda Islands have been included into the range of *H. t. frontalis*, but Hoogerwerf (1965: 251) concluded that birds from these islands

belong to *H. t. javanica.* My own observations support Hoogerwerf (cf. Mees, 1975b: 129). Hoogerwerf also reviewed the question of the validity of *H. t. frontalis*, a matter that remains to be cleared up. Hoogerwerf cautiously suggested that *frontalis* might be darker on the underparts. Curiously, this is the opposite of what Mayr (in Stresemann, 1940a: 131-132) found: "New Guinea birds have very pale and uniform colored bellies". I cannot confirm either of these opinions, to me the two subspecies seem identical in plumage, but *frontalis* averages a little larger.

An explanation for the contradictory statements of Hoogerwerf and Mayr is provided by Schodde & Mason (1999: 667-668), who note the occurrence of pale-bellied populations in southern New Guinea, sufficiantly differentiated from *frontalis* to be designated by name: *H. t. albescens*. It is likely that the specimens compared by Mayr belonged mainly to this subspecies. No material from southern New Guinea has been available to me and it is unlikely that any was seen by Hoogerwerf.

Cecropis striolata striolata (Schlegel)

Hirundo striolata Schlegel, 1844, Krit. Übers. Europ. Vögel: 42 – Java.
Hirundo daurica rothschildiana Rensch, 1931, Mitt. Zool. Mus. Berlin 17: 550 – Mborong, Flores.

Collectors.— Allen, Everett (1), Rensch (1), Sutter (1), Verheijen (3, MCZ), Verheijen/Schmutz.
Material.— (?) juv., 8.iii.1971, Maro-Kama, Kisol, 50 m (Verheijen, RMNH no. 66154); ♂ juv., 9.iii.1971, Maro-Kama, Kisol, 50 m (Verheijen, RMNH no. 66155); ♂, 3.xi.1971, Waé Radja, 20 m (Schmutz, RMNH no. 85323).
Eggs: 33 clutches of 1 (11 ×), 2 (7 ×), 3 (14 ×) and 4 (1 ×) eggs each, collected in the months November (22) and December (10), and one undated, from Mataloko, Méngé and Potjong (RMNH nos. 70685-70717). The eggs are elongated, plain white, without gloss.

Some measurements and weights:	RMNH no. 70712	22.0 × 14.6	0.1212
		22.4 × 14.6	0.1198
		22.6 × 14.5	0.1198
	RMNH no. 70713	22.3 × 15.2	0.1417
		22.6 × 15.4	0.1401
		22.6 × 15.5	0.1374
		23.0 × 15.1	0.1322

Verheijen (1964) gave as an explanation for the very short breeding season apparent from the above data, that this species, "which likes to collect nesting material from rain pools, obviously prefers the beginning of the rainy season". It is not so obvious to me, why it should not be able to collect nesting material and breed at the end of the rainy season, in line with most other breeding birds, when certainly there would be no shortage of drying mud.

Notes.— For rejection of the subspecies *rothschildiana*, cf. Vaurie (1951). With only one adult bird from Flores available, I cannot add much, but the comparative measurements, given below, show that it falls entirely within the range of variation of ten birds of the same sex from Java. The subspecies *rothschildiana* was separated by Rensch exclusively on the basis of supposed small size. In all birds, the tail-measurements are minimum measurements, as the slender tips of the outer rectrices are usually worn or damaged.

Usually, Temminck & Schlegel (1847: 33) are cited as authors of *Hirundo striolata*, but fortunately Schlegel's description, cited above, has priority (cf. Hartert, 1922; Mees, 1971b: 238). The reason why I call this fortunate, is that Rüppell (1845: 18, Taf. 6) described a *Cecropis striolata* from Africa, which according to a footnote added by himself, is identical with *C. a. abyssinica* (Guérin-Méneville). In spite of the footnote, I believe *Cecropis striolata* Rüppell to have been validly described (not merely cited in the synonymy). Boie (1844: col. 174, 176) cites both names, *Cecropis striolata* Boie and *Cecropis striolata* Rüppell, but fortunately, both are nomina nuda here.

Not a nomen nudum is *Acanthylis coracina* Boie (1844: col. 167). It is the nomenclaturally correct name for the species currently known as *Chaetura leucopygialis* (Blyth, 1849), with the junior synonym *Acanthylis coracina* Bonaparte, 1850.

Measurements:		wing	tail	tarsus	entire culmen	exposed culmen
Flores	♂	125	90	14½	12	8.7
	♂ juv.	115	67	13	11	7
	(?) juv.	116	66	15	10½	7
Java	10 ♂	123-129	90-101	14.3-16	11-13	7.8-8.9
		(126.6)	(95.5)	(15.2)	(12.4)	(8.4)

Petrochelidon nigricans timoriensis Sharpe

Petrochelidon timoriensis Sharpe, 1885, Cat. Birds Brit. Mus. 10: 192 – Timor.

Collector.— Allen (1).
Material.— (?), 1862, Flores (Allen, BM no. 88.7.12.352).

Notes.— The first to record this species from Flores was Wallace (1864: 485), in a bare list. Sharpe's (1885) inclusion of Flores into the range of this subspecies was a guess, as he had not seen material. Later he wrote: "Mr Wallace... records it as occurring in Flores; but we have never seen a specimen from the last-mentioned island, nor was there one in Mr Wallace's collection when it passed into the hands of the Museum" (Sharpe & Wyatt, 1887: (529)). This was followed by Hellmayr's (1914: 64) remark: "Wallace gibt diese Schwalbe auch für Flores an, doch liegen keine Belegstücke von dieser Insel vor". Rensch (1931a) did not include the species in the avifauna of Flores, but White (1936) discovered the above specimen in the BM, where it was received with the Tweeddale collection in 1888, the year after Sharpe wrote, and this record has been accepted by Peters (1960: 119). Later, White (in White & Bruce, 1986) thought that the specimen might be mislabelled. I have examined the specimen, that has an original Wallace label, with pre-printed the first three digits of the year: 186, to which in Allen's hand is added a 2, as well as the locality Flores. My reasons for acceptance of this record are given in the introduction.

Measurements:		wing	tail	moult
Flores	(?)	92	42	no
Timor	(?)	93	38	heavy, wings and tail
	(?)	94	41	no

Motacilla flava simillima Hartert

Motacilla flava simillima Hartert, 1910, Vögel paläarkt. Fauna I: 289 – Kamtschatka.

Collectors.— Allen (at least 1, cf. Sharpe, 1885: 520; listed as *Motacilla flavescens* by Wallace, 1864: 485), Weber (1), de Jong (1).
Material.— None.

Notes.— I have not examined material from Flores, but the bird collected by de Jong was identified by Rensch (1931b: 399) and Voous (1950: 651) as *M. f. simillima*, which is the commonest of the several subspecies wintering in the Indo-Australian region.

Motacilla caspica subsp.

Collectors.— Colfs, Everett, Verheijen.
Material.— (?), iv.1880, West Flores (Colfs, RMNH without number); (?), 4.xi.1969, Ruteng (Verheijen, RMNH no. 65399).

Notes.— In its huge range across Eurasia, from the British Islands to Japan, this species shows only minor geographic variation, mainly a clinal decrease in tail-length from West to East. The recognition and delineation of subspecies is difficult and often somewhat arbitrary.

Earlier in last century, birds inhabiting the eastern part of the range went under the name *melanope*, and individuals wintering in the Indo-Australian region were usually assigned to this subspecies. Then Vaurie (1957) revised the species; he suppressed *melanope* as a synonym of nominate "*cinerea*" but accepted a subspecies *M. c. robusta* from north-eastern Asia and Japan. This is the subspecies one would expect to be the commonest, if not the sole, winter visitor to the Lesser Sunda Islands. Van Marle & Voous (1988: 193) and Dickinson et al. (1991: 364) placed all records from, respectively, Sumatra and the Philippines, in *robusta*. As far as I can make out, this was done without renewed investigation. It might be argued that the Flores specimens are *robusta*, and their measurements (rather short tails) do not contradict this. However, disagreement over the subspecific classification continues. Some authors would not recognize any subspecies on the Eurasian mainland and Japan, others would suppress *robusta* and re-instate *melanope* for birds from eastern Asia, and finally, some would recognize both *melanope* and *robusta* as valid subspecies (Roselaar in Cramp, 1988: 453). One can agree with Mauersberger (1983: 61) about "die Revisionsbedürftigkeit der bisherigen Gliederungen".

It is generally known that for this species the name *Motacilla Cinerea*, published in an obscure anonymous pamphlet ascribed to Tunstall, has been validated (ICZN Opinion 882). Peculiarly, neither in this Opinion, nor in the discussion preceding it, has it been pointed out that *M. Cinerea* Tunstall is a nomen nudum, not validated by being provided with English and French vernacular names [cf. ICZN, 1985: art. 12 (c)]. The remark above the list of species: "Nomina....Gallica verd ex ornithologia Brissonii plerumque decerpta sunt", is too vague to be construed as an indication.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen	hind claw
(?)	80	79+	20	15+	12.8+	8.1
(?)	80	89	18.8	16.2	12.9	6.7

Anthus novaeseelandiae albidus Stresemann

Anthus richardi albidus Stresemann, 1912, Novit. Zool. 19: 316 – Süd-Flores.

Collectors.— Everett (3), Rensch (4), Verheijen (5, MCZ), Verheijen/Schmutz.
Material.— ♀, 1.vii.1969, Tjumbi, Rahong (Verheijen, RMNH no. 81418); ♀, 8.viii.1969, Ruteng (Verheijen, RMNH no. 65392); ♀, 8.iii.1971, Maro-Kama, south coast (Verheijen, RMNH no. 85086); ♀, 12.x.1971, Langkas (Verheijen, RMNH no. 85085); ♂, 28.vi.1977, Lumu (Verheijen, RMNH no. 81419).
Eggs: 37 clutches of 1 (8 ×), 2 (23 ×) and 3 (6 ×) eggs, collected in the months January (1), February (2), May (1), June (4), July (3), August (4), September (7), October (10), and November (4), and one undated (RMNH nos. 70718-70752, 73511, 73512). The eggs are greyish white, with irregularly-shaped dull-brown primary spots and light grey secondary spots.

Some measurements and weights:	RMNH no. 70719	21.6 × 15.9	0.1536
		21.8 × 15.7	0.1595
	RMNH no. 70720	20.6 × 15.6	0.1607
		21.5 × 15.5	0.151
	RMNH no. 70723	21.6 × 15.9	0.1433
		22.3 × 16.0	0.1521
	RMNH no. 70724	21.0 × 15.0	0.1496
		21.6 × 14.7	0.1371
		22.0 × 15.2	0.1564
	RMNH no. 70746	21.3 × 16.2	0.1569
		22.0 × 15.9	0.1566
	RMNH no. 70748	19.9 × 14.9	0.1378
		20.0 × 15.1	0.1365
	Eggs of *A. n. medius* from Ndao near Roti, for comparison (see notes):		
	RMNH no. 76720	23.0 × 15.8	0.153
		23.2 × 15.6	0.1533
		23.6 × 16.0	-
	RMNH no. 76721	23.6 × 15.6	0.1486
	RMNH no. 76722	22.8 × 16.0	0.1625
		23.2 × 16.0	0.161
		23.3 × 15.7	0.16

Notes.— Compared with a small series of *A. n. medius* from the islet of Dao or Ndao near Roti (previously recorded by Mees, 1975b: 129), the present specimens are conspicuously white below and can be separated at a glance.

Verheijen (1976: 14) observed that eggs of the subspecies *A. n. medius* from Ndao were larger than eggs of *A. n. albidus* from Flores and of *A. n. malayensis* from Java. It seemed an interesting point, and therefore I re-measured the eggs from Ndao, and found their large size confirmed, although the weights hardly differ. The most obvious reason for the differences would be that *A. n. medius* is a larger subspecies than *A. n. albidus*, but the measurements I took from the five Ndao females, show them to be practically identical in size (as expressed by wing-length) with specimens of the same sex

from Flores. Therefore, the difference remains unexplained, and intriguing.

It was about time for somebody to take the axe to the overexpanded species *A. novaeseelandiae*, and Haffer (in Glutz, 1985: 523-525) has done this with gusto, with the creation of five species out of one. In this concept, birds from the Greater and Lesser Sunda Islands are included in the species *A. rufulus*, ranging westward to India. *A. novaeseelandiae* is confined to New Zealand and its outlying islands, and Australia is inhabited by a separate species *A. australis*. Haffer's discussion is centred on the African and Palaearctic populations and he provides hardly any documentation for the proposed split *rufulus/australis/novaeseelandiae*. To me, the forms *medius* and *albidus* look very close to *australis*. Admittedly, at the root of the problem of classification in *Anthus*, is that so many perfectly good species resemble each other closely. Nevertheless, I feel justified in retaining *australis* and the *rufulus* group as subspecies of *A. novaeseelandiae,* until more concrete arguments for their specific separation may be brought forward. Other authors have been reluctant to accept Haffer's proposals.

Measurements:		wing	tail	tarsus culmen	entire culmen	exposed claw	hind
Flores (*A. n. albidus*)	♂	80	59	27	17.6	14	9.8
	4 ♀	76-78	53-55	26-26.2	17-17.8	13.6-15	9.6-11
		(77.0)	(53.8)	(26.1)	(17.3)	(14.0)	(10.1)
Sumba (*A. n. albidus*)	[♂]	83	62	26	18.3	14	9.6
	♀	77	55½	25	17	13	9.5
Ndao near Roti (*A. n. medius*)							
	5 ♀	77-78	50-54	24-25	16-16.7	13-14	-
		(77.4)	(51.9)	(24.7)	(16.5)	(13.2)	-

Anthus gustavi Swinhoe

Anthus gustavi Swinhoe, 1863, Proc. Zool. Soc. Lond.: 90 – the island of Amoy.

Collector.— Everett (2).
Material.— None.

Notes.— For a history of the discovery of this species, and a discussion of its synonymy and of specimens in the RMNH, see Mees (1990). It seems to be a not very common winter visitor to the Lesser Sunda Islands, where otherwise it has been recorded from Timor (♂, 1861, near Dilli, collected by Wallace, cf. Sharpe, 1885: 614) and Sumba (one specimen, December 1896, collected by Everett, cf. Hartert, 1898d: 468).

Coracina novaehollandiae floris (Sharpe)

Artamides floris Sharpe, 1879, Cat. Birds Brit. Mus. 4: 14 – Flores.

Collectors.— Semmelink, Allen, Weber, Everett, Rensch (7), de Jong (1), Verheijen (1, MCZ), Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 2); ♂, xi.1888, Reo (Weber, RMNH cat. no. 5); ♂, 22.vi.1969, Nisar, 180 m (Schmutz, RMNH no. 81062); ♂, ca. viii.1969, Nunang, 650 m (Schmutz, RMNH no. 85117); ♀, 25.v.1972, Nisar, 50 m, in *Zizyphus*-Savanna (Schmutz, RMNH no. 85116).
Eggs (figs 15a, 15aa): c/1, 2.v.1957, Poéng (RMNH no. 70753); c/2, 12.vi.1962, Mataloko (RMNH no. 70754); c/2, 16.v.1962, Mataloko (RMNH no. 70755); c/2, 1.vi.1962, Mataloko (RMNH no. 70756); c/1, 19.vi.1962, Mataloko (RMNH no. 70757).

Measurements and weights:	RMNH no. 70753	31.7 × 23.2	0.5297
	RMNH no. 70754	31.3 × 22.4	damaged
		33.4 × 23.4	
	RMNH no. 70755	34.6 × 22.4	0.4832
		34.9 × 22.2	0.436
	RMNH no. 70756	34.1 × 21.9	0.4562
		34.5 × 22.2	0.4656
	RMNH no. 70757	33.0 × 23.4	0.5275

Notes.— The species *Coracina novaehollandiae* as defined in most recent literature, consists of a mosaic pattern of well-differentiated forms, which replace each other geographically (on different islands), ranging from continental south–east Asia and Taiwan, to New Guinea, Australia and Tasmania.

Rensch (1931a: 564-565) drew attention, within this conglomerate, to the relatively shorter tail, and other characters of *C. javensis*, and also of *C. personata*, compared with Australian *C. novaehollandiae*, concluding "daß eine Vereinigung zu einem Rassenkreise nicht möglich ist". Mayr (1944a: 142) found exactly the opposite: that *sumbensis* (of the *personata* relationship) has a relatively longer tail than Australian *C. novaehollandiae*. The same was recorded by Mason & McKean (1982) for *personata* (I do not understand the wing/tail ratios given by these authors) and the limited number of measurements taken by me indicates that this is also true for *floris*.

Rensch's conclusion has of course, in a period that strong expansion of the species concept was fashionable, not restrained later authors from doing exactly what Rensch considered impossible (cf. Ripley, 1941), and this was generally, although sometimes somewhat reluctantly, accepted for the following forty years (cf. Voous & van Marle, 1949). As a reaction against its over-expansion, the species concept is now going through a period of contraction, and this has not left the *C. novaehollandiae* agglomerate untouched. Mason & McKean (1982) have argued for the resurrection of *C. personata* from Timor as a separate species. Well may they be right, but it is a pity that they discussed just this one form, a segment in the middle of the agglomerate, and by their action left the rest, in particular all forms to the west of Timor, dangling, without any suggestion as to how these should be broken up into species. Even the difference between *personata* and *floris* is considerable, and might justify specific status for the latter in the new concept. Feeling not competent, at present, to complete the dismemberment of the agglomerate, I prefer, for the moment, to keep all these forms under *novaehollandiae* (compare the discussion of a similar problem in the *Pachycephala pectoralis/fulvotincta* complex).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	166	119	27	29	24
♂	169	121	26.8	27	23
♂	172	118	27.5	30.2	26.2
♀	166	123	27	30	24.7
(?)	164	120	27.8	28	24.5

Coracina novaehollandiae novaehollandiae (Gmelin)

[*Turdus*] *novae Hollandiae* Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 814 – terra van Diemen (ex Latham).
C[*orvus*] *melanops* Latham, 1801, Suppl. Ind. Orn.: xxiv – Nova Hollandia = Sydney.

Collectors.— Rensch (1), Schmutz.
Material.— ♂? im., ♀ ad., 24.v.1972, Nisar, *Zizyphus*-Savanna, 50 m (Schmutz, RMNH nos. 85114, 85115). Iris dark brown.

Notes.— Flores is the most north-westerly island whence this winter visitor from Australia has been recorded. Stein collected three on Sumba (cf. Mayr, 1944a: 142). On Timor it was found as early as 1828 by S. Müller (RMNH cat. no. 17), and by several later collectors. Verheijen obtained a specimen on the island of Dao or Ndao off Roti (cf. Mees, 1975b: 129; Verheijen, 1976: 14). [11])

The origin, within Australia, of these birds remains to be elucidated. One would expect them to be from Western Australia, but in the extreme south-western part of that state the species remains common throughout the winter, and there is no clear indication that it would be a partial migrant (there is no proof that it is not, though). Moreover, the birds continue to live in pairs in winter, and I have never seen any evidence of flocking. In the mid-western and north-western parts of Western Australia, on the other hand, there is considerable flocking in winter, and mixing of the subspecies "*melanops*" and *subpallida* in the breeding range of the latter, indicating extensive movements (cf. Mees, 1964c). In addition, birds from the South-West tend to be large in the wing and smallish in the bill, unlike the specimens from Flores (cf. Keast, 1958; Mees, 1961b: 111). The difference is only an average one and is of limited value; nevertheless, it gives some support to my opinion that the birds visiting Flores originate from the more arid parts of north-western Australia. Formerly (l. c.), I believed that migrants to the tropics had to come from the most southerly part of the range, but at the time I did not realise sufficiently that several species of large insectivorous birds leave northern Australia in the long dry season (the Australian winter). The fact that the subspecies *subpallida*, originating from mid-western Australia, has now also been found as a winter visitor, supports the assumption that migrants of *novaehollandiae* are from the same, or rather an adjacent part of that continent.

The question of whether continental Australia and Tasmania are inhabited by different subspecies (*melanops* and nominate *novaehollandiae*, respectively), as claimed by Keast (1958), has worried me ever since. Because of lack of adequate Tasmanian material, I hesitated to give a definite opinion (Mees, 1961b), and in subsequent publications continued to use the name *melanops* for Australian birds and birds I believed to be migrants from continental Australia, even until quite recently (cf. Mees, 1994: 31). Although I have still not been able to compare good material, I consider that a final stand in this matter is required now. The trivial average differences in measurements of wing and bill, given by Keast in support of the recognition of a separate Tasmanian subspecies, do not appear to be outside the range of variation found in the several continental

[11]) It might cause surprise that these two papers on the avifauna of Roti, both published in the "Zoologische Mededelingen", were not combined and published under joint authorship. This is because Verheijen's article was written first, and had been handed in for publication in "Ardea" before the collection was received in Leiden. Later, examining the material, I found so much of interest, that I decided on a supplementary paper, that duly appeared. After two years of deliberation, Verheijen's manuscript was returned by the editors as unsuitable for "Ardea", after which it was published, without further delay, in the "Zoologische Mededelingen".

populations, some of which were recognized by Keast as separate subspecies, but were united by me. In the thirty-five years that have passed, nobody else seems to have taken up the matter, although I have repeatedly drawn attention to the unsatisfactory state of affairs. I think it may now safely be concluded that such average differences as possibly exist between Tasmanian and mainland birds are insufficient for recognition in nomenclature. The consequence is that *melanops,* as hitherto recognised by me, becomes a synonym of nominate *novaehollandiae*. It means also that possible migrations of Tasmanian birds (they are even supposed to migrate as far as New Guinea), must be studied mainly by observation and ringing.

Addendum.— After a period of some 35 years of doubting and vainly waiting for a revision I finally decided to place *melanops* in the synonymy of nominate *novaehollandiae*. Since then a revision was published by Schodde & Mason (1999: 578-580). At first sight this seems to be a review, based on adequate material, for which I had been waiting so long. The authors recognise the Tasmanian form as distinct, but the comparative notes given to support this show that the differences between Tasmanian *novaehollandiae* and mainland *melanops* are at best trivial. In general size *melanops* is said to be "large to small" and *novaehollandiae* "medium"; the bill of the Tasmanian bird is said to be marginally smaller, without clear separation. Especially as, within the large mainland range, there is some geographical variation in bill size, Schodde & Mason's work actually confirms my opinion that the difference is too minor for expression in nomenclature.

Verhoeye & Holmes (1998: 35) refer to *C. novaehollandiae* as a common austral migrant; they also mention an observation on Komodo, a slight extension westward of its known winter range, suggesting that it also reaches eastern Sumbawa.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂? im.	185	126	28	30	24
♀ ad.	192	125	27½	31	25

Coracina novaehollandiae subpallida Mathews

Coracina novaehollandiae subpallida Mathews, 1912, Novit. Zool. 18: 326 – North-West Australia = Strelly [recte: Strelley] River (cf. Mathews, 1913: 193).

Collector.— Schmutz.

Material.— ♂ with small gonads, 25.v.1972, Nisar, 50 m (Schmutz, RMNH no. 85118), plumage very worn, especially the tail; no moult; lores and ear coverts black, but throat pale, hence an immature bird.

Notes.— This specimen provides the first reliable record of the subspecies *subpallida* from outside its breeding range, a point that requires some explanation. Although Mathews correctly described this subspecies as being characterized by its pale upper surface, he did not really have a good idea of its characters and range, as he included the Northern Territory into its range. A year later, he (Mathews, 1913: 193) repeated this range, and tentatively included *C. n. didima*, which he had described from Melville Island, in the synonymy of *subpallida*. The following year he confirmed this (Mathews, 1914a: 122). He further claimed that the birds were migratory on Melville Island, leaving in November

and returning in May. This suggests winter visitors from the South, but surely *C. novaehollandiae* is a breeding-bird on Melville Island. Having concluded that the whole North and North-West of Australia is inhabited by *subpallida*, it was logical that Mathews (1930: 534) assigned winter visitors to the Lesser Sunda Islands to this same subspecies. Subsequently, Ripley (1941b) commented: "All the forms are representative. There is one case of apparent overlapping from Timor to the Little Kei Islands, but it is now known that the specimens of the Australian race *subpallida*, found on these islands are winter visitors, not residents, as hinted by Hellmayr (1914)". Correct, but Hellmayr called these birds *melanops*, not *subpallida*. Mayr (1944a: 142) reverted to the name *didima* for winter visitors on Sumba: "*C. n. didima* (= *kühni* Hartert) differs from *melanops* only in its slightly paler color". He made no mention of *subpallida*. Peters & Mayr (1960: 171), presumably following Keast (1958), give *subpallida* its correct Australian breeding range ("Midwestern Australia from the Gascoyne to the DeGrey River"), but add: "wintering in the Lesser Sunda Islands and Kei Island". Mees (1964c) commented: "It may be that the subspecies does partially migrate to these islands, but I have not seen specimens, and the majority of individuals seems to stay in Australia". Later, I was informed that there is no extra-Australian material of *subpallida* in the AMNH (LeCroy, in litt., 17. vi.1974). Thus, all previous records of *subpallida* from the islands are due to Mathews's misidentification and must be rejected.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	187	129	29½	30½	24

Coracina dohertyi (Hartert)

Edoliosoma dohertyi Hartert, 1896, Novit. Zool. 3: 584 – Sumba.

Collectors.— Everett ("a series"), Rensch (3), Verheijen (1, MCZ), Schmutz.
Material.— ♂ ad., 31.vi.1971, Sésok, 800 m (Schmutz, RMNH no. 85029).
Eggs not certainly known.

Notes.— *Coracina dohertyi* was not previously represented in the RMNH collection. Yet, it cannot be particularly scarce on the two islands to which it is confined. On Flores, Everett obtained "a series" and Rensch three specimens. On Sumba, Stein collected no fewer than 16 specimens, and Sutter another 7.

Rensch (1931a: 566) wrote: "*E. dohertyi* ist durch die scharfe schwarzgraue Zeichnung so sehr von den Angehörigen des Rassenkreises *E. morio* geschieden, daß ich sie nicht zu einem einzigen Rassenkreise zusammenziehen möchte". Mayr (1944a: 142) agreed that *C. dohertyi*: "belongs undoubtedly to the *morio* assemblage", but also left it as a separate species. Unexpectedly, in view of the foregoing, Peters & Mayr (1960: 185) have placed it between *C. caerulescens* (a Philippine species) and the widely-distributed *C. tenuirostris*, and some distance away from *C. morio.*

With only a single specimen, and that a male, I am not in a position to speculate fruitfully about the affinities of this species with its peculiarly restricted distribution.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	127	92	25	25½	18.3

Lalage sueurii sueurii (Vieillot)

Turdus Suerii [sic] Vieillot, 1818, Nouv. Dict. Hist. Nat. 20: 270 – la Nouvelle-Hollande = Timor (cf. Pucheran, 1855: 352).

Collectors.— de Jong (1), Verheijen (3, MCZ), Verheijen (eggs), Schmutz (?).
Material.— Apparently no skins; eggs only.
Eggs (fig. 15b): c/3, 20.vi.1960, Palué (RMNH no. 70758); c/3, 28.vi.1960, Wodja, Palué (RMNH no. 70759); c/2, 29.vi.1960, Lai, Palué (RMNH no. 70760); c/2, 9.v.1960, Palué (RMNH no. 70761). The eggs are pale greenish, heavily spotted with more or less longitudinally-directed medium-brown primary markings, and less numerous light grey secondary markings. They do not differ significantly from eggs of *L. nigra*.

Measurements and weights of two clutches:	RMNH no. 70759	20.0 × 15.9	0.1472
		20.3 × 15.8	0.1453
		21.2 × 16.2	0.159
	RMNH no. 70760	21.2 × 16.3	0.1584
		21.7 × 16.3	0.1563

Hellebrekers & Hoogerwerf (1967: 86) did not know eggs of *L. sueurii* from Java. Kooiman collected eight clutches, labelled *Lalage* sp., of which the original data (locality and date) have become lost (RMNH nos. 23632-23639). Unfortunate as it is that the eggs are without data, all Kooiman's collecting was done in far eastern Java, where he obtained skins of *L. sueurii* at Klatakan and Dampar (cf. Mees, 1986: 86-87). It is a perfectly safe deduction that the eggs are from the same localities, and belong to *L. sueurii*. There is also a clutch of eggs from Ndao near Roti in the collection (c/2, 5.vi.1969, leg. Verheijen, RMNH no. 76725, cf. Verheijen, 1976: 15).

Notes.— On Flores, this species appears to be rather local in distribution. When Verheijen (1961) met with it on Palué, he remarked that he had never yet seen it in West Flores. From mainland Flores, only the specimen collected by De Jong at Laboean Badjo is known. As Rensch (1931a: 562) observed one near Endeh, and Schmutz (MS) has several records from the neighbourhood of Nanga-Lili, and between Nanga-Lili and Wae-Wako, it is likely to be more widely distributed around the coast.

Pericrocotus lansbergei Büttikofer

Pericrocotus Lansbergei Büttikofer, 1886, Notes Leyden Mus. 8: 155 – Bima (Sumbawa).

Collectors.— Everett (several), Rensch (3), de Jong (3), Schmutz (2).
Material.— ♀, 17.ii.1969, Nunang, 650 m (Schmutz, RMNH no. 81409); ♂ im., 8.ii.1972, Nggoang, 850 m (Schmutz, RMNH no. 85324).

Notes.— Presumably, *P. lansbergei* is a derivative of *P. cinnamomeus*.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂ im.	71	87	16.5	15	11
♀	70	88	17.7	14	11

Lanius cristatus superciliosus Latham

[*Lanius*] *superciliosus* Latham, 1801, Suppl. Ind. Orn.: xx – Java.

Collectors.— Weber (1), Everett (4), de Jong (2), Schmutz (1).
Material.— ♂, 20.x.1969, Nanga-Lili (Schmutz, RMNH no. 85216). Iris dark brown. Stomach contents remains of grasshoppers.
According to a manuscript list by Büttikofer, Weber's specimen, received in spirits (cf. Büttikofer, 1894: 299), was made into a study skin for the RMNH collection. I have been unable to find it, so that either the quality was insufficient and it has never been entered into the collection (most likely), or it has been given out in exchange.

Notes.— The fact that this species has been recorded by four collectors, one of whom, Everett, obtained four specimens, proves that Flores belongs to the normal winter range of this subspecies. There are also several records from Sumba, but I do not know of any from the islands to the east of Flores, or from Timor.

Brachypteryx montana floris Hartert

Brachypteryx floris Hartert, 1897, Novit. Zool. 4: 170 – At and above 3500 feet in South Flores.

Collectors.— Everett (4), Verheijen.
Material.— 2 ♂, 12.xi.1969, Nggolong Tedé, Ruteng, 1900 m (Verheijen, RMNH nos. 65381, 65382); ♂, ♀, 18.ix.1971, Potjo Gurung, Ruteng, 1700 m (Verheijen, RMNH nos. 85089, 85088); ♂, 31.iii.1973, mountain lake Rana-Ka (Verheijen, RMNH no. 85090). Iris brown, bill black, legs grey.

Notes.— This interesting endemic form appears to be known from very few specimens. Hartert (1897b: 516) recorded that Everett obtained only two pairs. The five specimens listed here seem to be the only ones obtained since.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
4 ♂	70-74	56-62	32.5-35	17.5-18.5	13.8-14
	(72.3)	(59.3)	(33.4)	(18.1)	(14.0)
♀	71	57	32.4	17.4	13.5

Saxicola caprata fruticola Horsfield

Saxicola fruticola Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 157 – Java.

Collectors.— Semmelink, Allen, Colfs, Weber, Everett, Rensch (4), de Jong (5), Verheijen (11, MCZ), Verheijen/Schmutz.
Material.— ♂, 1862, Larantoeka (Semmelink, RMNH cat. no. 10); 2 ♂, iv.1880, Flores (Colfs, RMNH cat. nos. 15, 16); ♀, v.1880, Flores (Colfs, RMNH cat. no. 17); skeleton, xii.1888, Maumeri (Weber, RMNH cat. c); 4 ♂, ♂ im., 12 ♀, 1 (?), 4 juv., 1968/1977, from various localities in Manggarai (Verheijen/Schmutz, RMNH nos. 59906-59917, 65384-65386, 65391, 66159, 81359, 85402-85404, 85411).
Eggs: 103 clutches, of c/1 (19 ×), c/2 (32 ×), c/3 (41 ×) and c/4 (11 ×) eggs, collected in the months April (1), July (1), August (18), September (31), October (38) and November (14), (RMNH nos. 70770-70871, 73513). The full data of the April clutch are: c/2, 29.vi.1954, Poéng (RMNH no. 73513); the clutch has an original label, with the month April written in full, so that there can be no confusion about the date. The clutch came to Leiden with the collection Coomans de Ruiter, and that may be the reason why it was not

listed by Verheijen (1964): when he wrote his article, this clutch was no longer in his possession. The clutch is important as being the only one in a series of over a hundred, collected outside the period July-November. The eggs are light greenish blue, lightly to moderately freckled with medium-brown spots, which tend to be closest together around the blunt end.

Some measurements and weights:	RMNH no. 70822	17.8 × 14.5	0.0969
		18.0 × 14.7	0.1117
		18.6 × 14.7	0.1113
	RMNH no. 70823	18.1 × 14.6	0.1099
		18.3 × 14.7	0.11
		18.6 × 14.6	0.1112
	RMNH no. 70826	15.7 × 13.8	0.0954
		16.8 × 14.4	0.0961
		17.7 × 14.3	0.1045
		17.9 × 14.7	0.1081
	RMNH no. 70827	20.2 × 15.4	0.1177
		20.9 × 15.8	0.1271

Some 10% of the nests were found parasitized by *Cacomantis variolosus* (cf. Ottow & Verheijen, 1969).

Notes.— There is a ruling that names ending with *-cola* have to be treated as masculine substantiva, unless from the original description it is apparent that an author regarded the name as feminine, in which case the feminine gender is retained (ICZN, 1985: art. 30); unfortunately, the issue is confused by the example given: "Compound Latin nouns ending in *-cola*, such as *Sylvicola*, are treated as masculine". This is a non sequitur, and suggests erroneously that names ending in *-cola* are always to be treated as masculine (cf. Mauersberger, 1983: 52). Naturally, I wrote to the Secretariat of the ICZN, pointing out this contradiction in the Code, and although my letter remained unacknowledged, I presume that it has been acted upon and the error has been corrected. *Saxicola* has usually been considered feminine, and that is correct. The genus was based on three species, in the combinations *S. Oenanthe, S. Rubetra* and *S. rubicola*: *Oenanthe* and *rubicola* are substantiva, but *rubetra* ("bramblebush-inhabiting" is a Latin adjectivum and decides the gender (Coomans de Ruiter et al., 1948: 41). As far as the name *Saxicola caprata fruticola* is concerned: *fruticola* is a masculine substantivum, so that it is not affected by the gender of its genus, but what about *caprata*? The name was introduced by Linnaeus (1766: 335), in the combination *Motacilla Caprata*, and was based on Brisson (1760: 442), who described the species from Luzon, and recorded as its local name there Maria-capra. Evidently, the name *Caprata* was derived in some way from this vernacular, although it is not clear how. The fact that Linnaeus, when introducing *Caprata,* gave it an initial capital, suggests that he regarded it as a substantivum, which means that its termination does not change with the gender of the genus.

The genus *Saxicola* contains several other species, the most widely distributed of which is at present universally known as *S. torquata* and its European subspecies as *S. torquata rubicola,* but the masculine version has sometimes been used earlier in the last century (for example by Stresemann, 1920: 171). Coomans de Ruiter et al. (1948: 42) regarded *rubicola*, and by inference *fruticola*, as an adjectivum, but Dr Kraak now supports the opinion that it is a substantivum.

Zoothera interpres (Temminck)

Turdus interpres Temminck, 1828, Recueil d'Ois. 2 (livr. 75): pl. 458 – à Java et à Sumatra.

Collectors.— Everett, de Jong (3), Verheijen/Schmutz (1).
Material.— ♂, 21.vii.1976, Poco Nernancang (Verheijen, RMNH no. 81455).
Eggs: Verheijen (1964: 199) records breeding in May; there are no eggs in his collection.

Notes.— Everett obtained "A series from S. Flores" (cf. Hartert, 1897b: 515) and de Jong collected three near Wai Sano (cf. Rensch, 1931b: 398). The facts that this species was not found in Flores by Rensch, and that I received but a single specimen, indicate that, although it is not rare locally, it is not generally distributed.

I agree with Junge (1938: 352) that: "The differences between *interpres* and *leucolaema* are large enough to regard *leucolaema* as a separate species". Therefore *Z. interpres* has no subspecies. It is surprising that in its comparatively large, and mostly insular, range, this species shows no geographical variation.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	104	58	27	20.3	16.5

Zoothera dohertyi (Hartert)

Geocichla dohertyi Hartert, 1896, Novit. Zool. 3: 555, pl. xi fig. 3 – Lombok.

Collectors.— Everett, Rensch (3), Verheijen (2, MCZ), Verheijen/Schmutz.
Material.— ♀, 21.xi.1969, Nggolong Tedé, 1900 m (Verheijen, RMNH no. 65368); ♀, 24.xii.1969, Todo (Verheijen, RMNH no. 65369); ? ♀ juv., 29.x.1970, Ruteng (Verheijen, RMNH no. 85035); ♂, 29.iii.1971, Lingko Laring Pongkor (Verheijen, RMNH no. 85033); ♀, 15.iii.1973, Nggolong Tedé (Verheijen, RMNH no. 85322); ♂, 29.iii.1973, Rana-Ka (Verheijen, RMNH no. 85034); ♂, 3.vi.1976, Ulu Ros (Verheijen, RMNH no. 81435); ♂, 23.vi.1976, Ulu Ros (Verheijen, RMNH no. 81436); ♂, 30.iii.1978, Ulu Wae Wua (Verheijen, RMNH no. 81454); ♂, 26.v.1978, Wae Rungget (Verheijen, RMNH no. 81320); ♂, 8.vi.1978, Wae Golo Lolo (Verheijen, RMNH no. 81437).
Eggs (fig. 15c): c/1, 27.vi.1954, Nilo (RMNH no. 70762); c/2, 19.v.1956, Mano (RMNH no. 70763). The eggs are creamish, heavily freckled with light brown; they resemble closely eggs of *Z. interpres* from Java, described by Hellebrekers & Hoogerwerf (1967), but are a little larger and heavier.

Measurements and weights:			
	RMNH no. 70762	25.9 × 19.2	0.2490
	RMNH no. 70763	26.8 × 19.1	0.2299

The second egg is too damaged for measuring and weighing

Notes.— This species is in measurements very similar to *Z. interpres*, but has a distinctly longer tail. Note the complete absence of a difference in size between the sexes. On the basis of a combination of measurements of his own material, and measurements previously published by Rensch, Mayr (1944a: 155) concluded that there is some geographical variation in size: "The population from Timor shows the largest measurements, those of Sumba and Sumbawa the smallest, while those of Lombok and Flores are intermediate". Of the postulated differences, I find only that of the Timor birds convincing. According to White & Bruce (1986: 333), the larger size of the Timor birds:

"may be due to their living at a high altitude: the species has only been found there on Mt. Mutis". The Timor birds were taken at 1600-2300 m. My series from Flores includes specimens collected at 1900 and 2200 m.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
7 ♂	103-108	65-73	30-32	20.5-22.7	16.5-18.7
	(105)	(69)	(30.9)	(21.5)	(17.6)
3 ♀	103-108	67-70	28.2-31	20.8-22	16-18
	(105)	(68.7)	(29.9)	(21.3)	(17)
♀? Juv.	102	64	31	21	17

Zoothera andromedae (Temminck)

Myiothera andromedae Temminck, 1826, Recueil d'Ois. 2 (livr. 66): pl. 392 – les îles de Java et de Sumatra (the figured type is from Java), restricted type locality W. Java (Kuroda).

Collectors.— Everett (4), Verheijen/Schmutz.
Material.— ♀, 2.xii.1969, Nggolong Tedé, Ruteng, 1900 m (Verheijen, RMNH no. 65367); ♂, 27.iii.1973, Danau Rana-Ka, 2200 m (Verheijen, RMNH no. 85032); ♀, 30.iii.1973, Danau Rana-Ka, 2200 m (Verheijen, RMNH no. 85031); ♂, 8.iii.1976, Ulu tuke' nikit (Schmutz, RMNH no. 97120). Iris brown, bill dark brown to horn-black, legs brown or light reddish.
Eggs (fig. 15d): c/2, 17.v.1960, Potjong (RMNH no. 70768); c/2, without data (RMNH no. 70769).

Measurements and weights:			
	RMNH no. 70768	29.1 × 19.4	0.2454
		29.3 × 19.0	0.2506
	RMNH no. 70769	27.4 × 20.6	0.2880
		28.1 × 21.1	0.2868

Notes.— The only previous record of this species from Flores is by Everett, whose specimens were obtained at a level of about 3500 feet (ca. 1050 m). On Flores, as on Java, this seems to be definitely a mountain bird. White's (in White & Bruce, 1986: 333) statement that this is a lowland species, certainly requires qualification. On Sumbawa Johnstone et al. (1996: 173) recorded *Z. andromedae* from altitudes of 450-850 m, lower than I would have expected; this indicates that its ecological requirements are far from well known.

Salvadori's (1892: 134) record of three specimens from the island of Engano is above suspicion. Nevertheless it is puzzling, for if it were a resident, as this record suggests, it is difficult to understand how the species was missed by Abbott in 1904 and by J.K. de Jong in 1937. Admittedly it is known to be skulking and not easily observed.

On the basis of the three males and only one female collected by Everett, Hartert (1897b: 515) concluded that females of this species are smaller than males: "The males have the wing 136 to 137 mm, the female only 125". My four specimens do not support this, but I cannot vouch for the reliability of their sexing. Therefore I have taken the wing-measurements of some specimens from other islands in the RMNH–collection, as follows. Sumatra, 2 ♂ 124, 128; Java 8 ♂ 122, 123, 124, 126, 126, 126, 127, 130; 14 ♀ 111, 117, 118, 119, 120, 120, 120, 121, 121, 122 (type), 123, 123, 124, 126. Timor ♂ 133. These figures confirm the existence of a moderate average difference between the sexes, which is worth recording in view of the absence of such a difference in *Z. dohertyi*.

In combination with the measurements published by Hartert, they also suggest that birds from the eastern part of the range are larger than birds from Sumatra and Java, thus conforming to the rule, formulated by Rensch, that from Java eastwards, birds tend to become larger in size.

It is tempting, but perhaps not rewarding, to speculate why this widely, but irregularly, distributed species should show so little indication of geographical variation.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
2 ♂	128, 133	73, 80	32, 39.5	31, 31.5	25, 28
2 ♀	124, 129	69, 64	30, 33	30, 31.8	25.5, 27

Turdus obscurus Gmelin

[*Turdus*] *obscurus* Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 816 – in Sibiriae silvis, ultra lacum Baical.

Collectors.— Colfs, Schmutz.
Material.— (?), (1880), Flores (Colfs, RMNH cat. no. 11); ♂, 2.vi.1976, Poco Nernancang, Ruteng, 1500 m (Schmutz, RMNH no. 85036); ♀, 12.vi.1976, same locality (Schmutz, RMNH no. 81317).

Notes.— It is a pity that the specimen collected by Colfs cannot be dated. These records suggest that the occurrence of *T. obscurus* on Flores is not exceptional.

Smythies (1968: 415, and still 1981: 309) states: "not yet recorded from Indonesian Borneo", but Nieuwenhuis collected a specimen on the upper Mahakam as early as November 1899 (RMNH cat. no. 15): this bird was recorded by Finsch (1901a: 176, and again 1905: 21, 126). In Java, the species had hitherto been recorded from the West only (cf. Dammerman, 1929: 57; Kuroda, 1933: 293), but four specimens collected by Bartels at Sikatok, Bagelen, Sindoro, 11-14.iii.1915, extend this to Central Java. In West Java, Bartels collected three specimens on the Pangerango (1.vi.1905, 28.xi.1910, 12.xii.1914), and a series of 50 at Tjibening, Djampang Tengah, all in the short period 13-19.ii.1909. I cannot judge whether Bartels had any particular reason for collecting so many specimens from what evidently was one large flock.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	128	83	30	22.8	16.6
♀	122	77	30	21.5	16
(?)	124	82	31	23	16

Pnoepyga pusilla everetti Rothschild

Pnoepyga everetti Rothschild, 1897, Novit. Zool. 4: 168 – South Flores... at elevations of about 3000 to 3500 feet.

Collectors.— Everett ("a series"), Rensch (5), Verheijen.
Material.— ♀, 28.iii.1973, near Danau Rana-Ka, 2200 m (Verheijen, RMNH no. 85221).
No eggs; the species is included in Verheijen's (1964: 199) list with a question mark.

Notes.— Rensch (1931a: 569) states: "Diese Rasse ist von der javanischen wohl nur durch etwas bedeutendere Grösse unterschieden". I cannot confirm this: a wing-length

of 52 mm is quite normal in females from Java, but the above specimen from Flores has a slightly longer and more slender bill than *P. p. rufa*, and the pileum is darker, blackish brown, not dark ferruginous-brown.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♀	52	-	20.5	14.8	12

Tesia everetti everetti (Hartert)

Orthnocichla everetti Hartert, 1897, Novit. Zool. 4: 170 – South Flores.

Collectors.— Everett ("a series"), Rensch (5), de Jong (5), Verheijen (9, MCZ), Verheijen/Schmutz.
Material.— (?), x.1896, South Flores (Everett, RMNH cat. no. 1, syntype); ♀, 18.xi.1967, Nggolong Tedé near Ruteng, 1900 m (Verheijen, RMNH no. 65436); ♂, 22.xi.1968, Ruteng (Verheijen, RMNH no. 59881); ♀, 7.xii.1968, Ruteng (Verheijen, RMNH no. 59882); ♀, 4.xi.1969, Ruteng (Verheijen, RMNH no. 65435); ♂, 14.iii.1973, Nggolong Tedé, 1900 m (Verheijen, RMNH no. 85213); (?) juv., 26.iii.1973, Danau Rana-Ka (Verheijen, RMNH no. 85214); ♂, 28.iii.1973, Danau Rana-Ka (Verheijen, RMNH no. 85215); ♀, 4.ii.1976, Ero (Verheijen, RMNH no. 81375); ♂, ♀, 24.vi.1976, Ulu Ros (Verheijen, RMNH nos. 81357, 81367). Iris brown or grey-brown, bill maxilla brownish black, mandible dirty white, inside of mouth orange-yellow, legs greyish flesh colour.
Eggs (fig. 15e): 22 clutches of one (6 ×) and two (16 ×) eggs collected in the months February (3), March (3), April (2), May (1), June (4), July (2), August (2), September (1), November (1), and December (2), and one not dated (RMNH nos. 70872-70893). The distribution of these records over the year, without any suggestion of a peak, is remarkable. Evidently, two is the normal clutch-size.

Some measurements and weights:			
	RMNH no. 70872	18.6 × 14.4	0.0900
	RMNH no. 70873	18.4 × 13.6	0.0926
		18.6 × 13.3	0.0842
	RMNH no. 70874	19.1 × 13.8	0.0950
	RMNH no. 70875	20.0 × 13.9	0.0915
		20.4 × 13.8	0.0926
	RMNH no. 70876	18.6 × 13.9	0.0859
	RMNH no. 70878	19.3 × 13.8	0.0922
			the second egg consists of broken pieces
	RMNH no. 70879	20.0 × 14.1	0.0928
		20.4 × 14.1	0.0947
	RMNH no. 70886	19.5 × 13.9	0.0999
		20.0 × 14.2	0.0963
	RMNH no. 70887	19.4 × 13.8	0.0888
		19.6 × 14.0	0.0980
	RMNH no. 70889	20.0 × 13.5	0.0924
		20.0 × 13.7	0.0901
	RMNH no. 70890	20.2 × 13.9	0.0957
		21.0 × 14.0	0.1025

Notes.— The species has a large vertical distribution. Rensch (1931a: 568) found it from sea-level (Endeh) to 1400 m. This is now increased to 2200 m (Rana-Ka).

There has been a notable diversity of opinions about the systematic position of this species. It was originally described as the second member of the previously monotypic genus *Orthnocichla.* In neither of his two early publications did Hartert (1897a, 1897b)

discuss this placement, and the reason is obvious: at that time he did not yet have material of *O. subulata*, the type species of the genus, so that only its description and geographical probability (*O. subulata* was described from Timor, near Flores) were considered. A year later, Hartert (1898b: 114) did receive material, on which he commented: "This *Orthnocichla* differs considerably from *O. everetti* Hart. of Flores in being very much smaller, the beak being narrower and more pointed, the wing shorter, legs smaller and lighter in colour, in having a very distinct buffy white superciliary line, which is not developed in *O. everetti*, and in its white breast, which is pale ashy grey in *O. everetti*. *O. whiteheadi* from Mount Kina Balu in Borneo differs in having a much darker, almost black crown, the back being much darker brown, the superciliary line rusty, sides of breast and flanks darker; under the superciliary stripe runs a blackish brown line from the eye to the neck, along the sides of the head. This line is not developed in *O. everetti* and *O. subulata*. While *O. whiteheadi* Sharpe is evidently a mountain bird, both *O. everetti* and *O. subulata* occur in the low country".

Only a few years later, Finsch (1901b: 212-215), had received a specimen of *O. everetti* (RMNH cat. no. 1), that he could compare with the type material of *O. subulata*. It is Finsch's merit to have realised that not *O. subulata*, but the species described as *Microura superciliaris*, at that time known as *Oligura superciliaris*, from West Java is the closest relative of *O. everetti*. He expressed this relationship by proposing a new genus, *Pseudoxenicus,* for these two species (*Pseudoxenicus*, because of their superficial resemblance to *Xenicus* of New Zealand).

Soon afterwards, it was observed that the Himalayan *Tesia cyaniventer* is close to *Microura superciliaris*, although Chasen (1935: 231), who held a very broad species-concept, is no longer followed in treating the latter as a subspecies of the former. As *Tesia* is the older generic name, it replaced *Pseudoxenicus.*

In this stage, *Orthnocichla* = *Pseudoxenicus everetti* was somehow forgotten, or left behind. Rensch (1931a: 568) must have been unaware of Finsch's work when he wrote in the discussion of *Orthnocichla everetti*: "*O. subulata* Shpe. von Timor und Babar (hier Rasse *advena* Hart.) ist so scharf differenziert, daß sie nicht mehr mit *everetti* zu einem Rassenkreis vereinigt werden kann. Noch ferner steht *C.* [meant is *O.*] *whiteheadi* Shpe. von N-Borneo". Evidently, he accepted that *O. subulata* and *O. everetti* are congeneric. Chasen (1935: 231 footnote 2) referred casually to "*T. subulata* of Timor and Flores", but gave no explanation.

Thus, it was left to Delacour (1942: 514) to give arguments for leading *O. everetti* into *Tesia*. He is, however, rather confused about it, beginning with: "In examining the short-tailed species (*C. whiteheadi* and *C. subulata*), from Borneo, Flores and Timor, usually referred to the genus *Orthocichla* [sic], it has occurred to me that they had been wrongly placed in, or near, the genus *Tesia*,.... I have therefore put them in the genus *Cettia* (subgenus *Urosphena*), of which they represent extremely short-tailed, long-tarsus adaptations". This sentence only makes sense when it is assumed that Delacour, like Chasen before him, regarded *O. everetti* as a subspecies of *O. subulata* (an error that may have inspired Watson to make the same error over forty years later). Yet, in the very next paragraph, Delacour defines the genus *Tesia*, concluding: "In my opinion the following species belong to the genus *Tesia* Hodgson, 1832: *T. cyaniventer*, *T. olivea* (India to Indo-China), *T. superciliaris* (Java) and *T. everetti* (Flores and Sumbawa)". A step forward was, that Delacour transferred *Tesia* to the Sylviidae, in the neighbourhood of

Cettia, from the Troglodytidae, where it was still placed by Chasen (1935: 231) and Hoogerwerf (1948a: 131).

Presumably on the basis of Delacour's revision, Mayr (1944a: 136) called the Timor species *Urosphena subulata*; note that he treated *Urosphena* as a genus, not as a subgenus of *Cettia.* Verheijen (1964: 199) followed Hartert and Rensch in keeping to the original binomen *Orthnocichla everetti*; the nomenclature he used was based on a list sent to him by Dr Mayr in 1957 (through a misprint, the author's names of *Pnoepyga pusilla everetti* and *Orthnocichla e. everetti* have become transposed in his list).

Next came Watson (in Watson et al., 1986a: 6), who, probably misled by Delacour's enigmatic passage quoted above, reduced *O. everetti* to a subspecies of *Urosphena subulata*, which is obviously ridiculous and only understandable when it is assumed that he had not personally examined and compared these species.

White (in White & Bruce, 1986: 338) had intended to follow Delacour in placing *O. everetti* in the genus *Tesia*, and retaining *O. subulata* in *Urosphena,* but Bruce, in consultation with the editors of Watson, finally decided to place *O. everetti* in *Urosphena,* although as a distinct species, not as a subspecies.

The last word is by King (1989), who again separated *O. everetti* and *O. subulata* generically, in the genera *Tesia* and *Urosphena* respectively.

Summarizing, it may be said that there are two lines of thought about the position of *O. everetti*. One is that it belongs to the same wave of colonisation as *O. subulata*, from which it has only subsequently differentiated, and which therefore is its closest relative. The other, that it represents a second, (later) wave of colonisation, derived from *Tesia superciliaris* of Java.

I support without hesitation the second opinion: morphologically *O. everetti* agrees with *T. superciliaris* in the basally broad, somewhat flattened bill, the very short tail, the long tarsus. *O. subulata*, on the other hand, has a more slender bill, not notably wider near its basis, a relatively longer tail and a shorter tarsus (see table of measurements).

In addition, the eggs of *O. everetti* are indistinguishable from those of *T. superciliaris*, in colour, as I found by direct comparison, and also in measurements and weights (com-

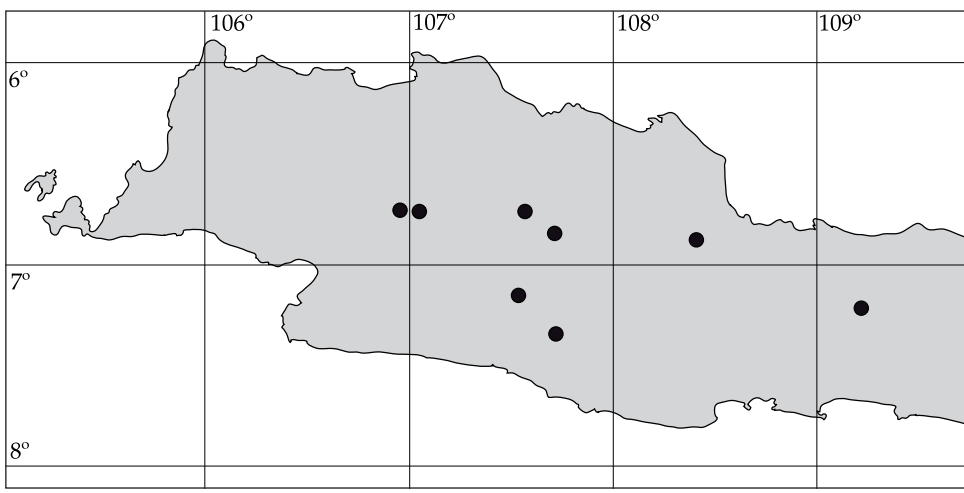

Fig. 10. *Tesia superciliaris*. Records from the mountains of Java.

pare the figures of *O. everetti*, given above, with those of *T. superciliaris* provided by Hellebrekers & Hoogerwerf, 1967: 118). This argument is weakened by the fact that the eggs of *O. subulata* remain unknown.

Against this is a point that has been given much weight by some authors: the inconspicuous brown coloration that *O. everetti* and *O. subulata* share, as opposed to the distinctive dull blackish and grey head markings of *T. superciliaris*. In this connection, it should be pointed out that in juvenile *T. superciliaris* the head markings are not yet developed, head and mantle are warm brown (without olive as in the adult) and are remarkably similar to the adult plumage of *T. everetti*. The underparts of both *T. superciliaris* and *T. everetti* are mostly light grey, whereas the underparts of *O. subulata* are whitish. Interesting is that a juvenile of *T. everetti* does hardly differ from the adults: its plumage is a little looser, and the undersurface a little darker grey. Compare this with the conspicuously distinctive juvenile plumage of *T. superciliaris* of which the upper parts have been described above. The underparts are also distinctive, brownish, in one case yellowish brown, as opposed to grey in the adult.

For some 20 years, *T. superciliaris* was regarded as a subspecies of *T. cyaniventer* of the Asiatic mainland (Robinson & Kloss, 1924: 287; Bartels & Stresemann, 1929: 129; Chasen, 1935: 231; Lonsain, 1941: 10; Hoogerwerf, 1948a: 131) but it was, so far as I am aware without explanation, restored to species status by Delacour (1942: 514; 1947: 271), and this has been accepted by later authors.

T. superciliaris, then, is an endemic species of Java. As regards its distribution in Java, Chasen (l. c.) and Delacour (l. c.) give it as Java, implying that it ranges throughout the mountains of the island. Kuroda (1933: 327) gave its range as: "Confined to West and Mid Java", but all the localities he listed are from West Java. Watson (in Watson et al., 1986a: 5): "Mountains of western and central Java".

Material in the RMNH collection is from the Pangerango (Bartels), Tankoeban Prahoe 1400-1600 m (F.C. van Heurn, v. Balgooy), summit Manglajan 1800 m (F.C. van Heurn), Tjinjiroewan (v.d. Weele), all in the western part of West Java, and Kali Goea, Slamat (Bartels) in the western part of Middle Java. It has further been recorded from Tjibodas-Gedeh (Hoogerwerf, 1949b: 2, 99); Papandajan (Stresemann, 1930) and Tjerimai (Kuroda, 1933). It ranges therefore throughout the mountains of West Java, and to Mt. Slamat in Middle Java (fig. 10). This range is almost the same as that of another endemic Javanese mountain-bird, *Garrulax rufifrons*, except that the latter is known from Mt. Karang in Bantam, whence *T. superciliaris* has not yet been recorded.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Flores (*Tesia everetti*)					
4 ♂	53-55½	16½-20	24-25	16-17	13-13.7
	(54.1)	(18.0)	(24.7)	(16.4)	(13.2)
5 ♀	49-53	15½-17	22.5-24.4	15.0-16.2	12.2-13
	(51.4)	(16.2)	(23.6)	(15.8)	(12.6)
(?)	51	16½	25.4	17.2	13
Java (*Tesia superciliaris*)					
10 ♂	49-52	13-17.5	24-25.5	13.7-16	11-12.8
	(50.6)	(15.3)	(25.1)	(15.0)	(11.9)
10 ♀	47-49.5	11-15	23-25	13.2-15	10-12
	(48.4)	(13.6)	(24.1)	(14.0)	(11.0)

Timor (*Orthnocichla subulata*) *)					
♂	53	24	19	14.3	12
♀	55	24½	18.2	14.5	12.2

*) Syntypes of *O. subulata* (RMNH cat. nos. 1, 2), collected in 1829. Sexing of this old material is unreliable.

Cisticola juncidis fuscicapilla Wallace

Cisticola fuscicapilla Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 489 – Timor, Flores. Type locality restricted to "Delli" (= Dilli), E. Timor, by Lynes (1930: 633).

Collectors.— Allen, Everett (3), Rensch (1), de Jong (2), Verheijen (8, MCZ), Verheijen/Schmutz.
Material.— ♂, 30.i.1976, Waé Rempo (Schmutz, RMNH no. 81421); (?), no data (Verheijen no. 1598, RMNH no. 81417).
Eggs: 48 clutches of c/1 (8 ×), c/2 (17 ×), c/3 (19 ×) and c/4 (4 ×), collected in the months January (1), February (5), March (7), April (14), May (12), June (5), July (1), and August (1), and two not dated (RMNH nos. 70978-71025).

Some measurements and weights:	RMNH no. 71017	14.7 × 11.2	0.0432
		14.8 × 11.2	0.0418
		14.8 × 11.2	0.0435
		15.0 × 11.2	0.0451
	RMNH no. 71018	15.3 × 11.2	0.0484
		15.4 × 11.0	0.0477
		15.8 × 11.1	0.0476
	RMNH no. 71019	15.4 × 11.7	0.0587
		15.5 × 11.7	0.0580

Notes.— The gender of names ending with *-cola* has been discussed on a previous page (p. 150). There is no need to change the traditionally feminine gender of *Cisticola* to masculine, as has been done in some recent works (e.g., Sibley & Monroe, 1990). David & Gosselin (2002: 38) argued that names ending in *-capilla/-capillus* are substantiva and therefore do not change with the gender of their genus. One of the examples given is *Cisticola fulvicapilla*, not to be changed to *fulvicapillus*, but they ignore the fact, mentioned above, that *Cisticola* has consistently been treated as feminine and that it should be possible to preserve this gender for it, which would make a discussion superfluous. I must add, however, that there are three species with ending *-capilla/-capillus* on the Dutch list, and therefore included in the work by Coomans de Ruiter et al. (1948) *Sylvia atricapilla, Regulus ignicapillus*, and *Parus atricapillus*, and that all three names are unequivocally stated to be Latin adjectiva. Surprisingly David & Gosselin (2000: 264), in a paper published only 15 months before the one just quoted, state that *atricapillus* is a classical Latin adjectivum. They discuss one case, clearly regarded as exceptional, in which *atricapilla* seems to have been used as a substantivum. Thus they agree here with Coomans de Ruiter et al. In their later paper the sudden change of stand remained unexplained. It seems wise to be reticent in the alteration of customary endings until classical scholars agree among themselves.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	50	36	20	12.6	9.9
(?)	49	36	19.8	11.8	9.8

Cisticola exilis lineocapilla Gould

Cysticola lineocapilla Gould, 1847, Proc. Zool. Soc. Lond. 15: 1 – Port Essington.

Collectors.— Allen (cf. Wallace, 1864: 485, s.n. *C. ruficeps*), Weber, Everett ("several specimens"), de Jong (1), Verheijen (1, MCZ), Verheijen.
Material.— ♂, 31.xii.1888, Kotting (Weber, Nr. 509a, RMNH); ♂, 7.x.1971, Gurung, Langkas, Rahong, 900 m (Verheijen, RMNH no. 85222).
Eggs (fig. 15f): 86 clutches, of c/1 (15 ×), c/2 (29 ×), c/3 (30 ×) and c/4 (12 ×), collected in the months January (1), February (4), March (11), April (21), May (27), June (15), July (2), September (1), November (1) and December (1), and two without date (RMNH nos. 70894-70977, 73514, 76582). The eggs are light blue, with rather coarse light to medium brown markings, moderately glossy.

Some measurements and weights:	RMNH no. 70957	16.1 × 11.3	0.049
		16.1 × 11.8	0.0525
	RMNH no. 70970	16.5 × 11.5	0.0536
		16.8 × 11.7	0.0541
		16.9 × 11.3	0.0545
		17.0 × 11.7	0.0578
	RMNH no, 70971	15.0 × 11.1	0.0443
		16.1 × 12.0	0.0526
			one egg damaged
	RMNH no. 70972	14.4 × 12.0	0.0558
		14.5 × 11.6	0.0550
		15.0 × 11.8	0.0573
		15.2 × 11.9	0.0562

Notes.— In his classical monograph, Admiral Lynes (1930) included all populations of *C. exilis* from Java, the Lesser Sunda Islands, and northern Australia, into one subspecies *lineocapilla*, but his material was very limited. Indeed, he was not even aware of the occurrence of the species in West Java, where it is common, as I pointed out many years ago (Mees, 1961b: 114). Mayr (1944a: 135) observed that birds from the Lesser Sunda Islands have the colour of the underparts more deeply washed with ochre than specimens from northern Australia (Melville Island), and possibly worthy of subspecific separation. My impression, gained from a superficial comparison of a series from West Java with only a few specimens from tropical Australia, is that the former are brighter, deeper in colour, than the latter. Note that the subspecies *rustica*, inhabiting the Moluccas and Sulawesi (Celebes), differs in a similar way from Australian *lineocapilla.*

The bird collected by Weber (31.xii) is in summer plumage, with a comparatively short tail, the one collected by Verheijen (7.x) in winter plumage, with a long tail. Considering that the main breeding takes place in the months March to June, it is unexpected to have a bird in summer plumage in December. In retrospect, I much regret not having encouraged the Fathers to collect more material of the two *Cisticola*-species, both of which are common on Flores. Material from all months of the year would be required, both for a study of geographical variation and for an understanding of seasonality in plumage variation.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	48	33½	20	13.4	10.8
♂	47	48	19.7	13.8	10.5

Orthotomus cucullatus everetti (Hartert)

Phyllergates everetti Hartert, 1897, Novit. Zool. 4: 517 – from 3000 and 4000 feet in S. Flores.

Collectors.— Everett (2), Rensch (1), Verheijen/Schmutz (12).
Material.— ♀?, 6.viii.1969, Ruteng (Verheijen, RMNH no. 65409); ♂, 10.xi.1969, Ruteng (Verheijen, RMNH no. 65410); ♂, 27.x.1970, Ruteng (Verheijen, RMNH no. 66193); ♂, 24.v.1971, Waé-Ntjuang, Langkas, 900 m (Verheijen, RMNH no. 85206); ♀, 12.vi.1971, Nantal, Rahong (Verheijen, RMNH no. 85207); ♂, 23. vi.1973, Waé-Ntjuang (Verheijen, RMNH no. 85208); ♀, 25.i.1976, Ulu Ros (Verheijen, RMNH no. 85209), 2 ♂, 4.ii.1976, Ero (Verheijen, RMNH nos. 85210, 85211); ♂, 16.ii.1976, Raé (Verheijen, RMNH no. 81410); ♀, 22.ii.1976, Ulu Ros (Verheijen, RMNH no. 85212); ♂, 26.ii.1976, Rae' (Schmutz, RMNH no. 97135).
Eggs (fig. 15g): c/3, 26.v.1958, Léwé (RMNH no. 375a); c/3, 29.iii.1960, Mataloko (RMNH no. 375b).

Measurements and weights:	RMNH no. 375a	16.1 × 11.9	0.0522
		16.4 × 12.2	0.0536
		16.9 × 12.0	0.0575
	RMNH no. 375b	14.4 × 12.3	0.0557
		15.2 × 12.4	0.0572
		15.5 × 12.5	0.0577

Notes. — As will be evident from the remarks given under the heading "Collectors", this endemic subspecies was previously known from very few specimens.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
8 ♂	47½-50	43½-47½	19.5-21	17-18.6	13-15
	(48.5)	(46)	(20.1)	(17.8)	(13.8)
4 ♀	43-49	41, 44	17.8-19.6	17-18	12.8-14.7
	(45.9)	(42.5)	(19.0)	(17.7)	(13.6)

Phylloscopus borealis xanthodryas (Swinhoe)

Phyllopneuste xanthodryas Swinhoe, 1863, Proc. Zool. Soc. Lond.: 296 – Amoy.
Phylloscopus borealis examinandus Stresemann, 1913, Novit. Zool. 20: 353 – Bali.

Collectors.— Allen (1 or more), Weber (2), Everett (at least 4), de Jong (2), Verheijen/Schmutz.
Material.— (?), 19/24.xii.1888, Kotting (Weber, RMNH, skinned from alcohol); (?, 20.xii.1969, Todo (Verheijen, RMNH no. 65432); 2 ♀, 22.xii.1969, Todo (Verheijen, RMNH nos. 65434, 65435); ♂, ♀, 14.vi.1973, Golo-Karot, Borong (Verheijen, RMNH nos. 69763, 69764).

Notes.— There is still controversy over the number of subspecies to be recognized in this species. When authorities cannot agree on the subspecies, their characters and distribution, in the breeding quarters, speculation about the identity of birds in their winter quarters appears to be even less meaningful. I note that Dickinson et al. (1991: 324-325) have no such qualms, and record as winter visitors to the Philippines no less than six subspecies, one of which an undescribed one, large, with a spotted breast. In the absence of any explanatory notes, one is left to wonder on what the specific and even the generic allocation of this form was based.

The subspecies *examinandus* was based on material from the Lesser Sunda Islands, including Flores. Later, this form was synonymized with *xanthodryas*, which, therefore, would be the correct subspecific name for the birds from this region. *P. b. xanthodryas* is

distinguishable from the nominate race by larger size, according to the literature. On the basis of published measurements (Stresemann, 1913b: 353, s.n. *examinandus*; Vaurie, 1959: 289), the specimens from Flores are, sex for sex, too large for nominate *borealis*, and belong to *xanthodryas*.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	71	49	19.4	14.0	11.0
3 ♀	67, 67, 67	44, 45, 45	18.6, 19.3, 19.5	13.9, 14.6, 14.7	10.0, 10.2, 10.2
2 (?)	66, 68	44, 44	19.8, 19.8	14.8, –	10.0, –

Phylloscopus presbytes floris (Hartert)

Acanthopneuste floris Hartert, 1898, Novit. Zool. 5: 114 – Flores.

Collectors.— Everett ("a series"), Rensch (5), Verheijen/Schmutz.
Material.— ♂, 2 ♀, 30.ix.1971, Hotju, Ruteng, 1500 m (Verheijen, RMNH nos. 85192, 85191, 85193); ♂, 21.xi.1971, Laréng Pongkor, 1100 m (Verheijen, RMNH no. 85194); [♂], 15.iii.1972, Nggolong-Tedé (Verheijen, RMNH no. 85195); ♀, 14.iii.1973, Nggolong-Tedé, 1900 m (RMNH no. 85197); ♀, 8.iii.1976, Ulu Tukenikit (RMNH no. 85199); [♂], 22.ii.1976, Ulu Ros (RMNH no. 81377); ♂, 22.iii.1976, Poco Nernancang (RMNH no. 85200); ♂, 24.iii.1976, Poco Nernancang (RMNH no. 85201); [♀], 29.iii.1976, Poco Nernancang (RMNH no. 85202); ♂, 5.vi.1976, Ulu Ros (RMNH no. 81412); ♀, 23.ix.1976, Poco Nernancang (RMNH no. 81415).
No eggs.

Notes.— On Flores, this species was taken by Everett at "elevations from 3000 and 3500 feet", which is 900-1050 m (cf. Hartert, 1897b: 525), by Rensch between 1200 and 1400 m, and by the fathers at 1100-1900 m, giving it a total vertical range of 900-1900 m. In contrast, nominate *P. p. presbytes* from Timor seems to have a greater vertical range: Everett obtained it at Atapupu, on the coast, Haniel at Lelogama (845 m) and Bonleo (1100 m), Stein at Noilmina (up to 300 m), Mutis (1800-2300 m) and Ramelan (2000-2300 m).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
7 ♂	57-60	40-43	20-21.5	12-14	9.8-10.7
	(58.7)	(41.9)	(20.8)	(13.0)	(10.1)
6 ♀	53-55	38-40	19.4-20.8	12.8-13.2	9.9-10.3
	(54.2)	(38.9)	(20.2)	(13.0)	(10.1)

Seicercus montis floris (Hartert)

Cryptolopha montis floris Hartert, 1897, Novit. Zool. 4: 171 – the hills of South Flores.

Collectors.— Everett ("a series"), Rensch (9), Verheijen/Schmutz.
Material.— ♀ with large gonads, 18.ix.1971, Potjo Gurung, Ruteng (RMNH no. 85190); ♀, 14.iii.1973, Nggolong-Tedé, ca. 1900 m (RMNH no. 85196); ♀, 15.iii.1973, Nggolong-Tedé, 1950 m (RMNH no. 85198); ♂, 8.iii.1976, Ulu Tuké Nikit (RMNH no. 81363); ♀, 18.iii.1976, Ulu Tuké Nikit (RMNH no. 81414); ♂, 27.vi.1976, Puar Lui (?) (RMNH no. 85203); ♂, ♀, 23.ix.1976, Poco Nernancang (RMNH nos. 85205, 85204).
No eggs.

Notes.— The re-appearance of this species on Flores and Timor, with the nearest known populations in Borneo (*S. m. montis*) and Sumatra (*S. m. inornata*) is surprising. For its distribution to make sense zoogeographically, the species ought to occur in Java. It would be tempting to look upon *S. grammiceps,* from the mountains of Java and Bali, as its geographical representative, but in Sumatra both species occur.

The Timor subspecies *paulinae* was partly based on larger size, compared with *floris,* viz., wing of 2 ♂ 53.5, 54.5, 3 ♀ 51, 51, 52 mm, against wing ♂ 50-52, ♀ 47-49 mm, in specimens of *floris* (Mayr, 1944a: 159). The present material of *floris* averages a little larger than that studied by Mayr, and shows that the size-difference between *floris* and *paulinae* is very slight.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
3 ♂	51-53	39-40	17-17.6	11-11.8	8-8.4
	(52.2)	(39.7)	(17.3)	(11.3)	(8.2)
5 ♀	48-50	37-38½	16-17	10-10.9	7-8.1
	(48.9)	(37.9)	(16.7)	(10.5)	(7.8)

Gerygone sulphurea sulphurea Wallace

Gerygone sulphurea Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 490 – Solor Island.
Acanthiza tenkatei Büttikofer, 1892, Notes Leyden Mus. 14: 195 – Flores.

Collectors.— Allen, ten Kate, Everett (1), Rensch (9), de Jong (3), Verheijen (2, MCZ), Verheijen/Schmutz.
Material. –(?), iv/v.1891, Flores (ten Kate, RMNH cat. no. 1, skinned from alcohol, holotype of *Acanthiza tenkatei*);
Eggs: 75 clutches of c/1 (30 ×), c/2 (33 ×) and c/3 (12 ×), collected in the months March (2), April (3), May (25), June (15), July (3), August (5), September (8), October (9) and five not dated (RMNH nos. 71026-71097, 73515, 76583). See also under *Chrysococcyx minutillus.* The eggs are glossless white, with brown spots concentrated around the blunt end.

Some measurements and weights:	RMNH no. 73515	16.7 × 12.2	0.0593
		17.0 × 12.1	0.0631
	RMNH no. 71085	16.6 × 11.4	0.0523
		16.8 × 11.2	0.0483
	RMNH no. 71086	16.7 × 11.5	0.0562
		16.7 × 11.6	0.0573
		16.8 × 11.7	0.0549

Notes.— For a discussion of geographical variation of this species, I refer to a previous publication (Mees, 1986: 130-133).

Ficedula westermanni hasselti (Finsch)

Muscicapa Hasselti Finsch (ex Temminck), 1898, Notes Leyden Mus. 20: 94 – Java.

Collectors.— Everett, Rensch (4), Verheijen/Schmutz.
Material.— (?)juv., 20.viii.1969, Ruteng (Verheijen, RMNH no. 65424); ♂, 19.ix.1971, Hotju, Ruteng, 1500 m (Verheijen, RMNH no. 85092); (?)juv., 12.xi.1971, Langkas (Verheijen, RMNH no. 85091); ♂, received January 1974, Lingko-Laréng Pingkor (Verheijen, RMNH no. 85093); ♀, 4.v.1976, Poco Nernancang (Verheijen, RMNH no. 81411); ♂, 3.vi.1976, Ulu Ros (Verheijen, RMNH no. 81413); ♂, 24.viii.1976, Poco Nernancang (Verheijen, RMNH no. 81311); ♂, 28.viii.1976, Poco Nernancang (Verheijen, RMNH no. 85094).

Notes.— In spite of revisional work by, amongst others, Mayr (1944a: 161-162) and Ripley (1952), such geographical variation as this bird shows is not much better understood now, than when Finsch (1898a) wrote his note, almost a century ago. The temptation to follow White & Bruce (1986: 358) in not admitting any subspecies has been strong, but in deference to the authors just mentioned I have retained the name *hasselti* for birds from Flores. *Ficedula westermanni* is a mountain bird, and a forest bird, moreover, very widely distributed in both mainland and islands, all ingredients for strong geographical variation, one would think.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
3 ♂	56½-60	39-40½	16	14.2	9.5 *)
	(57.7)	(39.8)			
♀	55	36	–	12.8	9

*) Tarsus and culmen from one specimen only.

Ficedula hyperythra vulcani (Robinson)

Dendrobiastes hyperythra vulcani Robinson, 1918, J. Fed. Malay St. Mus. 7: 235 – Tjibodas, slopes of the Gedeh Volcano, 4-6,000 feet, Western Java.

Collectors.— Everett, Rensch (2), Verheijen.
Material.— ♀, 12.xi.1969, Nggolong-Tedé, Ruteng, 1900 m (Verheijen, RMNH no. 65425); ♂, ♀, (?)juv., 8.iii.1973, Mt. Mbépé, Ruteng, ca. 1700 m (Verheijen, RMNH nos. 85111, 85112, 85113); ♂, ♀, 13.iii.1973, Mt. Nggolong-Tedé, 1950 m (Verheijen, RMNH nos. 85107, 85110); ♂, 28.iii.1973, Danau Rana-Ka (Verheijen, RMNH no. 85108); (?) im., 3.viii.1973, Mt. Tado-Walok, Ruteng, 1700 m (Verheijen, RMNH no. 85109); ♀, 8.iii.1976, Ulu Tuké Nikit (Verheijen, RMNH no. 81426). Iris brown; bill black, its basis below slate, legs greyish.
No eggs.

Notes.— In accord with all previous authors, I have been unable to find any difference between specimens from Flores and topotypical *F. h. vulcani*, of which a large series was available for comparison.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
3 ♂	59½-60½	37-41	18.3-19	12.5-13.2	8.6-9.8
	(60)	(39)	(18.8)	(12.9)	(9.1)
5 ♀	58-59	36-38	18-19.1	12-13.2	8.3-9.5
	(58.6)	(37)	(18.7)	(12.7)	(9)

Ficedula dumetoria dumetoria (Wallace)

Saxicola (?) *dumetoria* Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 490 – Lombock.

Collectors.— Allen, Everett, de Jong (1), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— ♂, 12.ix.1971, Tjeréng, 850 m (Schmutz, RMNH no. 85219); ♂, 21.x.1971, Rana Kulan, Biting, 400 m (Verheijen, RMNH no. 85220). Iris brown, bill black, legs bluish purple.

Notes.— This species "was met with not infrequently in the lowlands of South Flores by Everett" (Hartert, 1897b: 524). The specimen from Tjeréng was collected in primary forest.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
2 ♂	62, 64	42½, 44	19.0, 19.2	15, 15.9	11, 11.8

Culicicapa ceylonensis sejuncta Hartert

Culicicapa ceylonensis sejuncta Hartert, 1897, Novit. Zool. 4: 526 – South Flores.

Collectors.— Everett (number not given; apparently a series); de Jong (2), Schmutz (1).
Material.— ♂, 17.vii.1969, Paku, Mbelawang creek, 300 m (Schmutz, RMNH no. 81407).
Eggs (fig. 15h): c/1, 24.xi.1958, Montjok (RMNH no. 71098), 15.5 × 12.0 mm, weight 0.0495 g.

Notes.— The egg was identified with a query, and was also listed with a query in Verheijen's (1964: 199) table. I have compared it with eggs of *C. c. ceylonensis* from Java, with which it agrees so well, that there remains hardly any doubt.

The geographical variation of *C. ceylonensis* is interesting, in that over its huge continental and Sunda Shelf range, from Pakistan, Sri Lanka (Ceylon) and India, to Sumatra, Borneo, Palawan, Java and Bali, it shows hardly any geographical variation, whereas Flores and Sumba each have a reasonably well-differentiated subspecies. Incidentally, the type of the Sumba race, *C. c. connectens* is in Leiden (RMNH no. 14070), not in Berlin as Rensch (1931b: 378) wrote.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	56	42	12	13.6	10.0

Rhinomyias oscillans (Hartert)

Microeca oscillans Hartert, 1897, Novit. Zool. 4: 170 – At elevations from 3000 to 3500 feet in South Flores.

Collectors.— Everett, Rensch (7), Verheijen/Schmutz.
Material.— ♂, 29.iii.1971, Linko Lareng Pongkor, ca. 700 m (Verheijen, RMNH no. 85103); ♂, 21.xi.1971, Laréng (Verheijen, RMNH no. 85102); ♀, 20.ii.1976, Lingko Ros (Verheijen, RMNH no. 81440); ♂, 19.vi.1976, Ruteng, 1500 m (Schmutz, RMNH no. 85101); ♂, ♀, 30.vi.1976, Poco Nernancang (Verheijen, RMNH nos. 81452, 81445); ♂, 4.v.1976, Poco Nernancang (Verheijen, RMNH no. 81462); ♀, 16.vi.1976, Ulu Ros (Verheijen, RMNH no. 81405); ♂, 19.vii.1976, Potjo Nernancang (Verheijen, RMNH no. 85106); ♂, 2.ix.1976, Poco Nernancang (Verheijen, RMNH no. 85105); ♂, 25.ix.1976, Poco Nernancang (Verheijen, RMNH no. 85104); ♂, 29.vi.1978, Golo Léhot (Verheijen, RMNH no. 81447); (?), without label, received in 1983 (RMNH no. 81444). Iris brown, bill and legs black.

Notes.— This interesting endemic form, placed in the genus *Microeca* until Rensch (1931a: 559) transferred it to *Rhinomyias,* has been regarded as conspecific with *R. stresemanni*, an endemic form of Sumba. The relationship has been discussed repeatedly, e. g. Mayr (1944a: 143), who considered the matter a borderline case, and the judgement whether to treat the two as conspecific or as different species, as purely subjective. Vaurie (1952: 15-16) enumerated the not inconsiderable differences in plumage and measurements between the two forms. Besides, *R. oscillans* is an inhabitant of mountain forest at ca. 900-1500 m, whereas *R. stresemanni* is a lowland bird, of light forest and more open habitat. From this, one would almost expect the conclusion that they are different species, but surprisingly, Vaurie does not further evaluate the differences, and without

explanation lists *R. stresemanni* as a subspecies of *R. oscillans*. This has been followed by later authors, such as White & Bruce (1986: 353). My own conclusion, influenced by the current, narrower, species concept, is the opposite: although there is an evident relationship between them, I would regard *R. stresemanni* and *R. oscillans* as different species. Whether these species have originally reached the Lesser Sunda Islands from Java and Bali, or from Sulawesi (Celebes), is a question that cannot be answered. Vaurie (1952: 6) placed *R. oscillans* (with *R. stresemanni*) remote from all its congeners, with the sole comment: "This species consists of two well-marked races".

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
9 ♂	74½-80	52-59	16-18	14.8-16.2	10-12
	(76.8)	(55.6)	(16.9)	(15.2)	(11.2)
3 ♀	76-78	53-54	17.7-18	15-16	12
	(77)	(53.7)	(17.8)	(15.3)	(12.0)
(?)	77	56	16	15	11.7

Rhipidura diluta diluta Wallace

Rhipidura diluta Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 491 – Flores.

Collectors.— Allen (several specimens, cf. Warren & Harrison, 1971: 149-150), Colfs (1), Weber (2), Everett ("a fine series"), Rensch (7), de Jong (1), Verheijen/Schmutz.

Material.— (?), 1880 (Colfs, RMNH cat. no. 1); 2. xii.1888, Maumeri (Weber, RMNH cat. nos. 2, 3); ♂, 20.v.1969, Wae Laci, 50 m (Verheijen, RMNH no. 81428); ♂, 20.xi.1971, Laréng, Pongkor (Verheijen, RMNH no. 85097); ♂, ♀, 21.xi.1971, Laréng, Pongkor (Verheijen, RMNH nos. 85096, 85099); ♂, 14. iii.1973, Mt. Nggolong-Tedé, Ruteng, 1900-1950 m (Verheijen, RMNH no. 85217); ♂, ♀, 5.i.1976, Puar Léwé (Schmutz, RMNH nos. 85098, 81425); (?), 20.iii.1976, Ulu Tuké Nikit (Verheijen/Schmutz, RMNH no. 81423); ♂ juv., 31.iii.1976, Puar Lui (Schmutz, RMNH no. 85095). Iris brown, bill and legs black.

Eggs: c/2, 6.vi.1962, Mataloko (RMNH no. 71114). This clutch was identified as *R. rufifrons*, and an oblique reference to it, under that name, was made by Verheijen (1964: 194). The combination of the unusual locality (1000 m), the fact that neither of the Fathers has seen *R. rufifrons* on mainland Flores, the slightly larger size and greater weights of these eggs, compared with authentic eggs of *R. rufifrons semicollaris* from Palué, makes me confident of the re-identification. In colour and pattern, there is no difference.

The four clutches recorded by Verheijen (1964: 199) under *R. diluta*, were obviously misidentified. They will be discussed below.

Measurements and weights:	RMNH no. 71114	17.0 × 13.3	0.0828
		17.7 × 13.5	0.0871

Notes.— Four clutches identified as *R. diluta* were received with Verheijen's collection, to wit: c/1, 21.v.1958, Wesang (RMNH no. 71100); c/2, 18.vi.1958, Léwé (RMNH no. 71101); c/2, 6.v.1972, Léong (RMNH no. 71102); c/1, 19.ii.1959, Léong (RMNH no. 71099).

The months of collecting agree with those given by Verheijen, and confirm that these are the same clutches on which he based his record. The egg dated February (RMNH no. 71099) measures 26.4 × 18.5 mm; it is much too large to belong to any kind of flycatcher, and must belong to a thrush-sized bird. The other eggs measure 20.0-22.3 × 14.7-15.7 mm. Schönwetter (1976: 762-763) noted that the eggs of members of the genus *Rhipidura* are remarkably uniform. From the measurements provided by him, it

appears that only *R. leucophrys* (of which the ♂ has a wing-length of ca. 100 mm), has eggs of about the size of the eggs ascribed to *R. diluta* (wing-length of the ♂ ca. 81 mm). The pinkish colour of the eggs is also different from assorted *Rhipidura*-eggs in our collection, and from Schönwetter's description.

In this connection it must be remembered that *R. diluta* is a member of the *R. rufiventris* group of forms, and is often regarded as a subspecies of *R. rufiventris* (cf. Watson et al., 1986b: 538). It is quite inconceivable that its eggs would be larger, and differently coloured, than those of the other members of its group. Verheijen's (1961: 185) remark that the nests of *R. rufifrons:* "resemble those of the *Monarcha* flycatchers rather than those of the *Rhipidura diluta*", supports the suggestion that the nests he ascribed to *R. diluta* had been misidentified, for actually the nests of *R. rufifrons* and *R. rufiventris* are quite similar (cf. Frith, 1976: 390-392). Before I left Leiden, it did not occur to me to compare these eggs with eggs of *Terpsiphone paradisi*, to which I now think that they may belong; this would also explain the *Monarcha*-like nests.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
4 ♂	80-82	83-85	17.5-19	15-17	12-13
	(81.0)	(84.5)	(18.3)	(16.3)	(12.8)
2 ♀	78, 79	81½, 79	17.8, 18.5	15, 16.5	11.5, 11

A few remarks about *Rhipidura* from farther away. The senior author of White & Bruce (1986: 374-375) had correctly given *R. rufiventris hoedti* priority over *buettikoferi*, but this was reversed by Bruce, who, unlike White, had apparently not read my discussion on the subject (Mees, 1975b). The date of publication is correctly recorded by Watson & Mayr (1986: 538). The last-mentioned authors err, however, in including Java in the range of *R. perlata*, and the specimen of *R. euryura* in Leiden, supposedly from Sumatra, to which they refer, is obviously mislabelled. Authors using a very wide species concept (Chasen), have sometimes treated *R. perlata* and *R. euryura* as conspecific, using the combination *R. perlata euryura* for birds from Java, and that may have contributed to the misconception that *R. perlata* occurs in Java. I note that Watson & Mayr (l. c.) placed the two species not even close together, but separated by *R. aureola* and *R. javanica.*

Rhipidura rufifrons semicollaris S. Müller

Rhipidura semicollaris S. Müller, 1843, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 184 – Fatoe Leeoe, Timor.

Collectors.— Everett (several skins), Verheijen (2, MCZ; eggs only in RMNH).
Material.— No skins in RMNH.

Eggs: Eleven clutches from Palué, c/1 (2 ×) and c/2 (9 ×), collected in the period from 14.iv-5.v.1960 (RMNH nos. 71103-71113). The eggs are cream colour, with larger and smaller dull-brown dots and usually also some darker, blackish brown spots, the former ill- defined, concentrated in a wreath around the blunt end.

Some measurements and weights:	RMNH no. 71104	17.0 × 12.7	0.0711
		17.1 × 12.7	0.0673
	RMNH no. 71105	16.9 × 11.9	0.0653
		16.9 × 12.3	-

RMNH no. 71108	16.1 × 12.8	0.0729
	16.6 × 12.9	0.0695
RMNH no. 71111	16.4 × 12.4	0.0718
	16.6 × 12.6	0.0733
RMNH no. 71113	16.8 × 13.0	0.0721
	16.9 × 12.9	0.0726

Notes.— Verheijen (1961: 185) stated that he had never with certainty seen this species on the mainland of Flores (where it was collected by Everett), but he found it very common on Palué. A year later, however, he obtained a clutch from Mataloko, which he ascribed to this species, but in my opinion it is referable to *R. diluta* (see under that species).

Considering that on Timor this same subspecies ranges from sea-level to at least 2000 m, and is evidently widely distributed, as is the very similar subspecies *R. r. sumbensis* on Sumba (cf. Mayr, 1944a: 136, 142), it is peculiar that on Flores it is so local and apparently confined to Palué and the coastal lowlands near Nanga Ramau (Everett).

Monarcha trivirgatus trivirgatus (Temminck)

Drymophila trivirgata Temminck, 1826, Recueil d'Ois. 3 (livr. 70): pl. 418 fig. 1 – Timor.

Collector.— Everett (at least 5).

Material.— None in RMNH, but: (?), x.1896, South Flores (Everett, AMNH no. 654672); ♀ ad. (A.E.), xi.1896, South Flores (Everett, AMNH no. 654670); (?), xi.1896, South Flores, shot below 1000 feet (Everett, AMNH no. 654671); ♀ (A.E.), xi.1896, South Flores, shot below 1000 feet (Everett, BM no. 98.5.4.100); ♂ "nat. coll." (= ♀ ?), xi.1896, South Flores (Everett, BM no. 98.5.4.99). The initials A.E. mean that the sexing was done by Everett personally.

Notes.— *M. trivirgatus* is a somewhat enigmatic species on Flores, as only A.H. Everett and his native collectors ever obtained it, and the specimens are merely labelled "South Flores". In view of possible interaction with the closely related *M. sacerdotum*, more exact knowledge of the occurrence of *M. trivirgatus* is much desired. From Everett's itinerary it is known that he made his headquarters at Nanga Ramau and as one of the specimens is marked as having been shot below 1000 feet, and two were sexed by Everett personally (evidently, Everett stayed close to the village, whereas his hunters went farther afield), it may be assumed that the specimens originate from the cultivated lowlands and wastelands near Nanga Ramau. From the number of specimens collected (there may have been more than the five I examined), it is apparent, that at that time the species was not particularly uncommon there.

Measurements of the BM specimens:

	wing	tail	tarsus	entire culmen	exposed culmen
♀	67	65	18.5	15.5	11.0
[♀]	68	65	18.1	16.0	

Monarcha trivirgatus wellsi (Ogilvie-Grant)

Piezorhynchus wellsi Ogilvie-Grant, 1911, Bull. Brit. Orn. Cl. 27: 105 – Goram Laut.

Notes.— Discussing *M. t. nigrimentum,* Stresemann (1914a: 128) wrote: "Von dieser Form unterscheidet sich die ihr nächststehende *M. t. wellsi* ... lediglich durch bedeutendere Ausdehnung der weissen Spitzen der drei äusseren Steuerfederpaare". Mayr (in Watson et al., 1986b: 509, footnote) says of *wellsi,* that it is "very close to *nigrimentum*". White (in White & Bruce, 1986: 366) states that: "*nigrimentum* is very like nominate *trivirgatus* but has less white on the tail (includes.... *wellsi*)".

Peculiarly, all RMNH specimens show another, and conspicuous, difference: *nigrimentum* has only a small triangle on the chin black, whereas *wellsi* has a black bib, extending over chin and throat; in this character, *wellsi* would seem to agree with nominate *trivirgatus* and not with *nigrimentum.* Unfortunately, BM material examined by me, does not support the difference, but it is worth recording, as further study is evidently required.

Differences from *M. t. trivirgatus*: the bill is longer and more slender; the belly looks whiter (the rust colour of the flanks reaching less far backwards), the third pair of rectrices has only a little white (sometimes none at all).

The sex of our eight specimens is indicated by Finsch as "♂". Finsch took the adult plumage (that is similar in both sexes), for the ♂ plumage, and the juvenile plumage (of both sexes), for the ♀ plumage. As of the eight specimens, seven are adult and one subadult, he provided them with a sex indication, corresponding with his erroneous notion.

Monarcha trivirgatus nigrimentum G.R. Gray

Monarcha nigrimentum G.R. Gray, 1860 (1861?), Proc. Zool. Soc. Lond.: 352 – Amboyna.
Monarcha bernsteinii Salvadori, 1878, Ann. Mus. Civ. Genova 12: 322 – Salvatti (errore!) = Ambon, see discussion below.

Notes.— The occurrence of a distinctive subspecies of *M. trivirgatus* on Salawatti, which has been generally accepted since the description of *M. bernsteinii* (cf. Mayr, 1941b: 135; Rand & Gilliard, 1967: 396; Mayr in Watson et al, 1986b: 509), did not seem to me obvious from the zoogeographical point of view. Salawatti is separated from mainland New Guinea by a narrow and shallow strait, and until only a few thousands of years ago it was still connected with the main island. One would not expect endemism and as far as I am aware not a single endemic bird species or subspecies has been described from Salawatti, except for *M. bernsteinii*.

Note that in the original description the spelling is *bernsteinii*, but that all later authors, beginning with Salvadori (1879: 493) himself, use the spelling *bernsteini*.

In the original description, *bernsteinii* was only compared with *M. bimaculatus*: "Il tipo esistente nel Museo di Leida è una femmina, differente da quella del *M. bimaculatus* per le dimensioni maggiori, e per avere questa soltanto il mento nero".

A comparison of the type of *M. bernsteinii* (♀ ad.) with material of diverse species and subspecies of *Monarcha* inhabiting the Moluccas, showed that it agrees almost completely with a ♀ ad. of *M. t. nigrimentum* from Ambon, both in measurements and in plumage, the only difference being that it has more black on the forehead. Therefore I do not hesitate to place *M. bernsteinii* in the synonymy of *M. t. nigrimentum*. Although it would be difficult to prove that the type of *M. bernsteinii* is not from Salawatti, it

seems most unlikely that two islands so far apart would be inhabited by the same subspecies. It is an obvious guess, on the basis of the arguments presented above, that the provenance "Salawatti" ascribed to the type is erroneous, due to an inadvertent exchange of labels, and that actually it was collected on Ambon. There is no mention of the specimen in Bernstein's diary (v. Musschenbroek, 1883), but that is inconclusive evidence, as he did not take notes on every specimen brought in by his hunters. This means that probably also the date of collecting and perhaps the name of the collector are erroneous. All that can be said is that the bird must have been collected about 1865 (on Ambon).

It is peculiar that (excluding the type of *bernsteinii*) our collection holds only one adult specimen of *M. t. nigrimentum* from Ambon, as opposed to 7 in immature plumage. A bird found nesting on Ambon by Lieftinck (1950) was also in immature plumage, as mentioned by van Bemmel in his postscript to Lieftinck's note. Of the five birds from Ceram, on the other hand, four are adult. Birds from Ambon (type-locality of *nigrimentum*) and Ceram differ somewhat: the latter are smaller, the breast is of a deeper ferruginous, the abdomen whiter. The differences are slight and do not require expression in nomenclature.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
"Sailolo, Salawati" (type of *M. bernsteinii*)					
♀	81	70	20	16+	13+
Ambon (*M. t. nigrimentum*)					
♀	80	70	19	17.6	13.7
Ceram (*M. t. nigrimentum*)					
4 ♂	75-76	64-68	17.2-18	16-17	13-13.3
♀	72½	63	18	17	13.4

Monarcha (trivirgatus) boanensis van Bemmel

Monarcha trivirgata boanensis van Bemmel, 1939, Orn. Mber. 47: 152 – Boano.
Material.— ♂, 13.v.1918, Boano (L.M.R. Rutten, RMNH no. 14055, holotype).

Notes.— In the diagnosis, *M. t. boanensis* was stated to have: "einen weissen Bürzel", a character that would link it to *M. everetti* from Tanahdjampea, the only other *Monarcha* species with a white rump (cf. van Bemmel, 1939). Examination of the type (RMNH no. 14055) revealed, however, that the rump and upper tail-coverts are black, and that the suggestion of a white rump was caused by the long silky white feathers of the lower flanks being brushed up, to cover the black rump. Hence, the supposed affinity to *M. everetti* was based on incorrect observation.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	81	71	19½	17¼	13¼

Van Bemmel gave wing 79, tail 78 mm; I am definitely unable to attain such a large tail-length, there must be a fundamental difference in method of measuring (cf. Mees, 1982a: 110; 1986: 21). The other characters enumerated by van Bemmel to distinguish *boanensis* from *loricatus* are correct: a white cross-bar on the forehead, a smaller throat-

patch, and the outer rectrices with the basal one-third black (in *loricatus* white over their whole length).

Recently a second specimen was collected: welcome evidence that this interesting form, be it species or subspecies, still exists. The naive way in which the discoverers announced their find, and the outright stupid, if not dishonest, reaction of some authorities, has unfortunately led to some negative publicity (van den Broek, 1991). The specimen will be deposited in the RMNH, but I have not yet seen it.

This, therefore, is an excellent form, either species or subpecies, apparently closer in some respects to *M. loricatus* than to *nigrimentum*. The white (or pale) bar across the forehead is otherwise only found in *diadematus* (Obi), which, however, has much smaller white tail-markings, is a smaller bird, etc.

Since the preceding notes were written, *M. boanensis* has become the subject of further field studies, as well as an interesting study of its affinities (Moeliker & Heij, 1995, 1996).

Monarcha sacerdotum Mees

Monarcha sacerdotum Mees, 1973, Zool. Meded. 46: 179 – Sesok, Flores, 1000 m.

Collector.— Schmutz.

Material.— ♂, 25.ix.1971, Sésok, 1000 m (Schmutz, RMNH no. 68135, holotype); ♀, 25.vi.1975, Paku, 800 m (Schmutz, RMNH no. 85260).

Notes.— For the original description of this species, a single male only was available, so that there remained some room for speculation about the appearance of the female (cf. Mees, 1973; Mayr & Vuilleumier, 1983: 219).

In plumage, the female agrees almost entirely with the male, thus confirming the specific distinction of *M. sacerdotum*, but it is about 5% smaller in linear measurements.

The male has the outer pair of rectrices 60 mm in length, the outer vane white to its base, the inner vane white over a distance of 38 mm. The female has the outer pair of rectrices 56 mm in length, the outer vane white over a distance of 42 mm, the inner vane over a distance of 34 mm.

Both specimens were collected in pockets of rainforest, such as on Flores are found only in the westernmost part. Observations by Butchart et al. (1996: 346-348) support Schmutz's description of the habitat and indicate a rather wider distribution than was previously known, with records from levels of 350-970 m. Father Schmutz has informed me that the altitude given for the type specimen, 1000 m, was probably overestimated and might be no more than 800 m. It appears that *M. sacerdotum* is an inhabitant of the middle levels, not a mountain bird.

I agree with Mayr & Vuilleumier (l.c.) that a revision of the genus *Monarcha* is desirable; it could also be most fascinating. I fail to understand, however, why these authors consider it "unfortunate" that, in the original description, I did not compare this species with *Monarcha manadensis*, as I cannot see any close resemblance at all: *M. manadensis* is black and white, without grey, and its tail is entirely black. There is no doubt in my mind that the closest relatives of *M. sacerdotum* are *M. trivirgatus* and *M. mundus*, as stated in the original description, and I am glad to see that it is between these two species that Mayr (in Watson et al., 1986b: 508) has now placed it.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	74	73	17	15.25	12
♀	69	66	17.5	14.75	11.5

Monarcha cinerascens cinerascens (Temminck)

Drymophila cinerascens Temminck, 1827, Recueil d'Ois. 3 (livr. 72): pl. 430 fig. 2 – Timor.

Collector.— Verheijen (1, MCZ; and eggs).
Eggs (fig. 15i): c/1, 14.vi.1960, Léi, Palué (RMNH no. 71115); c/1, 20.vi.1960, Léi, Palué (RMNH no. 71116); c/2, badly damaged, 21.vi.1960, Léi, Palué (RMNH no. 71117); c/2, 24.vi.1960, Léi, Palué (RMNH no. 71118); c/2, 3.v.1960, Léi, Palué (RMNH no. 71119).

Measurements and weights:			
	RMNH no. 71115	22.8 × 15.2	0.1429
	RMNH no. 71118	21.7 × 15.8	0.1567
		22.6 × 15.9	0.1631
	RMNH no. 71119	22.2 × 16.0	0.1612
		22.9 × 16.5	0.1700

Notes.— This species is not known from the mainland of Flores, but only from the island of Palué, where it was discovered by Verheijen (1961: 185), who noted: "eggs, nest and bird collected". The eggs, as listed above, and three nests, are in our collection, but not the bird, so that I cannot say much about its subspecific relationship. Mayr (in Watson et al., 1986b: 502) included it in *M. c. disjunctus*, but in my opinion, expressed elsewhere, this is a synonym of the nominate race (Mees, 1965: 184-186). Therefore I have felt justified in referring the population inhabiting Palué to the nominate race, although I have not examined specimens.

Hypothymis azurea symmixta Stresemann

Hypothymis azurea symmixta Stresemann, 1913, Novit. Zool. 20: 294 – Alor.
Hypothymis azurea javana Chasen & Kloss, 1929, Bull. Raffles Mus. 2: 22 – Badjoelmati, East Coast of Java.
Hypothymis azurea penidae Meise, 1941, J. f. Orn. 89: 361 – Noesa Penida.

Collectors.— Allen, Colfs, Weber, Everett, Rensch (3), de Jong (2), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— ♂, 1862, Flores (Allen, RMNH); ♂, v.1880, Flores (Colfs, RMNH); (?), xi/xii.1888, Maumeri (Weber, no. 32, ex alcohol, RMNH); ♀, 3.vi.1969, Nunang, 650 m (Schmutz, RMNH no. 81374); ♂, 24.vi.1969, Sésok, 610 m (Verheijen, RMNH no. 81371); ♂, 23.xii.1969, Todo (Verheijen, RMNH no. 65401); "♂" = ♀, 23.xii.1969, Todo (Verheijen, RMNH no. 65402); ♀, 19.ix.1970, Kisol (Verheijen, RMNH no. 65403); ♂, 4.iii.1971, Rana Loba, Borong (Verheijen, RMNH no. 85406); ♂, 12.vi.1973, Golo-Karot, Borong (Verheijen, RMNH no. 85407); ♂, 14.vi.1973, Golo-Karot, Borong (Verheijen, RMNH no. 85408); 2 ♂, ♀, 16.vi.1973, Borong coast, in mangrove (Verheijen, RMNH nos. 85405. 85409, 85410); ♂, 5.v.1978, Flores (Schmutz, RMNH no. 81373).
Eggs: 25 clutches of c/1 (7 ×), c/2 (16 ×) and c/3 (2 ×), collected in the months April (2), May (10), June (4), July (1), August (1), September (5), November (1), and one insufficiently dated (RMNH nos. 71120-71144). The eggs are white with smallish brown spots, sometimes concentrated in a wreath around the blunt end.

Some measurements and weights:	RMNH no. 71136	17.6 × 13.9	0.0901
		18.0 × 13.3	0.0980
	RMNH no. 71138	17.8 × 13.2	0.0857
	RMNH no. 71141	17.0 × 13.7	0.0906
		17.5 × 14.1	0.0969
	RMNH no. 71142	17.0 × 13.0	0.0796
		17.4 × 13.0	0.0782
	RMNH no. 71143	17.7 × 12.9	0.0814
		17.9 × 12.6	0.0736

Notes.— *Hypothymis azurea* is a species with a fascinating geographical variation: very little variation over its huge continental range, and the large continental islands, but with on some small, peripheral islands conspicuously modified forms, deeper in colour and larger in size (cf. Rand, 1970). That in the great days of the study of intraspecific variation it should have attracted the attention of systematists is only natural, see the studies by Oberholser (1911), Stresemann (1913a) and several other authors who, after Stresemann's revision, added another 10 subspecies. Many of these named subspecies date from a period that the subspecies-concept was different from the present one, and that average differences (in very small series!) were considered adequate for their recognition. For example, when Stresemann described *symmixta*, he did not have a single specimen from Java for comparison. Similarly, *H. a. javana* was subsequently described without material from the Lesser Sunda Islands, and even without mention of *symmixta*.

A comparison between series from Java and from the Lesser Sunda Islands failed to reveal any difference. Males from Borneo (*prophata*) are very slightly different: on the undersurface, the black pectoral band is usually wider, and the blue of throat and breast is brighter, more clearly blue, and also continued farther downwards than in birds from Java, which have this colour duller and a trifle more violet-blue, less clear blue. Note that this description is almost the opposite of that given by Stresemann, who claims that *symmixta* is brighter blue, less violet-blue than *prophata*!

Hoogerwerf's (1964) notes clearly support my own conclusion, that when adequate material is examined, individual variation covers the differences that have been claimed to exist between the subspecies *symmixta* and *javana*. It was only the insufficiency of his material, that kept Hoogerwerf (1964: 213-214) from uniting the two.

White & Bruce (1986: 364-365) referred populations from the Lesser Sunda Islands to *prophata*, stating that it was: "doubtful if they are separable from Sundaland *prophata*" (in the nomenclature used, they have transformed this doubt into certainty!). In their discussion, I find no evidence that these authors based their opinion on a personal examination of material.

The Philippine material available to me is inadequate, but if *symmixta* is not recognized as different from *prophata*, I do not believe that *prophata* could be maintained as different from nominate *azurea* (at present considered to be confined to the Philippines).

Van Marle & Voous (1988: 191) state that the subspecies *abbotti* is: "endemic on Banyak Islands", but that is not correct, for this striking form is only known from the islands of Lasia and Babi, south of Simalur (cf. Junge, 1936: 48). The Banjak Islands, nearer mainland Sumatra, are inhabited by *H. a. prophata* (cf. Ripley, 1944: 397-398).

The subspecies *H. a. penidae* was based on a comparison with but very few specimens from Java, Bali, Sumbawa, and Flores. Meise found the males indistinguishable from Javanese birds of that sex, the females, on the other hand, only distinguishable from females of *symmixta* by having the cap a trifle lighter blue, as in *javana*; the mantle and back, however, agreeing with *symmixta* and differing from *javana* by being slightly greyer, less brownish. As mentioned above, I am unable to distinguish between *javana* and *symmixta*, and that removes automatically the basis for the recognition of *penidae*, which was described as intermediate between these two. Note that previously Stresemann (1913b) and Rensch (1931a: 556-557) had made the claim that: "Die Stücke von Bali sind intermediär zwischen dieser [meant is *symmixta*] und der westlich anschliessenden Rasse *prophata*".

Large size is a common phenomenon in birds inhabiting small islands, compared with their relatives on the nearest larger land masses, but the fact that the males of the small-island populations are more brilliantly coloured (*abbotti*, *karimatensis*), is remarkable, as the usual tendency is, in sexually dimorphic species, for males in these conditions to lose some of their male plumage characters, and to be closer in plumage to the females.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Flores (*H. a. symmixta*)					
7 ♂	68½-71	62½-70	14.5-16	14.0-14.9	10.0-10.5
	(69.6)	(66.0)	(15.4)	(14.5)	(10.1)
2 ♀	65, 69	59, 66	15, 16	14.0, 14.3	10.0, 10.5
Java (*H. a.* "*javana*" = *symmixta*)					
6 ♂	68-72	64-70	16.16.5	13-15	9.7-11
	(69.8)	(66.3)	(16.1)	(14.3)	(10.2)
Taiwan (*H. a. oberholseri*)					
10 ♂	71-74	69-74	15.3-16.8	14.2-16	9.5-11
	(73.1)	(71.7)	(16.0)	(15.3)	(10.2)

Terpsiphone paradisi floris Büttikofer

Terpsiphone floris Büttikofer, 1894, in Weber: Zool. Ergebnisse 3: 293, pl. XVIII fig. 1-3 – Flores.

Collectors.— Allen (3 or more), Colfs, Weber (7), Everett (a series), Moraux (1), Rensch (1), de Jong (5), Verheijen/Schmutz.

Material.— ♀, iv.1880, Flores (Colfs, RMNH cat. no. 7, described and figured by Büttikofer); 5 ♂, ♀, v.1880, Flores (Colfs, RMNH cat. nos. 2-6 and Doubl.); ♂, vi.1880, Flores (Colfs, RMNH cat. no. 1); ♂, 23/25.xi.1888, Reo (Weber, RMNH cat. no. 8a, skinned from alcohol); ♂, 26.xi.1888, Bari (Weber, RMNH cat. no. 8, skinned from alcohol); ♂ in change, 26/28.xi.1888, Bari (Weber, RMNH cat. no. 10, skinned from alcohol); ♂ in change, xii.1888, Maumeri (Weber no. 48a, RMNH cat. no. 9); ♂, ♀, skeletons, xii.1888, Maumeri (Weber, RMNH cat. a, b, cf. van Oort, 1907: 213); ♂, vi.1897, Labuan Badjo (P. Moraux, RMNH cat. no. 11, flat skin); ♂, 16.v.1969, Nunang (Schmutz, RMNH no. 81109); (?), 19.xii.1969, Todo (Verheijen, RMNH no. 65415); ♂, 18.vii.1971, Tjereng, 500 m (Schmutz, RMNH no.xxx); ♀, 17.vi.1973, Waé Reca, Borong (Verheijen, RMNH no. 85100).

Eggs (fig. 15j): c/2, 2.x.1948, Rekas (RMNH no. 71145); c/2, 23.xi.1954, Montjok (RMNH no. 71146); c/2, 8.xi.1955, Flores, 600 m (RMNH no. 76584); c/3, iii.1956, Rekas (RMNH no. 71147); c/2, xii.1958, Nunuk (RMNH no. 71148).

Measurements and weights:	RMNH no. 71145	21.1 × 15.9	0.1388
		21.3 × 15.6	0.1462
	RMNH no. 71146	20.4 × 16.2	0.1338
		20.7 × 16.1	0.1448
	RMNH no. 76584	21.7 × 16.2	0.1547
		21.7 × 16.3	0.1574
	RMNH no. 71147	21.4 × 16.6	0.1636
		21.6 × 16.5	0.159 (large hole)
		21.7 × 16.7	0.1654

Notes.— Although Büttikofer's paper in the "Zoologische Ergebnisse" is generally accepted as having been published in 1894, I note that Meyer (1894), in a postscript dated 5 January 1894, states that he had already received it. Probably reprints have been mailed before the end of 1893 (in Orn. Mber. 2, 1894: 63, the year of publication is actually given as 1893), but certainly it has been published in the very first days of January 1894.

Watson et al. (1986b: 488) give as type-locality for *T. p. floris*, Reo. This is not quite accurate: in the description of the subspecies, Büttikofer began with an enumeration of the material collected by Weber: "Ein altes Männchen in Spiritus von Reo, ein zweites... ebenfalls in Spiritus, von Sikka, Balg eines Männchens im Uebergangskleide und ein Weibchen in Spiritus, beide von Maumeri, Balg eines alten Männchens und zwei Exemplare in Spiritus (Männchen im Uebergangskleide und 491a, altes Männchen), alle drei von Bari". On the following page, Büttikofer lists all the material he ascribed to *T. floris*: Sumbawa (3), Flores (16), Sumba (3), Ombaai (4). Included in the number from Flores is evidently a fully adult male, labelled Adoenara, Flores, June 1880 (Colfs, RMNH, mounted). I am not quite sure that at that time Büttikofer realised that Adonara is a separate island, not a place on Flores. *T. p. floris* seems to be a (hardly surprising) addition to the very insufficiently known avifauna of Adonara.

Two of the specimens from Sumbawa studied by Büttikofer, are from the enigmatic Forsten collection from Bima, 1842. For some reason Rensch (1930: 103; 1931a: 631) believed that this species was unknown from Sumbawa before he collected it in 1927.
In Java, *T. paradisi* is in my experience a rare, or at least very uncommon, inhabitant of the lowland forest. Therefore it is interesting that on some of the Lesser Sunda Islands, where one would expect lowland forest to be less well-developed (especially Sumba), it appears to be much more common.

Pachycephala fulvotincta fulvotincta Wallace

Pachycephala fulvotincta Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 492 – Flores.

Collectors.— Semmelink, Allen, Weber, Everett, Rensch (7), de Jong (6), Verheijen (3, MCZ), Pfeffer (1), Verheijen/Schmutz.
Material.— ♂, 1862, Larantoeka (Semmelink, RMNH cat. no. 1, mounted); ♀, skeleton, xii.1888, Maumeri (Weber, cf. van Oort, 1907: 154); ♀, 1/8.i.1889, Endeh (Weber, RMNH cat. no. 6); 19 ♂, 8 ♀, 2 ♀ im., from a number of localities in West Flores, from sea-level to 1100 m (Verheijen/Schmutz, RMNH nos. 59918-59921, 65419, 65420, 66156, 81306, 81309, 81310, 81312, 81372, 81376, 81424, 85038-85054, 85326). Iris brown, bill black, legs slate.
Eggs (figs 16a, 16aa): 29 clutches of c/1 (8 ×) and c/2 (21 ×), collected in the months April (2), May (9), June (9), July (2), August (5), and two insufficiently dated (RMNH nos. 71149-71174, 73516, 73517, 76585).

Measurements and weights of some clutches:	RMNH no. 71149	22.3 × 16.5	
		22.3 × 16.6	
	RMNH no. 71153	22.1 × 16.4	0.1578
		22.3 × 16.4	0.1658
	RMNH no. 71155	22.5 × 17.4	0.1818
		22.6 × 17.1	0.187
	RMNH no. 71156	21.3 × 17.0	0.1804
		22.0 × 17.0	0.1846
	RMNH no. 71163	21.7 × 15.4	0.1463
		22.8 × 15.6	0.1349
	RMNH no. 71165	21.3 × 16.2	0.1591
		21.3 × 16.4	0.1525
	RMNH no. 71171	22.9 × 16.1	
		23.0 × 16.4	

Notes.— When Galbraith (1967) separated specifically *Pachycephala melanura* of northern Australia and New Guinea, from *Pachycephala pectoralis* of southern Australia, the numerous well-marked forms of the Moluccas and the Lesser Sunda Islands, previously included in the all-encompassing *P. pectoralis*, were left hanging in the air. Galbraith (l.c.) promised: "a reconsideration of the superspecies in the light of the present discovery", a promise he repeated in different words some years later (Galbraith, 1974: 248), but it was not brought to fruition. Even White & Bruce (1986: 379-381) refrained from taking the next step, which had become inevitable, of removing all these forms from *P. pectoralis*, and re-arrange them. The simplest solution is to give Galbraith's (1956) various subgroups species status. In the area of the Lesser Sunda Islands, this dismemberment results in the recognition of three species: *P. calliope*, *P. teysmanni*, and *P. fulvotincta*. The last-mentioned species has the subspecies *P. f. fulviventris*, *P. f. javana*, *P. f. everetti* and perhaps *P. f. jubilarii* (the validity of *jubilarii* has been questioned).

Measurements:		wing	tail	tarsus	entire culmen	exposed culmen
Flores	20 ♂	76-83	55-63½	19-22½	15-18.2	13-15.8
		(78.9)	(58.6)	(20.7)	(17.2)	(14.2)
	9 ♀	77-81	56-62	20-21.5	16.7-18.2	13.3-15.5
		(78.6)	(58.8)	(20.9)	(17.3)	(13.8)
Alor	1 ♂	85	62	21	18.9	14.8

Arguably, the subspecies *jubilarii* from Alor, based on large size, is too weakly differentiated for recognition (White & Bruce, 1986: 380); nevertheless, the single specimen from Alor examined by me (not one of those previously studied by Rensch), supports the rather large size of birds from that island.

Pachycephala nudigula nudigula Hartert

Pachycephala nudigula Hartert, 1897, Novit. Zool. 4: 171 – Flores meridionalis.

Collectors.— Everett, Rensch (21), Verheijen/Schmutz.
Material.— ♂, x.1896, South Flores, 3500' (Everett, RMNH cat. no. 1, syntype); ♀, 22.xi.1971, Lareng,

Pongkor (Verheijen, RMNH no. 85056); ♂, 9.iii.1973, Tado Walok, Ruteng, ca. 1700 m (Verheijen, RMNH no. 69761); ♀, 15.iii.1973, G. Nggolong-Tedé, Ruteng (Verheijen, RMNH no. 69762); ♂ im., 22.iii.1976, Poco Nernancang (Verheijen, RMNH no. 81408); ♀, 7.vi.1976, Poco Mulu, 1500 m, Ruteng (Schmutz, RMNH no. 85055); ♀, 2.x.1976, Poco Nernancang (Verheijen, RMNH no. 81416); ♀, 28.vi.1978, Ulu Waé Rukus (Verheijen, RMNH no. 81420); ♀, 4.v.1978, Waé Rukus (Verheijen, RMNH no. 81422); ♂, no data, Flores (Verheijen/Schmutz, RMNH no. 81401). Iris dark brown, bill black, legs grey.

Notes.— In the mountains of Flores, above ca. 1000 m, this species is evidently common. The large series obtained by Rensch speaks for itself. The Sumbawa subspecies *P. n. ilsa*, on the other hand, is still known only from the original 2 ♂ collected by Rensch in 1927. This does not necessarily mean that it is rare. Rensch (1930: 85) indicated that in the mountains near Batoe Doelang it was not uncommon, but a year later called it "wesentlich seltener" than the nominate race. Recent publications (Butchart et al., 1996: 358; Johnstone et al., 1996: 173) describe *P. n. ilsa* as common and widely distributed on Sumbawa, with a vertical range of 200 to 1700 m. This suggests another species of which populations on adjacent islands differ in vertical distribution.

According to Schmutz (MS), the species is not generally distributed above 1000 m; for example from the mountain massif between Nunang and Sésok, which reaches 1230 m (Potjo Dédéng), it seems to be completely absent. The only explanation I can think of, is that these mountains are not high enough, or the high ground is not sufficiently extensive, even though they are to well above the lower limit of distribution of *P. nudigula* where it occurs on higher mountains.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
3 ♂	102-108	79-82	24-25.6	20.6-23.0	17-18.2
	(104.3)	(80)	(24.9)	(21.9)	(17.7)
♂ juv.	103	79	24	20	15
6 ♀	93-97	70-75	22½-	2419.6-21.8	15.5-17.5
	(95.2)	(73.3)	(23.4)	(20.5)	(16.8)

Parus major cinereus Vieillot

Parus cinereus Vieillot, 1818, Nouv. Dict. Hist. Nat. 20: 316 – Batavia.

Collectors.— Semmelink, Allen, Colfs, Weber (2, ZMA), ten Kate, Everett (3), Rensch (2), de Jong (4), Verheijen (5, MCZ), Verheijen/Schmutz.

Material.— 2 (?), 1862, Larantoeka (Semmelink, RMNH cat. nos. 28, 29); (?), iv.1880, Flores (Colfs, RMNH cat. no. 30); (?), iv.1891, Sika (ten Kate, RMNH cat. no. 31); 18 specimens (12 ♂, 5 ♀, (?) juv.), collected between 3.xii.1968 and 26.ii.1976, at Nunang (650 m), Ruteng (up to 1450 m), Todo, Langkas, Waé-Ntjuang Langkas, and Laé (Verheijen/Schmutz, RMNH nos. 59895-59900, 81404, 65377-65380, 66157, 66158, 85058, 85059, 85057, 85061, 85060).

Eggs: c/3, 18.v.1956, Mano (RMNH no. 71175); c/1, 6.v.1957, Léong, Méngé (RMNH no. 71176); c/1, 20.viii.1957, Manus (RMNH no. 71177); c/1, iv.1958, Todo (RMNH no. 71178); c/4, 27.iii.1961, Mataloko (RMNH no. 71179); c/5, 31.v.1961, Mataloko (RMNH no. 71180); c/4, 7.vi.1961, Mataloko (RMNH no. 71181); c/5, 15.vi.1961, Mataloko (RMNH no. 71182); c/4, 22.vi.1962, Mataloko (RMNH no. 71183). The egg collected in August (a month not listed by Verheijen, 1964), has an original label, and is correctly identified.

The eggs are white, well-covered with fairly light chocolate-brown primary spots, which are distributed over the whole shell, but usually more concentrated around the blunt end, and somewhat sparse lighter and more greyish secondary spots.

Some measurements and weights:	RMNH no. 71181	15.6 × 13.6	0.086
		16.3 × 13.7	0.0852
		17.1 × 13.5	0.0811
		17.8 × 13.1	0.0805
	RMNH no. 71182	16.6 × 13.3	0.0831
		17.0 × 13.1	0.0818
		17.4 × 13.3	0.0853
		17.9 × 13.3	0.0854
		18.0 × 13.2	0.0895

Notes.— *P. m. cinereus* ranges over the whole length of Java, and the chain of Lesser Sunda Islands to Alor and Sumba. It has failed to reach Timor. The absence of geographical variation in Java and the Lesser Sunda Islands indicates perhaps a fairly recent eastward expansion of the species. Its eastern limit also marks the eastern limit of distribution of the family Paridae, which is absent from the Australian region. The adjacent subspecies to the West is *P. m. ambiguus*, which is reasonably well-differentiated from *P. m. cinereus*, by having the sides of the underparts light grey instead of almost white. *P. m. cinereus* is an inhabitant of semi-open, including cultivated, country, such as is found most commonly in the lower and middle levels, but where suitable habitat exists it may occur high up in the mountains. Contrary to Stresemann (1939: 383) it is certainly not exclusively or even mainly a mountain bird, nor has it been reliably recorded from Timor.

Dicaeum annae (Büttikofer)

Acmonorhynchus annae Büttikofer, 1894, in Weber: Zool. Ergebnisse 3: 301, pl. XVIII fig. 4 – Kotting, Flores.

Acmonorhynchus annae sumbavensis Rensch, 1931, Mitt. Zool. Mus. Berlin 17: 617 – Batoe Doelang, W-Sumbawa.

Collectors.— Weber, Everett, Rensch (8), de Jong (4), Verheijen (4, MCZ), Verheijen/Schmutz.

Material.— ♂, xii.1888, Kotting (Weber, RMNH cat. no. 1, holotype); ♂, x.1896, South Flores, 3000' (Everett, RMNH cat. no. 2); 15 ♂, 19 ♀, 1968-1976, various localities in West Flores up to 1400 m (Verheijen/Schmutz, RMNH).

Eggs (fig. 16b): 63 clutches, of which 22 with one egg and 41 with two eggs, collected in the months January (1), March (5), April (8), May (24), June (11), July (4), August (1), September (3) and October (5).

Some measurements and weights:	RMNH no. 71342	16.9 × 12.0	0.0593
		17.2 × 12.0	0.0650
	RMNH no. 71210	17.7 × 12.0	0.0644
		18.1 × 12.2	0.0635
	RMNH no. 71211	16.6 × 12.6	0.0741
		17.6 × 12.2	0.0696
	RMNH no. 71213	19.2 × 12.9	0.0828
		19.2 × 13.3	0.0835

Verheijen (1964) stated that the series of eggs he listed under this name, probably included eggs from another species of *Dicaeum*. However, the eggs are too large to belong to *D. sanguinolentum* and presumably also too large for *D. igniferum* (the eggs of *D. igniferum* are unknown, but it is a small species). Probably *D. agile* has eggs correspond-

ing in size with those of *D. annae*, but it is a rare species, not observed for almost a century, so that it is unlikely that its nest has been found.

Notes.— Wing measurements of 17 ♂ 54-61 mm (the smallest specimen is adult), 19 ♀, 54-59 mm. Both Rensch (1931a) and Salomonsen (1960: 3-4) mentioned that the subspecies *sumbavensis* is very slightly differentiated. It was based on insignificant differences in tone, and on a difference in wing-length, *sumbavensis* being supposedly smaller. The much larger series from Flores now available, encompasses in its range of variation the recorded measurements of the few birds known from Sumbawa (3 ♂, 55-57 mm, 2 ♀, 54-56 mm, cf. Rensch, 1931a: 617). Although I have not examined specimens from Sumbawa for a direct comparison, I agree with White & Bruce (1986: 407-408), that *sumbavensis* "is too poorly differentiated to merit recognition".

In his revision of the Dicaeidae, Salomonsen (1960: 3) states: "The sexes in *D. annae* are alike, just as in *Prionochilus olivaceus* and *P. maculatus*", and this was one of his reasons for considering *D. annae* a primitive species, forming a link between *Prionochilus* and the more typical species of *Dicaeum*. Salomonsen's statement is surprising, for Hartert (1897b: 518), over sixty years before, had correctly described the difference between the sexes: only males have the yellow uropygial patch; in females the rump is concolorous with the back. This was also correctly described by Mayr & Amadon (1947: 17). Interestingly, the difference is already found in juveniles. This conflicts with Hartert's (1897b: 518, 1898c: 456) claim that yellow on the rump is wanting in young of both sexes. Hartert's erroneous claim was at least partly due to confusion with a different species (the juvenile from Alor, where *D. annae* is not known to occur, which was subsequently re-identified as *D. agile*; cf. Mayr & Amadon, 1947: 17).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
17 ♂	54-61	31-34½	13-15	11.0-12.2	8.2-10
	(58.7)	(32.1)	(14.0)	(11.8)	(9.0)
19 ♀	54-59	26-32	13-15	10.5-13	8-10
	(56.3)	(29.3)	(14.2)	(11.9)	(9.0)

Dicaeum agile tinctum (Mayr)

Piprisoma obsoletum tinctum Mayr, 1944, Bull. Amer. Mus. Nat. Hist. 83: 167 – Waingapu, Sumba.

Collectors.— Semmelink, Allen (2), Everett (1).
Material.— (?), 1862, Larantoeka (Semmelink, RMNH); 2 (?), 1862, Flores (Allen, BM nos. 73.5.12.1031 and 95.5.1.2157).

Notes.— This species must be rare or very local on Flores, for only four specimens seem to be known: the RMNH one (which was mentioned by Sharpe, 1885: 75), two unsexed specimens without exact locality, collected by Allen, and one collected by Everett. As Larantoeka was in the 19th century the only place on Flores with a garrison, it is quite likely that Allen also made it his headquarters, in 1862, so that three specimens may have been collected at the same place and at about the same time. The Everett specimen, however, would be from near Nanga Ramau, almost on the opposite end of the island from Larantoeka, and suggests a wide distribution.

On Sumba, on the other hand, evidence is that *D. agile* is rather common. Hartert's

(1896: 567) record from Sumbawa was, within two years of its publication, withdrawn by Hartert (1898b: 117) himself, as having been based on misidentified, poorly preserved skins of *Dicaeum annae*. There are no reliable records from Sumbawa. It does, however, occur on Alor, where a ♂ juv. was collected in April 1897 (leg. Everett, nat. coll., AMNH no. 698410); the specimen was misidentified and published as *D. annae* by Hartert (1898c), see also the notes under *D. annae*.

Dicaeum agile has been revised by Salomonsen (1960) and recently again by Sheldon (1985). Salomonsen called it: "undoubtedly a near ally of *D. annae*", but partly on the mistaken assumption that *D. annae* shows no sexual dimorphism in plumage. I have no major contribution to make to the systematics of this species, but having examined material of two little-known forms that were not studied by the said authors, I can put some of their speculations on a firmer footing.

It concerns the subspecies *D. a. atjehense* and *D. a. finschi.* About the latter, Salomonsen (1960: 12) has this to say: "This form, which must be very rare and local, is known from the type locality. Apart from the type specimen, which I have not seen, only one specimen is known; it was collected at Wynkoops Bay in 1920 by Kloss and is now in the British Museum, where I have examined it". The information that this subspecies is known from only two specimens, is repeated by Sheldon (1985: 606).

Actually, there is a series of 13 specimens in the RMNH collection (all leg. Bartels). In view of the importance of this series, I give here a full enumeration: ♂ , ♀, ♀ juv., 20.vi. 1918, Tjisoedjen (RMNH nos. 63905, 63904, 63906); 3 ♂ , ♀ juv., 5.vi.1922, Goenoeng Massigit (RMNH nos. 63907-63910); ♀, ♀ juv., 6.vi.1922, Goenoeng Massigit (RMNH nos. 63911, 63912); ♂ , ♂ juv., ♀ juv., 13.vi.1922, Goenoeng Massigit (RMNH nos. 63914, 63913, 63915); ♂ med., 27.xii.1922, Radjamandala (RMNH no. 63916). Although Bartels (1923) has published his 1918 encounter with the species, he does not state specifically that he had collected material, and that may be the reason why this record was ignored by the authors just mentioned (but not by Kuroda, 1933: 119).

It will be noted that the type specimen of *Dicaeum finschi* (♂ ad., 31.xii.1913, Goenoeng Beser near Wijnkoopsbaai, coll. Bartels no. 9482) fails in the above enumeration. The type specimen was forwarded to Finsch in Germany, and the description was published in July/August 1914 (cf. Bartels, 1914), at the outbreak of the First World War. From a note I found in the archive belonging with the Bartels collection, I learned that the type was never returned. War conditions may have prevented its return to Bartels in Java, or it may have become lost in the mail. Finsch died in 1917, during the war. The type specimen must be assumed lost.

The above series requires the following comment. In the first place, there is a clear difference between adult birds and juveniles. Juvenile birds have the striations of the breast much less distinctive than the adults (indeed, they are almost absent). In both stages, the sexes are identical in plumage. Neither Salomonsen nor Sheldon mention a distinctive juvenile plumage. The measurements taken by me indicate clearly that adult females are a little smaller than adult males, and therefore I regret that Sheldon (1985: table 1) has failed to separate the measurements of the sexes.

D. a. finschi was described as having no white tips to the lateral rectrices, and this has been accepted as a subspecific character. It even led to some speculation about its affinities. Actually, most specimens from Java show some white in the tail: the outer rectrix, and sometimes also the second rectrix, have a little whitish, or at least pale coloration at

the tip, best developed on the inside of the tip (fig. 11). In fact, the white is not less developed than in our two specimens of *D. agile* from Borneo (identified by Sheldon). Sheldon speculated whether: "a race such as *finschi,* which lacks white tail spots, merits specific status". It does not and is no more than a slightly differentiated subspecies. Sometimes one finds this form cited as *Dicaeum Finschii*, but the original binomen is *Dicaeum finschi.*

Finally, it is worth observing that the 13 specimens have been collected at three localities only: 3 near Tjisoedjen, on 29.vi.1918; 9 on the Goenoeng Massigit, on 5/13. vi.1922; and one at Radjamandala. This points to the species being not only rare and difficult to locate, but at times being, locally and temporarily, common.

Neither Salomonsen nor Sheldon have examined *D. a. atjehense,* which they state correctly that is known from only one single specimen (♂, 21.ii.1937, Gajoe Loeös, Pending, ca. 500 m, leg. Hoogerwerf, RMNH no. 14069). The year 1939, given for this bird by Chasen & Hoogerwerf (1941: 107, s.n. *Piprisoma modestum sumatranum*), followed by Van Marle & Voous (1988: 202) is a misprint. This bird has more white in the tail than any specimen of *finschi* (and also than the two specimens from Borneo) examined by me. The bill is rather small.

It may be of historical interest to present full data on the RMNH specimen of *D. a. modestum,* of which the measurements are given below: ♀, 27.xi.1879, Maplay choung, Thoungyeen Valley, leg. C. T. Bingham. The measurements confirm that this is the specimen described by Bingham (1880: 171, s. n. *Prionochilus modestus*).

A word remains to be said about the nomenclature. As Sheldon could not find any difference between specimens from Malaya (*remotum*) and specimens from Borneo, and as I am unable to find any difference between specimens from Java and two of these same specimens from Borneo, it would follow that *remotum* is a synonym of *finschi,* a conclusion reached seventy years ago by the authors of *remotum* themselves (Robinson & Kloss, 1921-1924: 393). The only reason why I still hesitate is that in this concept Sumatra should obviously also be included into the range of *finschi,* but the unique specimen from Sumatra is characterized by having large white tail-tips, and a rather small bill. The most likely explanation for this is, that the type of *atjehense* just happens to be an extreme variant in a population otherwise like *finschi,* but until more material

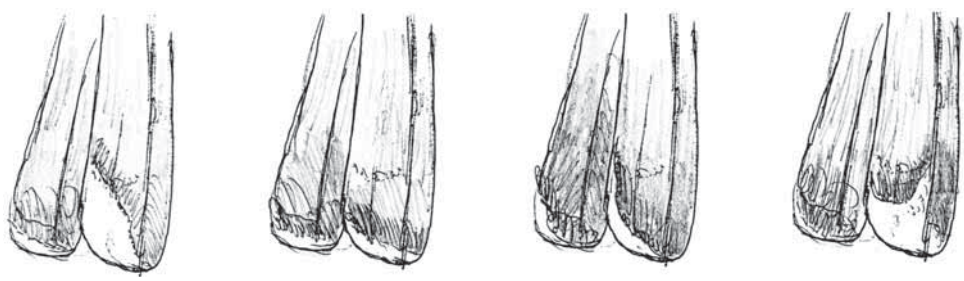

Fig. 11. *Dicaeum agile*, outer and second left rectrix, viewed from below, to show the extent of white at their tips. From left to right: ♂, Sumatra (RMNH no. 14069, type of *D. a. atjehense*); ♂, Kalimantan (RMNH cat. No. 4); ♂, Java (RMNH no. 63910, bird with the greatest amount of white in the Java-series). Although generally referred to as "white", this should rather be called "pale", for it is neither brilliant nor contrasting.

becomes available, it is impossible to be certain, and I consider that for the moment *D. a. atjehense* will have to be recognized.

My field-experience is limited to the observation of a few individuals of *D. a. tinctum* on Sumba. I did not notice the tail-wagging and tail-fanning described by Sheldon as characteristic of the species. Also, the vague whitish markings on the tail seem to me much too inconspicuous to have an important signal function, as he assumes.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Tenasserim (*D. a. modestum*)					
♀	59	26½	13	9.7	7
Sumatra (*D. a. atjehense*)					
♂	63½	33½	12.9	9	6.2
Borneo					
♂	62	29	13	10.1	7.7
♂	63	29	13	10	7.7
Java (*D. a. finschi*)					
♂ 63905	63	28½	13	11.3	8.4
♂ 63907	63	31	13.6	11	8
♂ 63908	62½	30	12.5	11	8
♂ 63909	62	29	13	10.8	7.3
♂63914	61	29½	13	11	8
♂ med 63916	59	28	13	10.8	7.9
♀ 63904	58	28	12.9	10	7
♀ 63911	59	29	12.6	11.2	7.7
♂ juv. 63913	58	27	12.5	9.8	7.2
♀ juv. 63906	56	26	12.4	9	7
♀ juv. 63910	55½	25	12	9.3	7
♀ juv. 63912	58	26	12	10	7.4
♀ juv. 63915	57	25	13	9.8	7.8
Flores (*D. a. tinctum*)					
(?) RMNH	58	27½	15	10	7
(?) BM 73	59	27½	12.8	10.2	7.2
(?) BM 95	57	25	13	9.4	6.5
Timor (*D. a. obsoletum*)					
♂ RMNH	59	27	13.4	9.9	7.1
♀ RMNH	59	26½	13.5	9	7
♀ RMNH	56	25	13	9.8	8

Dicaeum igniferum Wallace

Dicaeum igniferum Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 494 – Flores.
Dicaeum igniferum cretum Rensch, 1929, Journ. f. Orn., Ergänzungsb. 2: 201 – Alor.

Collectors.— Allen, Colfs, Weber, Everett, v.d. Sande (2), Rensch (2), de Jong (10), Verheijen/Schmutz.
Material.— ♂, iii.1880, West Flores (Colfs, RMNH cat. no. 1); (?), skeleton, xii.1888, Sikka (Weber, RMNH cat. a); ♂, 22.xii.1969, Todo (Verheijen, RMNH no. 65519); ♀, 12.vi.1971, Nantal (Verheijen, RMNH no. 85075); ♀, 12.vi.1973, Golo Karot, Borong, 50 m (Verheijen, RMNH no. 85074); ♂, 13.vi.1973, Golo Karot, Borong (Verheijen, RMNH no. 85073); ♂, 1.vi.1978, ? Méléng (Verheijen, RMNH no. 81382).

Notes.— The measurements of this material agree well with those of specimens from Flores, provided by Salomonsen (1961: 4). The subspecies *cretum* (from Alor and

Pantar) was based on the single character of a slightly larger size. Salomonsen measured specimens from Alor (4) and Pantar (2), including the type material of *cretum*, and could confirm the larger size, but he added: "The difference is trifling indeed, and I am not very keen on accepting such weakly established forms. However, for the moment I recognize *cretum*, pending more material from Alor and Pantar". Considering how cautious Salomonsen was in treating weakly-defined subspecies, the above comment practically amounts to a rejection of *cretum*. White & Bruce (1986: 409) had no such qualms, and stated without presenting further evidence: "Subspecies are not established and Rensch's *cretum* is a synonym". I follow White & Bruce in the rejection of *cretum* for two reasons: the first is that the measurements indicate that a larger series from Pantar and Alor would almost certainly show considerable overlap with measurements of nominate *igniferum*, the second that on the ornithologically poorly known connecting islands of Adonara and Lomblen, *D. igniferum* is likely to occur and might have intermediate measurements: of course, this reasoning would be unacceptable if there was a convincing difference between *igniferum* and *cretum.*

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
4 ♂	49-52	24-26	13-14	10-12	7+-8
	(50.5)	(24.7)	(13.3)	(10.7)	(7.8)
2 ♀	48, 49½	23, 24	13, 13.7	11, 12	9, 10.3

Dicaeum sanguinolentum rhodopygiale Rensch

Dicaeum sanguinolentum rhodopygiale Rensch, 1928, Orn. Mber. 36: 80 – Rana Mesé, West-Flores (1200 m).

Collectors.— Everett (1), Rensch (2).
Material.— None.

Notes.— Apparently only three specimens of this subspecies are known: one ♂ collected by Everett (cf. Hartert, 1897b: 518), and two (♂ and ♀) obtained by Rensch. Rensch's (1931a: 615) remark: "Alle drei Exemplare erbeutete ich..." must be a slip, as from his own enumeration (Rensch, 1928c and 1931a: 614) it is clear that he collected only two, and that the third bird was from Everett's collection. These specimens are from a level of ca. 1200 m, just about the level of the greatest activity of the fathers Verheijen and Schmutz, and this suggests that the species is really uncommon and that the paucity of records is not merely due to the vagaries of collecting. The few known specimens of *D. sanguinolentum hanieli* from Timor are also from ca. 1200 m. The related *D. wilhelminae*, of Sumba, however, is a lowland bird (Hellmayr's, 1914: 57: "Gebirge von Sumba" is in error), and is common. The highest point of Sumba is 1225 m.

Salomonsen's (1961) historical-zoogeographical hypothesis in which Java, etc., would have been colonized from Sumba, seems to me extremely dubious. The apparent rarity of the forms inhabiting Timor (*hanieli*) and Flores (*rhodopygiale*) already constitutes an objection: I find it difficult to envisage the Flores form "invading" (over Lombok and Sumbawa, where it is not known to occur) Bali and Java, as required by Salomonsen. A consequence is that I do not regard the thick-billed lowland bird *Dicaeum wilhelminae* as ancestral to the slender-billed mountain bird *D. sanguinolentum*, and even

less as conspecific with it. I would return *D. wilhelminae* to the status of a separate, monotypic, species, leaving its exact relations to *D. maugei*, *D. igniferum*, *D. sanguinolentum*, etc., once more open to discussion.

Perhaps my doubts about the picture of evolution and speciation presented by Salomonsen, arise from the feeling that in attemps to reconstruct it, the limits between justified deduction, plausible hypothesis, speculation, and nonsense, are vague.

Anthreptes malacensis convergens Rensch

Anthreptes malaccensis convergens Rensch, 1929, Journ. f. Orn. Ergänzungsb. II: 200 – Sita, Flores.

Collectors.— Semmelink, Allen, Colfs, Weber, ten Kate, Everett (2), v.d. Sande (1), Rensch (4), de Jong (3), Verheijen (2, MCZ), Verheijen/Schmutz.

Material.— ♂ subad., ♀, 1862, Larantoeka (Semmelink, RMNH without numbers); ♂, iv.1880, West Flores (Colfs, RMNH without no.); ♂, iv.1891, Sika (Ten Kate, RMNH without no.); ♂, 18.ix.1969, Rekas, 350 m (Verheijen, RMNH no. 81379); ♂ juv., ♀ juv., 20.xii.1969, Todo (Verheijen, RMNH nos. 65517, 65516); ♂ im., 21.xii.1969, Todo (Verheijen, RMNH no. 65494); ♀, 24.xii.1969, Todo (Verheijen, RMNH no. 65495); ♀, 21.ix.1970, Kisol (Verheijen, RMNH no. 65563); ♂, 15.iii.1971, Kisol, 150 m (Verheijen, RMNH no. 85369); ♂, ♀, 20.vi.1971, Waé-Ntjuang (Verheijen, RMNH nos. 85370, 85377); ♂, 12.vi.1971, Nantal, Rahong (Verheijen, RMNH no. 85371).

Eggs (fig. 16c): 15 clutches of c/1 (7 ×) and c/2 (8 ×), from the months April (4), May (3), June (2), July (2), and August (4), (RMNH nos. 71327-71341).

The eggs are white to pinkish white, well provided with light to medium grey secundary dots, and sparser black primary markings of varying shapes.

Some measurements and weights:	RMNH no. 71328	17.2 × 13.0	0.0862
		17.5 × 13.2	0.0864
	RMNH no. 713219	19.0 × 13.1	0.0952
		19.7 × 13.6	0.1009
	RMNH no. 71339	17.8 × 12.6	0.0822
		18.9 × 13.1	0.0923

The eggs agree in measurements with those of nominate *A. m. malacensis* from Java, as given by Hellebrekers & Hoogerwerf (1967: 141), but average slightly heavier.

Notes.— It is well known that the subspecies *A. m. convergens* is closer to *A. m. celebensis* from Sulawesi (Celebes), than to the nominate race, which occurs east to Java, Bali, and Borneo. Stresemann (1940a; 59) put as a tentative suggestion that the species might have colonized Celebes from the Philippines, or from the South (Sumbawa, Flores), or from both directions. This was taken up and modified by Mayr (1944a: 164) in the following words: "The island of Celebes seems to have been colonized both from the Lesser Sunda Islands (*convergens*) and from the Philippines (*chlorigaster*), both of which are very similar to *celebensis*", thus changing Stresemann's casual remark to near-certainty. As Celebes is inhabited by a homogeneous subspecies (it is generally agreed that *citrinus* is a synonym of *celebensis*), such a double invasion seems to me rather unlikely. That Stresemann himself was not very serious about it, is apparent from the fact that in the special section "Doppel-Einwanderung auf Celebes", he makes no mention of it (cf. Stresemann, 1939: 346).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
7 ♂	65-69	37-41½	16.6-17.3	20.6-21.2	17-18.9
	(66.3)	(39.0)	(16.9)	(21.0)	(17.9)
2 ♂ juv.	64, 66	38, 40	16.8, 17.5	20, 20.6	16.7, 17.3
5 ♀	60-64½	33½-39	16.3-17.2	19-21	15.8-17.1
	(61.7)	(36.7)	(16.9)	(20.1)	(16.6)

Nectarinia jugularis ornata (Lesson)

Cinnyris ornata Lesson, 1827, Dict. Sci. Nat. (éd. Levrault) 50: 15 – no locality, but based on *Nectarinia eximia* Temminck, pl. 138 fig. 1 = Java.

Collectors.— Semmelink, Allen, ten Kate, Everett, v.d. Sande (1), Rensch (7), de Jong (1), Verheijen (8, MCZ), Verheijen/Schmutz.

Material.— ♂, ♀, 1862, Larantoeka (Semmelink, RMNH without numbers); ♂, 1/3.v.1891, Groot Bastaard (ten Kate, RMNH without number); ♂, 28.x.1969, Nunang, 650 m (Schmutz, RMNH no. 81439); ♂, ♀, 16.ix.1970, Maro-Kama (Verheijen, RMNH nos. 65497, 65496); 2 ♂, 17.ix.1970, Maro-Kama (Verheijen, RMNH nos. 65498, 65499); ♂, 2 ♀, 22.ix.1970, Maro-Kama (Verheijen, RMNH nos. 65500, 65502, 65503); 3 ♂, 23.ix.1970, Maro-Kama (Verheijen, RMNH nos. 65504, 65505, 65506); ♂, 16.iii.1971, Kisol, 175 m (Verheijen, RMNH no. 85368); ♂, 9.iii.1974, Maro-Kama (Verheijen, RMNH no. 66199); ♀, 4. ii.1976, Ero (Verheijen, RMNH no. 85384). Iris brown, bill and legs black.

Eggs (figs 16d, 16dd): 46 clutches of c/1 (22 ×) and c/2 (24 ×), collected in the months March (4), April (19), May (11), June (7), July (3), and two without date. There are 17 clutches from Palué, the others are from Dampék, Mataloko, Soa (RMNH nos. 71247-71273, 71275-71293).

The eggs are white with large, somewhat cloudy, medium olive-brown markings.

Some measurements and weights:		RMNH no. 71289	14.5 × 10.8	0.0422
			16.2 × 10.9	0.0485
		RMNH no. 71291	15.7 × 10.6	...
			17.0 × 10.9	0.0509

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
10 ♂	51½-55	30½-36	14-15	18-21.2	15.3-18.2
	(53.6)	(33.4)	(14.8)	(20.0)	(17.0)
4 ♀	49-52½	28-30	13.7-14.6	18.3-19.9	16.4-17.4
	(51.4)	(29.1)	(14.1)	(19.1)	(16.9)

Nectarinia solaris solaris Temminck

Nectarinia solaris Temminck, 1825, Recueil d'Ois. 4 (livr. 58): pl. 347 fig. 3 – Amboine, l'une des Moluques (errore) = Timor.

Cinnyris solaris degener Hartert, 1904, Novit. Zool. 11: 214 – Endeh, S. Flores.

Collectors.— Semmelink, Allen (several), Martens, Colfs, Weber (4), Everett, Rensch (5), de Jong (4), Verheijen (4, MCZ), Verheijen/Schmutz.

Material.— ♂, 1862, Larantoeka (Semmelink, RMNH); ♂, 1880, Flores (Colfs, RMNH), (?), skeleton, xii.1888, Sika (Weber, RMNH cat. a); 22 ♂, ♂ im., 8 ♀ from Kisol, 175 m, Lingko Lumu, Ruteng, Golo-Karot, 50 m, Tinung Ndéhes, 700 m, Ruteng, Langkas, Waé-Ntjuang, Raé and Todo, from the coast to ca. 1100 m (Verheijen/Schmutz).

Eggs (figs 16e, 16ee): 33 clutches of c/1 (15 ×) and c/2 (18 ×), collected in the months March (1), April (5), May (10), June (7), July (6), and August (4), from Rekas, Bénténg Djawa, Tado, Pau, Potjong, Wesang, Mano, Léwé, Lamé, Waé Tua (RMNH nos. 71294-71326).

The eggs are close to those of *N. jugularis ornata*, but their markings are stronger, darker, sharper defined, and more purplish-brown in colour.

Some measurements and weights:	RMNH no. 71319	15.8 × 10.8	0.0523
		16.0 × 11.0	0.047
	RMNH no. 71320	15.7 × 11.1	0.0523
		16.1 × 10.9	0.05
	RMNH no. 71323	15.3 × 11.1	0.049 (damaged)
	RMNH no. 71326	14.9 × 10.9	0.046
		15.4 × 10.9	0.0478

Notes.— I agree with White & Bruce (1986: 406) that the subspecies *degener* (Sumbawa, Flores, Lomblen and Alor) is too poorly differentiated from nominate *solaris* (Timor and Samao) for recognition; indeed, I am unable to see any of the characters by which it was claimed to be distinguished. I also agree with Bruce (l.c.) that *N. s. exquisita* (Wetar) merits recognition, on the basis of having a slightly heavier bill, and a little yellower upper parts, than birds from Timor and Flores. As a matter of historical interest: this species was discovered by Reinwardt, on his visit to Koepang and its surroundings, Timor, from 3/18.vi.1821, but because of poor labelling was thought to have come from Ambon when Temminck described it in 1825. Thus it was left to S. Müller, during his stay on Timor in 1828/1829, to establish its true provenance.

Knowledge of interactions between the two closely related species *N. solaris* and *N. jugularis*, and of a possible ecological segregation, are of much theoretical interest. Father Schmutz (MS) has the following notes on the subject. In the immediate neighbourhood of the coast, only *N. jugularis* is found (note that from the islands of Komodo, Rintja and Palué only this species is known), but already a slight distance inland, at levels of 10-200 m, *N. solaris* occurs also, for example in Nisar, Waewako (180 m) and Look. At Waewako and Rekas (350 m), both species occur, and that is also the case in Nunang (650 m), where *N. jugularis* seems to be still the commoner species. On the other hand, at levels of ca. 1000 m, only *N. solaris* remains. When travelling from Orong to Tjantjar, over a pass of 1200 m, Schmutz never saw *N. jugularis. N. solaris* was the only species known to Father Verheijen from the surroundings of Ruteng (1000-1100 m) and the mountains of Manggarai. Therefore he was surprised and intrigued to find that on the cultivated high plain and in the coffee gardens near Mataloko (ca. 1000 m, the same altitude as Ruteng), *N. jugularis* was common, and *N. solaris* was absent. Evidently altitude is not the only factor that decides which species occurs in a given locality.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
24 ♂	51-56	30-35	13.9-15.2	18.2-20.6	15.2-17.7
	(52.8)	(32.1)	(14.5)	(19.4)	(16.5)
8 ♀	48-51	27-31	14-14.5	18-19.9	15.1-17.1
	(49.8)	(28.8)	(14.2)	(18.7)	(16.1)

Zosterops palpebrosa unica Hartert

Zosterops unica Hartert, 1897, Novit. Zool. 4: 520 – Nanga Ramau, South Flores.

Collectors.— Everett (1), Verheijen (1, MCZ), Verheijen.

Material.— 2 ♂, (?), 27.x.1970, Ruteng (Verheijen, RMNH nos. 66187, 66188, 85388); ♂, ♀, 27.vi.1971, Wai-Ntjuang, Langkas, Rahong (Verheijen, RMNH nos. 66190, 66189); ♀, 29.vi.1971, Wai-Ntjuang, 900 m (Verheijen, RMNH no. 66191); ♂, 12.vi.1971, Rahong, Manggarai (Verheijen, RMNH no. 66192); ♀, 21.vii.1976, Poco Nernancang (Verheijen, RMNH no. 81449). Unfeathered parts: Iris light brown; bill black, the base of the mandible plumbeous; legs slate.
Eggs (fig. 16f): 47 clutches of c/1 (17 ×), c/2 (20 ×) and c/3 (10 ×), collected in the months March (4), April (9), May (16), June (12), July (3), August (2), and October (1), from Mano, (Puntu), Poéng (Méngé), Wésang, Léwé, Tjarang, Tado, B. Liang, Mbélar, Potjong, Léing, Lété, Soa and Mataloko (RMNH nos. 71427-71473). The eggs vary from very pale blue to white.

Some measurements and weights:	RMNH no. 71428	14.6 × 10.9	0.0534
		15.2 × 10.9	0.0560
		15.7 × 11.2	0.0585
	RMNH no. 71455	15.4 × 11.9	0.0600
		15.8 × 12.0	0.0596
	RMNH no. 71466	15.0 × 11.9	0.0625
		15.1 × 11.8	0.0579
	RMNH no. 71467	17.1 × 11.6	0.0620

Notes.— These specimens were compared with an adequate series of *Z. p. melanura* from Java, and were found to differ only in having a slightly yellower rump and upper tail-coverts, agreeing with the diagnosis given by Mees (1957: 87). Previously this species was known on Flores from the type-specimen of *Z. p. unica* only. From Sumbawa, seven specimens are known, collected by Rensch (1931a: 623).

Unfortunately, I have to discuss the gender of *Zosterops* again, a question I thought had been settled some 35 years ago.

The history is as follows: The authors of *Zosterops* did not give its gender, neither can it be deduced from the species they placed in it (Vigors & Horsfield, 1827: 234).

The first author to associate *Zosterops* with a gender may have been Swainson (1831: 205, 222: *Zosterops Javanica*), feminine. About the middle of the 19th century, several authors treated the genus as masculine (Blyth, Gould, Guerin-Méneville, Temminck & Schlegel), although others treated it right from the beginning as feminine (Bonaparte, Swainson).

The leading ornithologists of the second half of the 19th and first years of last century treated the genus as feminine (Salvadori, Sharpe, Wallace, E.L. Layard, A.B. Meyer, Hartlaub, Tristram), with only one important exception (Reichenow, who was inconsistent but with a strong bias to masculinity). Last century saw the advocates of feminine gender further strengthened (by Neumann, Stresemann, Salomonsen, Delacour, etc.), and there is no doubt that this would have become universal (in spite of a short hiccup of masculinity in Japan), had not W.L. Sclater (1930: 673), in an influential work that was to destine the nomenclature of African birds for many years, chosen for the masculine gender.

The result was that in the Indo-Australian Region, *Zosterops* continued as feminine, and so was it treated by non-British authors on African birds, but most British and South African authors followed, uncritically one may assume, Sclater, and treated it as masculine, a situation that was obviously undesirable.

It appeared that the controversy was finally and definitely decided in favour of the feminine gender through a Recommendation in the Copenhagen Decisions (Hemming,

1953: 49) and the acceptance also by British authors (Snow & Moreau, 1955).
In the first edition of the Code, this Recommendation was changed to an Article, but with some explanatory text (ICZN, 1961: 30-31). The matter is made more complicated, in that a distinction is made between words ending in *-ops*, derived from Greek οψ, which are feminine, whereas words ending in *-ops* derived from Greek ωψ, "of which the usual classical gender is masculine, are to be treated as masculine unless the author indicated otherwise or unless, failing such indication, zoologists have generally treated them as feminine". This gives a lot of leeway, but if Vigors & Horsfield did not provide the gender of *Zosterops*, they did give its derivation: "Ζωστηρ cingulum, and οψ oculus", hence, definitely feminine. Note, however, that these authors expressly state the letters οψ to mean "eye", which seems to put in doubt the distinction between οψ and ωψ made in the Code (in agreement with Amaral, 1964).

Although of course this did not immediately penetrate everywhere (especially in South Africa it was a slow process), in important works, like White (1963) and Moreau (1967), the gender of *Zosterops* was treated as feminine.

This was the position when the ICZN exercised their prerogative of changing their mind: the original decision was reversed, and *Zosterops* was proclaimed masculine. The new ruling was included in the third edition of the Code (ICZN, 1985: art. 30 (a) (ii)). The renewed discussion on which this change of mind was based, began with a complaint that the Article as it stood in 1961, was too complicated (Follett & Dempster, 1963). Therefore they suggested a feminine gender, but on the same page, Holthuis expressed a preference for the masculine gender. In the following year, several zoologists/linguists (a most valuable combination), discussed the problem and failed to agree (Amaral, 1964; Griffin, 1964; Sabrosky, 1964), upon which the matter was decided by vote.

Since then, I have seen a few very definite statements in the literature, such as: "*Zosterops* is of masculine gender" (Dickinson et al., 1991: 402). Such a simple statement is nonsense, and should have read: "*Zosterops* has been decreed to be of masculine gender". Having treated the large genus *Zosterops* as feminine for close on fifty years, I am reluctant now to change its gender, a change diametrically opposed to the stated object of the Code ("to promote stability").

Addendum.— To illustrate the arbitrary, not to say haphazard way this decision was taken, I provide the following anecdote. When the question came up in 1963, the technical assistant of a distinguished member of the ICZN, who is a carcinologist, had just finished labelling a series of European lobsters with the name *Nephrops norvegicus* in the beautiful copperplate writing for which he was known. Not wanting to have these labels re-written, a time consuming work, and moreover finding that *Nephrops norvegica* "did not sound right", this member, not a classical linguist, strongly pushed for the masculine gender. For the sake of one lobster, *Zosterops*, the largest bird-genus known, as well as several related genera (*Speirops, Lophozosterops*) had to change gender. Admittedly, the story goes that E. Mayr was consulted about *Zosterops* and that he did not object to the change, but this seems strange as several years later, in the authoritative "Checklist of birds of the world" (1967), Mayr used the feminine gender throughout, as he had done in all his earlier publications. It had not occurred to the above-mentioned carcinologist, who was my colleague, to mention the problem to me.

Other bird genera ending in *–ops*. Treatment of *Prionops* (8 species) has been inconsistent, but several leading authors considered it feminine. *Xenops* (4 species): masculine.

Half a dozen small genera, with one or two species, carry little weight and in some cases the gender does not affect the specific name (*Scythrops novaehollandiae* in this paper).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
4 ♂	51-54½	31-34	14-15	12-13	83/4-10
	(52.1)	(32.5)	(14.4)	(12.44)	(9.2)
3 ♂	50-51	30-32	15-15.8	12	9
	(50.3)	(30.7)	(15.3)	(12.0)	(9.0)
(?)	50	29	14.5	11	8.6

Zosterops montana montana Bonaparte

Z[*osterops*] *montana* Bonaparte, 1850, Consp. Gen. Av. 1: 398 – Sumatra = Mt. Merapi, Padang Highlands (cf. Mees, 1957: 176, 184-185).
Zosterops palpebrosa florensis Rensch, 1928, Orn. Mber. 36: 9 – Geli Moetoe (1500 m), Flores.

Collectors.— Everett (2), Rensch (7), Verheijen (10, MCZ), Verheijen/Schmutz.
Material.— 38 specimens, all from near Langkas (Rahong) and Ruteng, from elevations of 900-1500 m (Verheijen, RMNH nos. 59811, 59812, 59814, 59817, 59818, 59820-59826, 59829, 59833-59835, 59840, 66175-66180, 66182-66185, 81438, 82185).
Eggs: c/2, 4.vi.1955, Wangkung (RMNH no. 71357); c/3, 4.ix.1955, Tjolol (RMNH no. 71358); c/2, 12.viii.1958, Robo (RMNH no. 71359); c/2, 1.viii.1959, Wangkung (RMNH no. 71360). The eggs are unmarked, white with just a suggestion of pale blue, almost without gloss.

Measurements and weights:			
	RMNH no. 71357	16.5 × 12.9	0.0747
		16.7 × 12.7	0.0748
	RMNH no. 71358	16.0 × 12.3	0.0654
		16.4 × 12.7	0.0708
		16.7 × 12.7	0.0701
	RMNH no. 71359	17.3 × 11.1	0.0771
		18.0 × 12.1	0.0790
	RMNH no. 71360	16.0 × 12.1	0.0631
		16.2 × 11.9	0.0616

Notes.— For a review of the extensive synonymy of this species, see Mees (1957 and 1969: 270-273). In the last-mentioned paper I speculated about the identity of birds from Lake Lanao, Mindanao, recorded by de Schauensee & du Pont (1962) under the name of *Zosterops montana montana*. These authors gave for specimens from Lake Lanao a wing-length of 53-56 mm, and for specimens from 3250-5000 ft. on Mindanao a wing-length of 54-58 mm, concluding that "it appears that highland birds are larger than lowland specimens". The surface of Lake Lanao is at 400 m a. s. l., which puzzled me, as *Z. montana* ought not to occur so low. Only later did I discover that the name Lake Lanao is now applied to the new university, high above the Lake, at 1800 m, and that that is the place where these specimens would have been taken. As 1800 m is 6000 ft., a comparison with specimens taken at 3250-5000 ft. elsewhere in Mindanao, should show the former to be larger, not smaller than the latter, if there was an increase in size with an increase in altitude. As I mentioned before, the lowland specimens from Luzon listed by these authors under the name *Z. m. montana*, were undoubtedly *Z. japonica meyeni* (cf. Mees, 1969: 263).

On the basis of the above discussion, I gladly accept du Pont's (1971a) statement that "there was no misidentification of species" of the specimens from Mindanao. He does not comment on the specimens from Luzon, so that I suppose he has accepted their re-identification. In the same paper, du Pont describes a new subspecies, *Zosterops montana gilli,* from the island of Marinduque, 1000-1500 ft. In the description of this subspecies, du Pont compares it only with *Z. m. halconensis,* from which he says that it differs by being more yellowish. There is no mention of *Z. japonica meyeni*, with which it was apparently not compared. Neither is the iris-colour recorded. *Z. j. meyeni* is a yellower bird than *Z. montana*. The occurrence of *Z. montana* on an island with a highest peak of only 652 m, and at levels of 1000-1500 ft. (300-450 m) seems unlikely. Therefore I suggest that *Z. montana gilli* is a synonym of *Z. japonica meyeni* (cf. Mees, 1992).

Erritzoe (1995: 13, 14) lists two specimens from Laguna de Bai in the flat lowlands of Luzon, as *Z. montana*. Although he refers to my work (Mees, 1957) for this identification, I cannot believe it correct. There is no mention of the eye-colour and identification on the basis of a plumage description alone is tricky.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
24 ♂	54-59	36-41	16-17.6	12.2-14	9-11
	(56.5)	(37.6)	(16.8)	(13.1)	(10.2)
14 ♀	54-57	34-38½	16-17	12.3-14	9-10
	(55.6)	(36.7)	(16.3)	(13.1)	(9.8)

Zosterops chloris intermedia Wallace

Zosterops intermedia Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 493 – Macassar and Lombock, restricted to Makassar by Walden (see notes).

Collectors.— Weber (2), Rensch (8), de Jong (1), Verheijen (9, MCZ), Verheijen/Schmutz.
Material.— (?), 29.xi.1888, island Rusa Radja = Palué (Weber, RMNH cat. no. 8).
Eggs: c/2, 27.vi.1956, Dampék (RMNH no. 71361), and 65 clutches of c/1 (11 ×), c/2 (21 ×), c/3 (30 ×) and c/4 (3 ×), all from Palué, collected between 14.iv. and 5.v.1960 (RMNH nos. 71362-71426). The eggs vary from pale blue to white, and have little gloss.

Some measurements and weights:	RMNH no. 71375	16.0 × 13.1	0.0789
		16.4 × 12.8	0.0754
		16.5 × 12.8	0.0752
	RMNH no. 71402	16.3 × 12.3	0.0705
		16.7 × 12.3	0.0757
		16.7 × 12.8	0.0789
	RMNH no. 71414	15.6 × 12.8	0.0765
		16.1 × 12.9	0.0762
		16.3 × 12.8	0.0736
	RMNH no. 71416	16.5 × 13.0	0.0869
	RMNH no. 71417	15.7 × 12.5	0.0733
		16.0 × 12.4	0.0740
		16.1 × 12.1	0.0690
	RMNH no. 71418	16.5 × 12.5	0.0688
		16.7 × 12.4	0.0709
		17.0 × 12.6	0.0722

Notes.— Although Rensch collected it near Badjawa at 1200 m, this is mainly an inhabitant of the coastal regions, the mangroves and adjacent cultivated lowlands, and especially of the small islands: note that Verheijen obtained only a single clutch of eggs from mainland Flores (Dampék, on the north coast), but 65 clutches from the island of Palué during a stay of less than a month. The nine skins he collected (MCZ) are also all from Palué.

Z. intermedia was originally described from "Macassar and Lombock", but in the description, Wallace (1864: 493) explained the provenance of the name given in the following words: "Remark: Mr G.R. Gray attached the MS. name of *intermedius* to my Macassar specimen". This was repeated in slightly different words by Walden (1872: 72): "The above specific title was attached to a Macassar example in the British Museum by Mr G.R. Gray, and was adopted by Mr Wallace, who first described the species". Neither of these statements is a valid restriction, or a valid lectotype-selection, and the same pertains to Sharpe's (1884: 185) listing of the Makassar specimen as "Type of species" (cf. ICZN, 1985: Art. 72 (b) (vii)).

White (in White & Bruce, 1986: 412, 415), discussing my treatment of the very similar species *Z. palpebrosa*, *Z. montana*, *Z. chloris* and *Z. citrinella*, concluded: "there seems no reason why they should not...be closely related", and: "Double invasion and character displacement could account for this situation...It is difficult to see why these species should not have a common history associated with successive invasions and reinvasions". The way this is put certainly suggests that White thought that he was disagreeing with me, but the fact that I and all other authors have placed these species in the same genus, implies a common origin, and nobody would deny their common history of speciation, associated with expansions and contractions of range. White's reference to character-displacement is less obvious, because the essence of the problem with these species is their morphological similarity, which is the opposite of character-displacement.

In the first half of last century, when authors were still trying to create very widely-ranging polytypic species, the four above-mentioned species, to which should be added *Z. japonica*, *Z. everetti*, *Z. lutea,* and several others, have all, at some time, been treated as conspecific. My own work has largely been devoted to showing that this went much too far, and that these large conglomerates, based on geographical replacement and on superficial similarity, were artificial (cf. Mees, 1969: 312). In this, I was conscious of the danger of going too far in the opposite direction, and indeed, I was reluctant to deviate too much from the conclusions reached by previous students of the Zosteropidae. That is why only in 1969 I separated *Z. chloris* from *Z. citrinella.* [12] I kept *Z. meyeni* as a subspecies of *Z. japonica*, mainly as I believed birds from Hainan (*Z. j. hainana*) to show intermediate characters. Parkes (1971: 54) has since argued that a specimen collected by Whitehead, supposedly on Hainan, and very similar to *meyeni*, which was at the basis of my opinion, was mislabelled, and actually was taken on Luzon. This removed the main objection to granting to *Z. meyeni* specific status. Parkes's speculation that *Z. meyeni* might be a lowland representative of *Z. montana* remains just that; indeed, it has less substance

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[12] Authors following the directive of treating *Zosterops* as masculine, have invariably changed the name *Z. citrinella* to *Z. citrinellus*, but apparently in error (cf. Barbagli & Violani, 1997).

than the link with *Z. japonica* which he had just condemned, as here there is not even the argument of geographical and ecological representation. As other authors have held *Z. montana* to be conspecific with *Z. palpebrosa*, and *Z. palpebrosa* with *Z. japonica*, this would bring us right back to square one, where the affinities of *Z. meyeni* are concerned.

White gives an impression of denying the developments of the past forty years, and of wanting to go back to the expanded species of half a century ago. His remarks, however, do not contribute to a serious discussion, but are little more than hollow rhetoric. For the same reasons, I cannot agree with Ford's (1983: 396) claim that *Z. chloris* is "undoubtedly" the closest relative of *Z. lutea*.

Zosterops wallacei Finsch

Z[*osterops*] *wallacei* Finsch, 1901, Tierreich 15: 23 – Kleine Sunda-Inseln Sumbawa, Flores, Sumba und Lomblen; restricted to Bima, East Sumbawa by Mees (1961a: 59).

Collectors.— Semmelink, Allen, Everett, Rensch (3), de Jong (2), Verheijen (4, MCZ), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 3); 11 ♂, 5 ♀, 3 (?) from Ling Ndela, 600 m; Todo, 700 m; Nunang, 650 m; Waé Rempo; Weleng (Ruteng); Golo-Karot (Borong).
Eggs (fig. 16g): 58 clutches of c/1 (20 ×), c/2 (35 ×) and c/3 (3 ×), taken in the months April (12), May (14), June (11), July (13), August (4), September (1), October (2), and one undated (RMNH nos. 52320, 71474-71529, 73518).
The eggs are pale blue, lightly and finely mottled with brown.

Some measurements and weights:	RMNH no. 71500	17.0 × 13.2	0.0860
		17.2 × 13.3	0.0855
	RMNH no. 71501	17.8 × 12.3	0.0705
		18.6 × 12.7	0.0708
	RMNH no. 71526	16.5 × 12.0	0.0693
		17.4 × 11.7	0.0734
	RMNH no. 71528	17.0 × 12.7	0.0744

Notes.— The measurements confirm that birds from Flores average slightly smaller than birds from Sumba (cf. Mees, 1961a: 61-62).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
11 ♂	53-56	38-42½	15.5-17.7	13.3-14.6	10-11
	(55.0)	(40.8)	(16.7)	(14.0)	(10.8)
5 ♀	53-55	37-42	17-17.8	13-15	10-10.8
	(53.9)	(39.7)	(17.4)	(14.0)	(10.4)

Lophozosterops superciliaris superciliaris (Hartert)

Zosterops superciliaris Hartert, 1897, Novit. Zool. 4: 172 – South Flores.

Collectors.— Everett (at least 10, cf. Mees, 1969: 197), Rensch (21), Verheijen (4, MCZ), Verheijen/Schmutz.
Material.— ♀, x.1896, South Flores (Everett, RMNH cat. no. 1, syntype); 42 specimens from various localities in West-Flores, from 1050-2200 m (Verheijen/Schmutz).
No eggs.

Notes.— Verheijen (1964: 196) considered it possible that amongst his large series of eggs of *Lophozosterops dohertyi*, there might be a few of the present species, "since eggs and nests of both species resemble each other strongly, and I gathered them in places where they occur together, or at least adjacent to each other". This may be correct, but I doubt it for the following reason: the eggs of *L. dohertyi*, with their brown spots, are conspicuously different from those of all other Zosteropidae of which the eggs are known. Although *L. superciliaris* and *L. dohertyi* are congeneric, I believe that *L. superciliaris* is more closely related to *L. javanica* than to *L. dohertyi*, and therefore I would expect its eggs to resemble the plain, pale greenish blue eggs of *L. javanica*. Verheijen's remark, quoted above, about the strong resemblance, cannot be taken literally, as by his own admission he did not know nest and eggs of *L. superciliaris* with certainty. A simple and obvious explanation is that, although the species ranges down to ca. 1000 m, it does not, or only in small numbers, nest below ca. 1300 m, the upper limit of Father Verheijen's nest-searching activities

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
19 ♂	67-71	46-54	19.8-23	15.2-17	12-14
	(68.8)	(48.2)	(20.8)	(16.1)	(13.0)
21 ♀	64-69	45-51½	19.4-21	14.4-16.8	11.6-13.2
	(66.9)	(47.6)	(20.2)	(15.8)	(12.6)

Lophozosterops dohertyi subcristata Hartert

Lophozosterops (ad potius *Zosterops*) *subcristatus* Hartert, 1897, Novit. Zool. 4: 171 – hills of South Flores, 3000-3500 feet.

Collectors.— Everett (at least 8, cf. Mees, 1969: 203), Rensch (4), Verheijen (7, MCZ), Verheijen/Schmutz.
Material.— 36 specimens from Ruteng, Todo, Poco Nernancang, L. Ngkiong, Nantal, Waé-Ncuang, Ntjuang, Waé Laci, Lingko Lareng Pongkor, Golo Mbélar, Rekas, at elevations from 350-1050 m.
Eggs (fig. 16h): 114 clutches of c/1 (34 ×), c/2 (79 ×) and c/3 (1 ×) eggs, collected in the months February (2), March (5), April (16), May (21), June (32), July (14), August (9), September (8), October (5), and 2 not dated (RMNH nos 52319, 71530-71620, 71622-71640, 73519-73521). The eggs are light blue, sparsely to moderately dotted with brown.

Some measurements and weights:	RMNH no. 71594	18.2 × 13.9	0.0950
		18.4 × 13.7	0.0834
	RMNH no. 71595	17.4 × 13.7	0.0900
		17.8 × 13.3	0.0994
	RMNH no. 71596	17.2 × 13.3	0.0892
		17.6 × 13.7	0.0873
	RMNH no. 71608	17.4 × 13.4	0.0972
		18.3 × 13.8	0.0952
	RMNH no. 71622	16.9 × 13.5	0.0933
		17.0 × 13.4	0.0924
	RMNH no. 71624	19.3 × 13.7	0.0962
		19.6 × 13.8	0.1052

Notes.— As was to be expected in this larger material, the present series shows a greater vertical range than that assumed for the species by Rensch (1931a: 625).

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
17 ♂	60½-64	43½-49	18-19.6	13-15.9	11-12.7
	(62.3)	(45.6)	(18.7)	(14.8)	(11.8)
18 ♀	58½-62½	41-47	17.5-19.2	13.2-16	10.8-12
	(61.1)	(44.4)	(18.2)	(14.3)	(11.5)

Although the two smallest females (wings 58½ and 59 mm) are in extremely worn plumage, there are among the males also individuals in very worn plumage. Therefore it seems safe to conclude that in this species, as in other Zosteropidae, the females average a little smaller than the males. There is no difference in plumage between the sexes.

Heleia crassirostris crassirostris (Hartert)

Zosterops crassirostris Hartert, 1897, Novit. Zool. 4: 172 – South Flores.

Collectors.— Everett (at least 11, cf. Mees, 1969: 211), Rensch (1), Verheijen (3, MCZ), Verheijen/Schmutz.
Material.— ♀, 20.v.1969, Waé Laci (Verheijen, RMNH no. 81393); ♀, 4.xi.1969, Ruteng (Verheijen, RMNH no. 65459); ♂, ♀, 23.xii.1969, Todo (Verheijen, RMNH nos. 65461, 65460); ♂, ♀, 20.vi.1971, Waé- Ntjuang, Langkas (Verheijen, RMNH nos. 85354, 85353); (?) nestling, 5.v.1971, Lingko-Moak, Langkas (Verheijen, RMNH no. 66194); ♀, 9.i.1976, L. Ngkiong (Verheijen, RMNH no. 81387); ♂, 15.i.1976, Wae Cuang (Schmutz, RMNH no. 97134); ♂, 7.ii.1976, Rempo (Verheijen, RMNH no. 85356); ♂, ♀, 2.vi.1976, Ulu Ros (Verheijen, RMNH nos. 81394, 81389); ♀, 25.ix.1976, Poco Nernancang (Verheijen, RMNH no. 85355); ♂, 30.v.1978, Waé Hiam (Verheijen, RMNH no. 81390); ♀, 31.v.1978, ? Méléng (Verheijen, RMNH no. 81396).
Eggs (fig. 16i): 23 different sets, of which c/1 (5 ×), c/2 (12 ×), c/3 (5 ×) and c/4 (1 ×), taken in the months April (4), May (4), June (6), July (3), August (3), September (2) and October (1), (RMNH nos. 52318, 71642-71663). Assuming the c/1 to be incomplete, the usual clutch-size would be 2 or 3. The eggs are white, only slightly glossy, without markings.

Some measurements and weights:	RMNH no. 71642	19.2 × 13.7	0.1084
		19.2 × 14.1	0.1052
		19.3 × 14.1	0.0976
	RMNH no. 71645	19.3 × 14.6	0.1145
		19.7 × 13.9	0.1227
	RMNH no. 71646	19.7 × 13.8 }	large holes
		19.8 × 13.8 }	
	RMNH no. 71657	19.0 × 14.2	
		19.0 × 14.2	
	RMNH no. 71658	18.4 × 13.6	0.0941
		18.6 × 13.9	0.0997
		18.7 × 13.8	0.1075
	RMNH no. 71659	18.3 × 13.6	0.0858
		19.1 × 13.5	0.0992

Notes.— *H. crassirostris* has been divided into two subspecies, the nominate one confined to Flores, and *H. c. junior* confined to Sumbawa. Whereas from Flores now good series are known, only the original two specimens (collected by Rensch) have been recorded from Sumbawa, and as I have pointed out (Mees, 1969: 212), the validity of *junior* requires confirmation, or, rather, its validity is dubious. White & Bruce (1986: 419) stated with confidence that *junior* is a synonym, but how they could be so certain is not clear, for as far as I can judge, they had not examined any specimens.

The present material confirms that there is no difference in measurements between birds from Flores and birds from Sumbawa, but until more material from Sumbawa may become available, I would keep to my former opinion, that *junior* merits the benefit of the doubt.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
6 ♂	66½-73	49-56	19.8-20.7	18-19.2	14-16
	(69.7)	(53.0)	(20.2)	(18.6)	(15.2)
8 ♀	65-69	49-51	19-20	16.2-17.8	12.6-14.8
	(66.6)	(50.0)	(19.6)	(17.0)	(14.0)

The smallest male has the tips of the primaries extremely worn, but even so, there is a clear average difference in size between the sexes. Previously, I was unable to establish this because of lack of females (only three having been traced, all in very worn plumage) (cf. Mees, 1969: 210).

Lichmera indistincta limbata (S. Müller)

Meliphaga (*Ptilotis*) *limbata* S. Müller, 1843, Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenk.: 162 – Timor.

Collector.— Allen (1).
Material.— (?) juv., 1862, Flores (Allen, BM no. 1873.5.12.994).

Notes.— *Lichmera indistincta limbata* is very common on most of the Lesser Sunda Islands, from Bali to Timor. This makes it even more peculiar that on Flores the specimen without exact date and locality, collected by Allen in 1862, remains the only record. Rensch (1931a: 608) wrote: "auf Flores merkwürdigerweise nicht beobachtet". Verheijen did not find the species on Palué, and Schmutz (MS) states expressly that on Flores he has never heard the conspicuous song. I have observed (seen and heard) it on Gili Lawa Laoet, an islet off the north-east coast of Komodo, about mid-way between Sumbawa and Flores, and only ca. 30 km from the nearest point of mainland Flores (September 1984). Hoogerwerf (1956) does not mention *L. indistincta* from Komodo.

In this connection, Allen's specimen assumes an increased importance. Dr Cowles has examined it for me; he confirmed that it has been identified correctly and that it has what seems to be an original label in the handwriting of Allen, with the words "Flores", "eyes dark" and a figure "2", to complete a pre-printed year 186"2". Therefore, the record is as reliable as can be expected from a specimen collected so long ago.

Since the introduction of ternary nomenclature, *L. i. limbata* had always been considered a, not particularly strongly differentiated, subspecies of *L. indistincta*. Sibley & Monroe (1990: 429) have promoted it to an "allospecies". In this connection I should like to mention that I know Australian *L. indistincta* quite well. My first field experience with *limbata* is from the island of Sumba, where on my arrival in Melolo, I heard song from the mangroves, which I did not hesitate a moment recognising as being of *L. indistincta*: in addition to their similarity in morphology and plumage, the two forms evidently agree also in song. I believe that the relationship between *indistincta* and *limbata* is correctly expressed by treating them as subspecies.

The eggs support the close relationship. Father Verheijen (1976: 18) collected some clutches on Ndao near Roti. They are white, with small and sparse brown spots (one is practically spotless).

Measurements and weights of the eggs from Ndao are:		
RMNH no. 76731	17.4 × 14.0	0.0905
	17.5 × 14.1	0.0894
	17.8 × 14.0	0.0849
RMNH no. 76732	16.7 × 14.3	0.0691
RMNH no. 76733	16.9 × 13.5	0.072
	17.2 × 13.4	0.0669

Both in markings and in measurements and weights, they agree with eggs of nominate *L. indistincta.* White & Bruce's (1986: 399) statement that this species is "commonest 800-1200 m", is not correct for most of its range. My own observations, given above, show it to inhabit small islands and, on the large islands, lowlands, including coastal mangroves. This is supported by Verheijen for Roti and its adjacent small islands, and also by the material collected by Stein on Timor and Sumba (cf. Mayr, 1944a: 137, 143).

Lichmera lombokia fumidigula (Rensch)

Meliphaga virescens fumidigula Rensch, 1928, Orn. Mber. 36: 9 – Geli Moetoe (1500 m), Flores.

Collectors.— Everett (1), Rensch (9), Verheijen/Schmutz.
Material.— 61 specimens from several localities in Manggarai, to 2200 m (mountain lake Rana-Ka). (RMNH nos. 59886-59894, 65526-65541, 81358, 81361, 85225-85244). Iris dark brown, bill black, legs slate.

Notes.— The large series obtained shows that this is one of the most common bird-species at the higher levels. Therefore it is surprising that not a single nest seems to have been found. Perhaps, the explanation is the same as that suggested for *Lophozosterops superciliaris* on a previous page.

White & Bruce (1986: 398-399) have placed *fumidigula* in the synonymy of the nominate race, but a comparison of the series from Flores with our four specimens from Lombok (leg. Vorderman, 1895b: 15) showed me that all the characters claimed by Rensch (1928a) for *fumidigula*, hold good. Especially the smoke-coloured throat from which *fumidigula* takes its name, is a valid, albeit not particularly conspicuous, character. The average difference in size between the two subspecies is fully confirmed.

It is interesting that on Lombok, *L. l. lombokia* is a lowland form and an inhabitant of cultivated country, recorded from 0-1200 m, whereas *L. l. fumidigula* of Sumbawa and Flores inhabits mountain forest, with an altitudinal range of ca. 1000-2200 m. Although the subspecies concept is primarily and necessarily a morphological one, I consider that in judging the validity of *fumidigula,* such ecological differences may certainly be considered.

Note that the geographical variation of *L. lombokia* goes in two respects against Rensch's theories: it is the eastern subspecies which is smaller than the western subspecies, and it is the mountain subspecies which is smaller than the lowland subspecies.

Naturally, it is tempting to relate the variation in habitat and vertical distribution on the different islands, with the presence of the closely related *L. indistincta*, but on Flores *L. indistincta* is so scarce (if present at all), that it can hardly influence the distribution of *L. lombokia.*

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Lombok (*L. l. lombokia*)					
4 ♂	67-70	50-52	20-21.6	20+-23+	16.3+-20+
	(68.5)	(51.25)	(20.7)	–	–
Flores (*L. l. fumidigula*)					
25 ♂	61½-68	48-55	18-21.2	20.4-25	17.9-21.8
	(65.5)	(51.6)	(19.6)	(23.4)	(19.8)
36 ♀	58-63	44½-50	17.0-20	20-24.9	17.4-21.5
	(60.7)	(47.9)	(18.6)	(21.7)	(18.4)

Philemon buceroides neglectus (Büttikofer)

Tropidorhynchus neglectus Büttikofer, 1891, Notes Leyden Mus. 13: 213 – Flores, Sumbawa.
Philemon timoriensis plesseni Rensch, 1929, J. f. Orn. Ergänzungsb. II: 198 – Lomblen.

Collectors.— Semmelink, Allen, Martens, Weber, ten Kate, Everett (2), Endih (1), Rensch (4), de Jong (2), Verheijen (2, MCZ), Pfeffer (2), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 3, syntype); 2 (?), xii.1888, Maumeri (Weber, RMNH cat. no. 7, and Doubl., syntypes); (?), 28/30.i.1891, Endeh (ten Kate, RMNH cat. no. 8, syntype); (?) fledgeling, 13/24.vi.1891, Sika (ten Kate, RMNH cat. no. 9, syntype); ♀, 28.x.1969, Nunang, 650 m (Schmutz, RMNH no. 97148); ♂, 18.ix.1970, Kisol, 150 m (Verheijen, RMNH no. 65365); ♀, 10.iii.1971, Kisol, 175 m (Verheijen, RMNH no. 66147); ♂, 9.iii.1971, Kisol, 175 m (Verheijen, RMNH no. 66146); 4 ♂, 2 ♀, 11.iii.1971, Kisol, 175 m (Verheijen, RMNH nos. 66148-66153); ♀, iii.1971, Kisol, 175 m (Verheijen, RMNH no. 66145); ♂, 20.vii.1971, Nunang, 600 m (Schmutz, RMNH no. 85297); ♂, 27.vii.1971, Nunang, 650 m (Schmutz, RMNH no. 85298); ♂, 12.x.1971, Nunang, 650 m (Schmutz, RMNH no. 85299); 2 ♂, 13.vi.1973, Golo-Karot, Borong, 50 m (Verheijen, RMNH nos. 85300, 85301); ♀, 14.vi.1973, Golo-Karot, 50 m (Verheijen, RMNH no. 85302); 4 ♂ , ♀, 23.iii.1976, Nunang, 650 m (Schmutz, RMNH nos. 81031, 81034, 81036, 81035).
Eggs (fig. 17a): 53 sets of c/1 (16 ×), c/2 (14 ×) and c/3 (23 ×), taken in the months January (1), February (2), March (2), April (11), May (12), June (5), July (1), October (8), November (8) and December (1), and two not dated (RMNH nos. 71664-71715, 73522). The eggs vary from white to a deep salmon colour, with brown primary and light grey secondary dots, variable in size and density.

Some measurements and weights:			
	RMNH no. 71678	33.8 × 22.3	0.5527
	RMNH no. 71690	30.4 × 21.8	0.3723
		30.9 × 22.1	0.4041
		34.6 × 21.8	0.4871
	RMNHH no. 71691	29.6 × 22.7	0.4116
		30.4 × 23.0	0.4263
		33.1 × 22.4	0.4814
	RMNH no. 71692	30.7 × 21.7	0.3803
		30.7 × 22.0	0.3946
		32.0 × 22.3	0.4386
	RMNH no. 71703	31.0 × 21.8	0.4430
		32.7 × 21.6	0.4969
		32.9 × 21.4	0.4907
	RMNH no. 71704	29.2 × 23.1	0.5178
		31.3 × 21.8	0.4835
	RMNH no. 71705	32.2 × 20.7	0.4324
		32.3 × 21.6	0.4511

Notes.— White (in White & Bruce, 1986: 398) has dismissed both the subspecies *plesseni* and *sumbanus*, on the basis of what appear to be mostly Rensch's own figures,

adding: "this minor size variation is probably not worth formal designation". Whatever the studied material was, it must have been small and therefore I considered it worth measuring the above specimens from Flores and other specimens from the Lesser Sunda Islands. The results show that the increase in size eastwards is questionable: even birds from Lombok have a wing-length of up to 153 mm, birds from Flores to 154 mm. The individual variation is apparently much greater than Rensch thought, and therefore I agree with White that *P. t. plesseni* is a synonym of *P. b. neglectus*. With only a single unsexed specimen from Sumba at hand, I am unable to give a definite opinion on the validity of *sumbanus*, but note that the measurements of wing and tail of the Sumba specimen exceed those of birds from all other islands, and therefore support Rensch's contention that: "Sumba-Vögel sind langflügeliger und langschwänziger...". The figures presented by Mayr (1944a: 165) also confirm the size difference. Whether this difference is enough for recognition of the subspecies *sumbanus* is a different, and perhaps largely subjective, question. The case for retention of *sumbanus* is weakened by Hoogerwerf's (1966) claim that birds from Komodo are equally large.

Measurements:		wing	tail	tarsus	culmen from posterior edge of knob
Flores	14 ♂	140-154	111-127	34-40.5	40.4-43.4
		(147.7)	(119.7)	(36.5)	(42.0)
	6 ♀	134-143	111-120	34-36	38-41
		(139.8)	(114.8)	(35.2)	(39.6)
	3 (?)	149-153	125-128	39-41	41-44.5
Judging by these figures, the three unsexed birds (collected by Semmelink and Weber), should be males.					
Lombok	3 ♂	145,151,153	121-131	36-38	43.2-46
	3 (?)	142-146	119-123	36-37½	41.8-45
Sumbawa	♂	147	118	40	44
Alor	♂	153	123	38	43
Sumba	(?) (= ♂)	155	135	40	46

The Sumbawa specimen is from the Forsten collection (1842); it is a syntype of *P. b. neglectus* (RMNH cat. no. 1); all other syntypes are from Flores, as listed above.

Amandava amandava flavidiventris (Wallace)

Estrelda flavidiventris Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 495 – Timor and Flores.

Collectors.— Semmelink, Allen (at least 8, cf. Sharpe, 1890: 323-324), Everett, Rensch (2), de Jong (2), Verheijen (8, MCZ), Verheijen/Schmutz.

Material.— ♂, 1862, Larantoeka (Semmelink, RMNH cat. no. 1); ♂, 26.v.1969, Wangkung, Rahong (Verheijen, RMNH no. 65577); ♀, 23.vi.1971, Wae-Ntjuang, Langkas (Verheijen, RMNH no. 66207); ♂, 24.vi.1970, Ruteng (Verheijen, RMNH no. 65583); ♂, 25.vi.1971, Lingko Watu Mésé, Langkas (Verheijen, RMNH no. 85317); ♀, 27.vi.1971, Wae-Ntjuang, Langkas (Verheijen, RMNH no. 66208); ♂, 29.vi.1971, Langkas, Rahong (Verheijen, RMNH no. 66209); ♂, 5.vii.1971, Lingko-Moak, Langkas (Verheijen, RMNH no. 85318); ♂ im., 16.x.1971, Ruteng (Verheijen, RMNH no. 85321); ♂,12.vi.1976, Longko (Schmutz, RMNH no. 81370). Iris wax-red, bill dark red, legs pale brown.

Eggs: c/1, 4.vi.1954, Potjong (RMNH no. 71747); c/4, 17.vi.1954, Puntu, Mano (RMNH no. 71748); c/4, 31.v.1954, Montjok (RMNH no. 71749); c/1, 7.vi.1954, Wesang (RMNH no. 71750); c/3, 14.v.1955, Mano (RMNH no. 71751); c/2, 23.v.1955, Potjong (RMNH no. 71752); c/2, 6.viii.1955, Mengé (RMNH no. 71753); c/4, 3.vi.1956, Wangkung (RMNH no. 71754); c/6, 5.vi.1957 (RMNH no. 71755); c/4, Mano, 10.vi.1958 (RMNH no. 71756); c/6, v.1959, Wangkung (RMNH no. 71757); c/4, 2.v.1959, Potjong (RMNH no. 71758). The eggs are white, a little glossy.

Some measurements and weights:	RMNH no. 71749	14.0 × 11.0	0.0533
		14.1 × 10.6	0.0496
		14.1 × 10.7	0.0522
		14.2 × 10.8	0.0514
	RMNH no. 71757	13.8 × 9.9	0.035
		13.8 × 10.1	0.0427
		14.2 × 10.5	0.0476
		14.3 × 10.8	0.0514
		14.5 × 10.7	0.0503
		14.6 × 10.8	0.0507

Notes.— This species has the distinction of being the smallest bird of Flores, both in wing-length and in size and weights of its eggs.

Measurements:	wing	tail	tarsus	culmen
6 ♂	44½-46	30½-32½	12.5-13	9.0-10.0
	(45.4)	(31.3)	(12.8)	(9.5)
♂ im.	46	32	14	10.0
2 ♀	46, 46	30½, –	13, 13	10.0, 10.2

Poephila guttata guttata (Vieillot)

Fringilla guttata Vieillot, 1817, Nouv. Dict. d'Hist. Nat. 12: 233 – Îles Moluques = Timor.
Amadina insularis Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 495 – Timor and Flores.

Collectors.— Allen, Weber (3), Rensch (6), de Jong (8), Schmutz (1).
Material.— ♂, not dated, acquired in 1878, Flores (no collector, RMNH cat. no. 13); ♂, xii.1888, Maumeri (Weber, prepared from alcohol, RMNH cat. no. 20); ♂, 9.v.1969, Nisar/Sésok, south coast (Schmutz, RMNH no. 81304).
No eggs (but see notes).

Notes.— Verheijen (1961) recorded that, both on Flores and on Palué, Zebra finches were only seen in the immediate vicinity of the coast. Although Father Verheijen did not collect eggs of this species on Flores, he obtained several clutches on Roti and the adjacent islet of Dao or Ndao (Verheijen, 1976: 18-19).

Erythrura hyperythra obscura (Rensch)

Chlorura hyperythra obscura Rensch, 1928, Orn. Mber. 36: 6 – Sita (700 m), West-Flores.

Collectors.— Everett (1), Rensch (2), Verheijen (2, MCZ), Verheijen/Schmutz.
Material.— ♀, 14.v.1971, Langkas, Rahong (Verheijen, RMNH no. 85316); ♂, 17.v.1976, Lingko Ncilor (Schmutz, RMNH no. 81313).
Eggs: Verheijen (1964: 200) records nests found in the months May and June. There is one clutch in his collection, but its identification is very dubious.

Notes.— The subspecies *obscura* was placed in the synonymy of *E. h. intermedia* by White & Bruce (1986: 420-421), but without explanation, unless the remark: "No further subdivision seems necessary in this species with a range of broken, isolated popula-

tions", be taken as such. Lacking specimens from Lombok (*intermedia*), I have been unable to make a comparison with Rensch's diagnosis of *obscura*, and until a critical comparison may prove otherwise, I accept it.

The sexes differ in that the male has more black on the forehead, and the blue of the forecrown deeper in colour and extending farter backwards, than the female; the brown colour of the sides of the face and the underparts is darker in the male than in the female. In this connection I note that in the original description of *obscura*, Rensch compared 5 ♂ ad. from Sumbawa and Flores, with 5 ad., of which he did not record the sex, of *intermedia* from Lombok. One of these (the one he collected, cf. Rensch, 1931a: 602) was certainly a female; this may explain in part why Rensch found the cheeks and underparts of *obscura* darker brown than those if *intermedia*. The differences in size as well as in colour were confirmed by Ziswiler, Güttinger & Bregulla (1972: 19, 23), but note that their series of *intermedia* consisted of 4 ♂, 7 ♀. Of *obscura*, they examined 5 ♂ and one ♀ (from Sita, Flores, hence undoubtedley the bird listed as ♂ juv. by Rensch, 1931a: 603).

Measurements:	wing	tail	tarsus	culmen
♂	56	29	15.7	10.0
♀	58	29	16.2	9.8

Lonchura molucca propinqua (Sharpe)

Uroloncha propinqua Sharpe, 1890, Cat. Birds Brit. Mus. 13: 368 – Flores.
Uroloncha kangeangensis Vorderman, 1893, Nat. Tijdschr. Ned. Ind. 52: 199 – Kangean.
Munia molucca vagans Meise, 1929, J. f. Orn. 77: 440 – Binongka (Tukang besi-Inseln).

Collectors.— Semmelink, Allen, Weber, ten Kate, Everett, Rensch (1), de Jong (2), Verheijen/Schmutz.
Material.— (?) ad., (?) juv., 1862, Larantoeka (Semmelink, RMNH cat. nos. 4, 5); (?), iv.1891, Sika (ten Kate, RMNH cat. no. 6); (?), 5.vi.1969, Nunang, 650 m (Schmutz, RMNH no. 81368); ♀, 19.ix.1970, Kisol (Verheijen, RMNH no. 65576); ♂, ♀, 28.vii.1971, Langkas, Rahong (Verheijen, RMNH nos. 85320, 66226); ♂, ♀, 20.ii.1978, Waé-Wako, 180 m (Schmutz, RMNH nos. 81364, 81365).
Eggs: c/3, 27.vi.1956, Dampék (RMNH no. 71740); c/4, 22.iii.1960, Mataloko (RMNH no. 71741); 2 c/1, 1.v.1960, Palué (RMNH nos. 71742, 71743); c/3, 1.v.1960, Palué (RMNH no. 71744); c/2, 20.vi.1960, Palué (RMNH no. 71746); c/4, 3.v.1961, Mataloko (RMNH no. 71745). The eggs are white.

Some measurements and weights:	RMNH no. 71741	15.8 × 10.7	0.0564
		16.1 × 10.9	0.0584
		16.3 × 10.8	0.0574
		16.6 × 10.7	0.0538
	RMNH no. 71744	14.4 × 11.0	0.051
		15.0 × 10.9	0.0515
		15.2 × 10.7	0.0519
	RMNH no. 71745	16.4 × 11.0	0.0564
		16.9 × 11.3	0.0594
		17.0 × 11.3	0.0623
		17.3 × 11.5	0.0635

Notes.—

Measurements:	wing	tail	tarsus	culmen
2 ♂	52, 52	-, 36	15.5, 15.7	11.4, 12
3 ♀	51, 51, 51	36-40	15-16	11, 11, 12

Lonchura punctulata blasii (Stresemann)

Munia punctulata blasii Stresemann, 1912, Novit. Zool. 19: 317 – Timor-Deli.

Collectors.— Semmelink, Allen, Everett, Rensch (6), Verheijen (2, MCZ), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 11, mounted); 16 ♂, 12 ♀, 1(?), months i, iv, v, vi, vii, viii, xii, years 1968, 1969, 1971 (Verheijen/Schmutz).
Eggs: 14 clutches of 1 (2 ×), 2 (2 ×), 3 (3 ×), 4 (2 ×), 5 (2 ×) and 6 (3 ×) eggs, from the months March (5), April (7), May (1) and July (1), (RMNH nos. 71726-71639). The eggs are white.

Some measurements and weights:	RMNH no. 71729	14.6 × 11.0	0.0603
		14.8 × 10.9	0.0607
		15.0 × 11.0	0.0607
		15.1 × 11.1	0.0592
		15.2 × 10.7	0.062
		15.4 × 11.0	0.063
	RMNH no. 71731	14.0 × 11.1	0.0534
		14.2 × 11.0	0.0555
		14.5 × 11.1	0.0536
		14.6 × 10.9	0.0535
		14.8 × 11.2	0.054
	RMNH no. 71735	13.9 × 10.3	0.0512
		14.1 × 10.6	0.0549
		15.5 × 10.4	0.0551
		15.7 × 10.8	0.0532

Notes.— *Lonchura punctulata* is a widely-distributed species, which shows a considerable amount of geographical variation. The most important variation is found in three characters: general size; colour-pattern of the breast and the flanks, which look either scaly, or, more finely, vermiculated; and colour of the upper tail-coverts, and edges to the rectrices. Minor characters which have been used for subspecific discrimination are the depth of the brown colour, and the presence of pale shaft-streaks to feathers of the head and mantle. Mayr et al. (1968: 375-377) list 12 subspecies (one of which with a question-mark). A superficial comparison of material from Flores with specimens from neighbouring islands, gave me the impression, that the validity of some of the subspecies required confirmation. This led to the following review:

Lonchura punctulata blasii (Stresemann)

Characters.— Small; upper tail coverts and central rectrices tinged strongly with straw-yellow; scaly markings om breast and flanks dark, almost blackish brown. Bill averaging larger than in *sumbae*.

Distribution.— The Lesser Sunda Islands from Flores eastwards, including Savu but not Sumba.

Lonchura punctulata sumbae Mayr

Lonchura punctulata sumbae Mayr, 1944, Bull. Amer. Mus. Nat. Hist. 83: 169 – Sumba Island.

Characters.— Small; very similar to *L. p. blasii*, but the scaly pattern on (especially) the breast, also the flanks, averages a little less dark, dark brown as in *L. p. nisoria* and *L. p. particeps*, not almost blackish brown. The bill averages smaller than in all other

subspecies, although the difference from *blasii* and *particeps* is slight.

Mayr's (1944a) diagnosis of *L. p. sumbae* reads: "Similar to *blasii* (Timor), but U-shaped bars of underparts rufous brown, not blackish brown as in *blasii*, or rufous as in *particeps* or *fortior*; white area on each feather of underparts narrower, brown vermiculated more irregular; under tail-coverts more heavily barred; differs from *fortior* (Lombok, Sumbawa) by smaller size and darker underparts.... Savu and Flores birds have the blackish brown bars of *blasii*".

I cannot support Mayr's statement that *particeps* and *fortior* (a synonym of *nisoria*) would be "rufous" on the underparts, for as stated above, I fail to see any difference at all between the underparts of *sumbae* and "*fortior*". Nor can I agree, however, with White & Bruce (1986: 423), who ascribe the similarity in underparts between *sumbae* and *nisoria* to "intergradation", and by no stretch of the imagination could I call the underparts of these subspecies "reddish", as they do.

Distribution.— Sumba.

Lonchura punctulata particeps (Riley)

Munia punctulata particeps Riley, 1920, Proc. Biol. Soc. Washington 33: 57 – Rano Lindoe, Celebes.

Characters.— Small; upper tail coverts with a little less yellow than in *blasii* (or is the difference due to wear?); the scaly pattern of breast and flanks averages slightly less dark than in *blasii*, agreeing with *nisoria* and *sumbae*. Bill as in *blasii*.

Distribution.— South-western and Central Sulawesi (Celebes). Records from the northern peninsula of Celebes are erroneous.

Lonchura punctulata nisoria (Temminck)

Fringilla nisoria Temminck, 1830, Recueil d'Ois. 3 (livr. 84): pl. 500 fig. 2 – Java.

Munia punctulata fortior Rensch, 1928, Orn. Mber. 36: 7 – Swela (400 m), Lombok.

Munia punctulata fretensis Kloss, 1931, Treubia 13: 363 – Kuala Lumpur, Selangor, Federated Malay States.

Lonchura punctulata baweana Hoogerwerf, 1963, Bull. Brit. Orn. Cl. 83: 38 – Bawean.

L[onchura] p[unctulata] holmesi Restall, 1992, Avicult. Mag. 98: 115 – based on cage-birds, presumed to originate from near Pontianak and Banjermasin, Borneo.

Characters.— Small; upper tail coverts and central rectrices light pearl-grey, without yellow (occasionally there may be a trace of yellow), scaly markings on breast and flanks varying from dark brown to blackish brown (not clearly different from *blasii*, but in series perhaps a trifle lighter). Bill large. Riley states correctly: "rump barred with white" (although this is variable and sometimes almost absent), whereas this is much less in *blasii*, *sumbae* and *particeps*, and what there is, is yellowish rather than grey-white.

Distribution.— The Malay Peninsula, northwards to Trang and Phattalung (cf. Medway & Wells, 1976: 394), Sumatra, Java, Bali, Lombok, Sumbawa, Bawean, and the northern peninsula of Celebes. In the last-mentioned locality, and perhaps in others, it has presumably been introduced. Birds recently found in south-eastern Borneo (Harvey & Holmes, 1976), would probably also belong to this subspecies.

Notes.— Medway & Wells (1976: 394) suggest that *L. punctulata* may have been introduced in Malaya; they mention that Kelham, "working in Singapore and the western Malayan states in the 1870s", did not collect it. However, Horsfield & Moore (1858: 506) list a specimen from Penang, received from Dr Cantor in 1854. This bird was later transferred to the British Museum (BM no. 60.4.16.340), which also holds two specimens

from Malacca, collected by Wallace in 1854 (BM nos. 73.5.12.1370 and 81.5.1.4480), and a series of 36 skins from various parts of Malaya, and Singapore, collected by W. Davison in the years 1875-1879. These records do not disprove the suggestion that the species was originally introduced, but they put back in time the date of the presumed introduction.

From Bawean, our collection contains two adult birds: a paratype of *L. p. baweana* (leg. Franck, 1928), and one leg. Vorderman, 1896. Also two paratypes in juvenile plumage. The adult paratype shows the rather light markings of the underparts which Hoogerwerf made an important subspecific character; the markings are not lighter, however, than in the lightest Java birds. The other adult bird has the markings darker, agreeing in this respect with average Java birds. The smaller brown throat-patch ascribed to *baweana* is entirely due to the make-up of the skins. The two paratypes of *baweana* in juvenile plumage differ, contrary to Hoogerwerf's claim, in nothing from Javanese birds in juvenile plumage, and are not paler. I conclude that *baweana* is a synonym of *nisoria*.

Specimens from the range ascribed to *L. p. fortior* are poorly represented in the collections studied by me. It is a size-race, that was differentiated merely on the basis of wing-length: Java and Sumatra 50-53 mm, Lombok and Sumbawa 53-55 mm, according to Rensch (1928a). The variation found by me in a not particularly large series of *nisoria* from Java and Sumatra is 50-54 mm. Two birds from Lombok have wing-lengths of 52 and 53 mm. One specimen examined by Hoogerwerf, had a wing-length of 52 mm. Inadequate as my material is, I cannot see any argument for retention of *fortior.* The type locality of *fortior* is Lombok, as cited above, not Sumbawa as claimed by White & Bruce (1986: 423).

Later, Rensch (1931a: 598) added, that *fortior* would have the brown of chin and throat less extensive than *nisoria*, and the white parts of the feathers of breast and belly more extensive. My comment on this is the same as that given in the discussion of *baweana*. White & Bruce (1986: 423) have already dismissed *fortior* with the remark: "the differences distinguishing... *fortior*... seem insignificant".

No material from Sumbawa has been available. Zoogeographically, I find it surprising that this island is inhabited by *L. p. nisoria*, and the adjacent island of Flores by *L. p. blasii*. Perhaps, these are fairly recent range-extensions, helped by Man.

The validity of *fretensis* was questioned by Hoogerwerf (1963a), but it was still accepted by Mayr et al. (1968: 376) and Van Marle & Voous (1988: 208). I have been unable to find any difference in plumage or in measurements (see table), which might justify its retention.

Five specimens from Tondano, collected by Coomans de Ruiter in 1939 (RMNH), and recorded by Van Marle (1940a) and Stresemann (1940a: 37) as *L. p. particeps*, are quite unequivocally *L. p. nisoria*. Undoubtedly, the population owes its origin to introductions from Java.

I have also examined two specimens from Bangkok, 8.viii and 8.xii.1917 (leg. Williamson, BM nos. 1955.1.4236 and 1955.1.4231), which are clearly *nisoria*. They must have been imported, for all other specimens from Bangkok in the Williamson collection are *topela*.

The recently-described *holmesi* is considered another synonym of *nisoria,* based on birds introduced to Borneo from Java. For a further evaluation of this form, see the discussion of *L. p. insulicola.*

Lonchura punctulata punctulata (Linnaeus)

[*Loxia*] *punctulata* Linnaeus, 1758, Syst. Nat. (ed. 10), 1: 173 – Asia.

Munia lineoventer Hodgson, 1836, Asiatic Res. 19: 154 – Nepal (reference not verified).

Characters.— Large; upper tail-coverts brownish-orange; markings of the breast of the "*punctulata*"-type.

Distribution.— Practically the whole of India; the southern and eastern parts of Nepal; Sikkim; southern Bhutan; Sri Lanka (Ceylon); south-western Burma.

Lonchura punctulata subundulata (Godwin-Austen)

Munia subundulata Godwin-Austen 1874 (June), Proc. Zool. Soc. Lond. (1874): 48 – Manipúr valley both on Lake Logtak and the head of the Barak river.

M[*unia*] *superstriata* Hume, 1874 (October), Stray Feathers 2: 481 footnote – Tavoy.

Lonchura punctulata catervaria Koelz, 1954, Contrib. Inst. Reg. Expl. 1: 19 – Mawphlang, Khasi Hills.

Characters.— Large, upper tail-coverts mostly as in *topela*, but sometimes orange as in *punctulata*, markings of the breast variably intermediate between the "*punctulata*" and the "*topela*" types.

Distribution.— Eastern Assam, Manipur, western and southern Burma.

Notes.— Birds from Manipur and much of Burma are very variable, intermediate between the well-differentiated *punctulata* and *topela*. It is a moot question, whether such populations should be indicated by a separate subspecific name, but in view of the wide range of these intermediate populations, I consider it convenient to do so. This is also in agreement with current classifications.

Smythies (1986: 396 and pl. xi fig. 6) gives in the text the names *subundulata* (as the common subspecies) and *topela* (status uncertain), but the illustrated bird seems to belong to the nominate race, at least is not *topela*-like, and is captioned *L. p. lineoventer*. As *lineoventer* is a synonym of nominate *punctulata*, this is correct, but there is no mention, under either name, of this subspecies in the text.

Lonchura punctulata topela (Swinhoe)

Munia topela Swinhoe, 1863, Ibis 5: 380 – In China it is abundant from Canton to Shanghai, and in Taiwan all throughout the plains.

Lonchura punctulata yunnanensis Parkes, 1958, Proc. U.S. Nat. Mus. 108: 285 – "hills around Tengyueh" [= Tengchung], western Yunnan, alt. 6,000 feet.

Characters.— Large; upper tail coverts tinged greenish yellow (not straw yellow as in *blasii*); markings of the breast of the "*topela*"-type, quite different from those found in the preceding subspecies.

Distribution.— Eastern Burma, Thailand, Indo-China, southern China, Hainan and Taiwan. The birds introduced into eastern Australia, where the species is now widely distributed (Blakers et al., 1984: 604, 609), have been assigned to this subspecies (Boles, 1988), as have those introduced in Hawaii (Violani, 1979).

Notes.— The original description of *Munia topela* appeared in a paper on the birds of Taiwan, and its distribution was given as quoted above. Later authors, including Parkes (1958: 285) and Mayr et al. (1968: 376) have listed Amoy as the type locality. About Amoy as the type locality, see Deignan (1963: 217), who says: "type locality (inferentially) restricted to Amoy... by Sharpe... 1890, *p.* 352". The fact that, in the place indicated, Sharpe refers to seven specimens from Amoy, ex Seebohm coll., as "Types of the species", does in my opinion not constitute a valid restriction of the type locality,

and even less a lectotype-designation (ICZN, 1985: art. 72(b) (vii)). Warren & Harrison (1971: 564) list a specimen from Amoy as a syntype, and comment correctly: "This specimen is labelled as the type but the author refers to a large series".

In view of the title and contents of the paper in which the original description appeared, it would be more logical to have 'Formosa' as type locality, and this is also the opinion of Chinese authors (Cheng, 1987: 953), which I share. As long as the populations inhabiting Taiwan and the east coast of China are considered consubspecific, the point is, of course, a purely academic one.

The four specimens from Yunnan examined by me, one of which is from the type-locality of *L. p. yunnanensis*, are not perceptibly different from topotypical *L. p. topela*, under which name I bring them.

Lonchura punctulata cabanisi (Sharpe)

Munia cabanisi Sharpe, 1890, Cat. Birds Brit. Mus. 13: 353 – nomen novum for *Oxycerca* (*Uroloncha*) *Jagori* Cabanis, 1872, nec *Munia* (*Dermophrys*) *Jagori* Martens, 1866.

Oxycerca (*Uroloncha*) *Jagori* Cabanis, 1872, J. f. Orn. 20: 317 – Luzon.

Characters.— Small; similar to *topela* from Taiwan, but smaller, with also an on average smaller bill; markings of the breast even a little finer and lighter (but variable!); upper tail-coverts and edges of the rectrices greenish-yellow as in *topela*.

Distribution.— Luzon, Mindoro and Panay in the Philippines; also found on the Micronesian islands of Yap and Babelthuap (Palau group), where probably introduced (Baker, 1951: 340).

Lonchura punctulata insulicola subspecies nova

Type: ♂,13.iii.1865, Réunion (leg. Pollen & van Dam, RMNH cat. no. 36).

Characters.— Large; upper tail coverts straw yellow (as in *blasii*), markings of the breast coarse, of the "*punctulata*"-type.

Distribution.— Mauritius, Réunion and Mahé (Seychelles).

Notes.— The characters of specimens from Réunion have first been discussed by Büttikofer (1892): "Our specimens from Bourbon agree entirely with *M. nisoria* from Java, with the exception of the upper tail-coverts and centre tail-feathers, which are not ashy gray, but sensibly tinged with pale olive-green, in which character they agree with *M. topela*. They are, however, undoubtedly to be united with *M. nisoria*".

With the introduction of ternary nomenclature, the names *M. p. nisoria* (cf. Meinertzhagen, 1912: 91) and *M. p. punctulata* have been used for birds from the Mascarenes. To this, Berlioz (1946: 66) commented: "Les spécimens de La Réunion que possède le Muséum de Paris, tout en étant certainement moins chaudement colorés que ceux de l'Inde, présentent tout aussi bien des caractères ambigus référables tant aux formes indochinoises qu'aux formes de Malaisie". Presumably it is on the basis of this evaluation that Mayr, Paynter & Traylor (1968: 376) have referred birds from Mauritius, Réunion, and the Seychelles to *L. p. topela*.

I have examined the same six specimens from Réunion that were available to Büttikofer (RMNH cat. nos. 33-38). I have also examined one specimen from Mahé (BM no. 1906.12.21.431, cf. Nicoll, 1906: 706), but none from Mauritius. I cannot agree with Büttikofer that they are *nisoria*, for not only do they have straw yellow upper tail coverts, but in addition they are clearly larger, too large for *nisoria*. On the other hand, they are not *topela* either, for they have the markings of the breast of the "*punctulata*/*nisoria*"

type, not of the much finer "*topela*" type. The most obvious places of provenance for introduced birds on Réunion would be coastal India or Sri Lanka (Ceylon), but the deep brown-orange upper tail-coverts of nominate *punctulata* are completely absent.

In conclusion, birds from Réunion are neither nominate *punctulata*, nor *nisoria*, nor *topela*. Their characters do not suggest a hybrid population between any of these forms either. The possibility that through some sort of deficiency, they are *punctulata* which have lost the bright orange colours, must be envisaged, but does not seem very likely.

It has been generally assumed that *Lonchura punctulata* was introduced to the Mascarenes, but when exactly, and from where, is lost in the mist of history, see the review by Cheke (in Diamond, 1987: 80). Meinertzhagen's claim that on Mauritius it was: "Introduced from Java about 1800", is given without a reference, and therefore cannot be verified. Anyway, the characters of the population clearly disprove such a provenance.

It remains to find an explanation for the existence of this population, and the question of how to deal with it nomenclaturally. Its characters are sufficiently distinctive, to regard it as a moderately differentiated subspecies, less distinctive than some, but more distinctive than others (*sumbae*, *particeps*). I can think of three possible explanations, each of which will be further discussed below: (1) The species was introduced from a mainland locality where an as yet undescribed subspecies occurs. (2) The species was introduced from the mainland, but has undergone such rapid change since its introduction, that within a century or even less it has differentiated so much from its ancestral form, that it is now a separate subspecies. (3) The occurrence on at least one of the islands is not due to recent introduction by man, but is natural.

Explanation (1) seems unlikely, as the distribution and geographical variation of *L. punctulata* throughout its range is now well-known; moreover, it is reasonable to assume that an 18th century introduction would originate from an old-established coastal trading town, not from some isolated inland area, where an endemic subspecies with a limited range might have been overlooked. Explanation (2) is not one I like, but it has to be considered seriously as, significantly in this very same genus *Lonchura*, Diamond (1972: 411), discussing *L. spectabilis gajduseki*, a subpecies with cinnamon underparts, apparently confined to the Karimui Basin in New Guinea, came with the following conclusion: "Either this race must have slowly evolved in some part of the basin not yet discovered – an unattractive possibility because of the circumscribed size of the basin and the large areas of grassland necessary for *L. spectabilis* – or else it must have evolved in a very short time, perhaps as little as 15 years". In support of this last hypothesis, Diamond mentioned studies of introduced *Passer domesticus* populations in North America, which were supposed to have undergone morphological changes in a very short time. Since Diamond wrote, however, outside the Karimui Basin, a population of *L. spectabilis* has been discovered which is even deeper cinnamon on the underparts than *gajduseki*; it was named *L. s. sepikensis*, and is found in the Sepik Plains (cf. Jonkers & Roersma, 1990). This makes it likely that when *L. s. gajduseki* colonized the Karimui Basin, it already had the characters which Diamond believed had been developed in such an extremely short time; therefore it is a case of explanation (1), not explanation (2) as Diamond thought. There remains to be discussed explanation (3); one could call it an explanation by elimination. Whether it is correct I cannot say, but whichever explanation is the right one, by current standards the Mascarene birds are sufficiently distinct to be named as a separate subspecies. It is a conclusion I have arrived at only after long hesitation.

The paper by Restall (1992) with the description of a new subspecies, *L. p. holmesi*, from Borneo (Pontianak and/or Banjarmasin) became available only some time after the preceding notes were completed. At first sight it might seem to contradict my conclusion that the discovery of new subspecies from well-known coastal regions is unlikely. But in spite of the table of characters of the various subspecies presented by Restall, I consider it likely that the species is a recent introduction in Borneo (certainly near Pontianak, where Coomans de Ruiter would not have missed it, if it had been present in the 1930s). The description of *holmesi* does not separate it convincingly from *nisoria*. The colour descriptions given by Restall are not directly comparable with mine. For example, he describes the upper tail-coverts of *blasii* as "Yellow straw", similar to my description of those parts, but then has them "Warm olive" in *sumbae*, when in my opinion the upper tail-coverts of *blasii* and *sumbae* are identical. Interesting, but difficult to interpret, is Restall's statement that there is a clear sexual difference in tail-length, for none of the subspecies examined by me show such a difference. More directly relevant: the tail-lengths given, 30 and 35 mm, indicate that *holmesi* is a small subspecies (like *nisoria*), and not close to *insulicola.*

Without mentioning his description published three years previously, Restall (1995) again described *holmesi* as a new subspecies, this time diagnosing it as more or less intermediate between *nisoria* and *baweana*. Since I regard *baweana* as a synonym of *nisoria*, this supports my opinion that *holmesi* does not differ from *nisoria*. No type specimen was indicated in the 1992 description, which was based on live cage birds. In the 1995 description, three specimens in the American Museum of Natural History are indicated as types (syntypes), collected at Semitau in western Borneo. There is no indication that these specimens were skinned from captivity and no dates are given. Therefore it is impossible to ascertain from the evidence presented, whether they had been seen by Restall before he published his 1992 decription.

Measurements:		wing	tail	tarsus	culmen
Flores (*L. p. blasii*)	16 ♂	47.5-54	32-36	13-14	10.2-11.2
		(50.4)	(33.5)	(13.6)	(10.8)
	12 ♀	49-52.5	30-37	13-14.3	10-11
		(50.2)	(33.4)	(13.7)	(10.7)
Timor (*L. p. blasii*)	2 ♂	52, 52	32, 36	13.5, 14	10.8, 11.2
	2 ♀	50, 50	32, 32	13.6, 14	10.6, 10.9
	(?)	52	33.5	14.4	11.0
Sumba (*L. p. sumbae*)	5 ♂	49-51	34-38	12.8-14	10-10.8
		(50.2)	(35.8)	(13.6)	(10.2)
	6 ♀	49-51	29-39	13-14	9.6-11
		(50.0)	(34.8)	(13.5)	(10.2)
Southern Sulawesi (*L. p. particeps*)	3 ♂	51-54	33-40	13.8-15	10.8-12
		(52.7)	(36.7)	(14.5)	(11.3)
	2 ♀	50, 52	30.5, 38	13.4, 14	11.2, 11.0
Sumatra (*L. p. nisoria*)	8 ♂	50-54	33.5-39	13.2-15	11.0-12.2
		(52.8)	(36.6)	(14.4)	(11.7)
	6 ♀	50-53	33-37	13.7-14.7	11-12.8
		(51.6)	(34.9)	(14.1)	(11.9)
Java (*L. p. nisoria*)	29 ♂	50-54	30-40	13-15	10.2-12
		(52.0)	(34.9)	(14.0)	(11.2)

	22 ♀	50-55	30.5-40	13.5-15.5	10.4-11.8
		(52.7)	(34.8)	(14.3)	(11.1)
Bali (*L. p. nisoria*)	♂	52	35	14.2	11.0
	♀	53	35.5	14.2	11.8
Bawean (*L. p. nisoria*)	♂	51	35	14.2	12
	(?)	53	31	14.2	12.0
Lombok (*L. p. nisoria*)	♂ im.	53	33	15	11.6
	(?)	52	32.5	14	11.0
Northern Sulawesi (*L. p. nisoria*)	5 ♂	49-51	34-37	13.3-14.7	10.9-11.1
		(50.1)	(35.7)	(14.0)	(11.0)
Sri Lanka (*L. p. punctulata*)	2 ♂	56, 56			
	3 ♀	54-56	32-39	14.9-15	12.0-13.0
		(55.0)			(12.4)
Taiwan (*L. p. topela*)	9 ♂	53-57	36-40	13.5-15	11.6-12.8
		(54.5)	(38.0)	(14.3)	(12.2)
	3 ♀	54-55	36-38	14.2-14.8	12.0-12.1
		(54.7)	(37.0)	(14.6)	(12.0)
	7 (?)	53-55	31-39	13.7-14.8	11.5-12
		(54.4)	(34.1)	(14.1)	(11.8)
Hainan (*L. p. topela*)	2 (?)	55, 55	33, 36	14.2, 14	12.0, 12.0
Yunnan (*L. p. topela*)	2 ♂	55, 55	39, 39	–	11.8, 12
	♀	55	39.5	–	11.9
	(?)	53	38	14.4	12.1
Annam (*L. p. topela*)	♂	56	37.5		
	5 ♀	54-56	36-42	–	11.2-12.0
		(54.7)	(38.1)		(11.6)
Cochinchina (*L. p. topela*)	♂	55	32	14.2	10.4
Thailand (*L. p. topela*)	12 ♂	53-56	36-43.5	14-15.2	11.9-13.1
		(55.0)	(38.6)	(14.7)	(12.2)
	7 ♀	54-56	35-40	14.2-15	11.5-12.8
		(54.7)	(37.9)	(14.6)	(12.2)
Burma, Moulmein (*L. p. topela*)	♂	55	37	14.5	11.0
Burma, Naga Hills (*L. p. topela*)	♀	55	31+	–	12.0
Luzon (*L. p. cabanisi*)	3 ♂	49-50	34-37	–	11.3-12.3
		(49.7)	(35.2)	–	(11.6)
	3 ♀	49-50	30-36	–	11.0-11.7
		(49.5)	(33.3)	–	(11.3)
	(?)	50			
Réunion (*L. p. insulicola*)	5 ♂	54-56	35-40	13.6-15	11.6-12
		(54.9)	(37.5)	(14.4)	(11.9)
	♀	53.5	33.5	14	12.0
Seychelles, Mahé (*L. p. insulicola*)	(?)	54	38	14	11.0

Lonchura quinticolor (Vieillot)

Loxia quinticolor Vieillot, 1807, Ois. Chant.: 85, pl. 54 – les Îles Moluques = Timor, designated by Hellmayr (1914: 59) (reference not verified).
Lonchura quinticolor sumbae Restall, 1995, Bull. Brit. Orn. Cl. 115: 143 – Waingapo, Sumba.

Collectors.— Allen, Everett, Rensch (4), de Jong (2), Verheijen (3, MCZ), Verheijen/Schmutz.
Material.— 14 ♂, 11 ♀, 4 (?) from diverse localities in Manggarai (Verheijen/Schmutz, RMNH nos. 65574, 65575, 66227-66245, 81356, 81369, 81429, 81432, 85378-85380, 85387).

Eggs: c/6, 19.v.1951, Bénténg Djawa (RMNH no. 71716); c/6, iii.1952, Bénténg Djawa (RMNH no. 71717); c/5, 23.ii.1953, Mano (RMNH no. 71718); c/2, 4.vi.1954, Potjong (RMNH no. 71719); c/5, 12.vi.1956, Wangkung, Ruteng (RMNH no. 71720); c/2, iv.1958, Mukun (RMNH no. 71721); c/3, 8.iii.1962, Mataloko (RMNH no. 71722); c/5, 18.vi.1962, Mataloko (RMNH no. 71723). The eggs are white, without gloss.

Some measurements and weights:	RMNH no. 71716	16.1 × 12.3	0.0703
		16.3 × 12.1	0.0704
		16.9 × 11.8	0.0691
		17.2 × 11.8	0.071
		17.3 × 12.0	0.0716
		17.9 × 11.6	0.071
	RMNH no. 71718	16.3 × 11.1	0.0672
		16.6 × 11.4	0.0689
		16.8 × 11.8	0.0725
		17.2 × 11.6	0.0744
		17.5 × 11.8	0.0698
	RMNH no. 71719	15.7 × 11.3	0.0666
		16.6 × 11.2	0.0649

Notes.— This is one of the larger members of its genus. There does not seem to be any difference, either in plumage or in measurements, between the sexes.The name *L. quinticolor sumbae*, recently proposed by Restall (1995), is invalid, being a primary homonym of *L. punctulata sumbae*. I do not consider, however, that a replacement name is required, for two reasons. The first is that no other author has found geographical variation in this species, and that the existence of geographical variation worthy of expression in nomenclature requires confirmation. The second, more fundamental reason is that if a division into three subspecies, with ranges as outlined by Restall, is accepted, the type locality of the species should be established first. The species was described from a French collection, and its designated type locality is Timor. This makes it overwhelmingly likely that the type locality of the species should be restricted to Koepang, western Timor, so the subspecies called *"sumbae"* by Restall, actually is the nominate race. Until these points have been cleared up, the application of trinomials in *L. quinticolor* can only cause confusion.

Measurements:	wing	tail	tarsus	culmen
10 ♂	54-58	34-37½	16-17	12.8-14
	(55.8)	(36.4)	(16.4)	(13.3)
10 ♀	54-58	34-38	15.6-16.7	12.8-13.8
	(56.0)	(35.8)	(16.1)	(13.2)

Lonchura pallida pallida (Wallace)

Munia pallida Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 486, 495 – Lombock and Flores.

Collectors.— Allen (1?), Verheijen (1, MCZ).
Material.— ♂, 1862, Flores (Allen, BM no. 73.5.12.1356), "bill and feet light blue, eyes dark" (original notes by Allen).
Eggs: c/1, 4.vi.1954, Potjong (RMNH no. 71724); c/6, 29.v.1959, Léong (RMNH no. 71725). The eggs are white.

Measurements and weights:	RMNH no. 71725	16.0 × 11.0	0.0605
		16.1 × 11.1	0.0618
		16.2 × 10.8	0.0581
		16.2 × 11.1	0.0597
		16.3 × 11.0	0.0604
		16.3 × 11.1	0.0608

Notes.— This is apparently an uncommon species on Flores, as only Allen and Verheijen have obtained it. Rensch (1931a: 597) claims field-observations at Aimere (0-200 m) and Geli Moetoe (1000 m), and Schmutz (MS) observed it at Kenari and Orong. In the Catalogue of Birds (Sharpe, 1890: 346), 5 Wallace-specimens from Lombok are listed, but only one (f. ♂ ad.) from Flores, the specimen examined by me.

Hitherto, Wallace was believed to have been the discoverer of *L. pallida* (on Lombok, in 1856), but Forsten's Bima collection contains a mounted specimen, labelled *Loxia auriventer* Temm. n. sp. ♂ (RMNH cat. no. 1): as in so many cases, the bird arrived in Leiden, was recognized as new and provided with a manuscript-name, but remained undescribed.

Stresemann (1940a: 38) mentioned as first collector of this species in Sulawesi (Celebes), C. Platen, 1878. In our collection are two mounted specimens (RMNH cat. nos. 2 and 3), labelled "Macassar", collected by Teysmann in 1877.

Measurements:	wing	tail	tarsus	culmen
♂	55	32½	16	13

Passer montanus malaccensis Dubois

Passer montanus Var. *Malaccensis* Dubois, 1885, Faun. Ill. Vert. Belg., Ois. 1: 572 – la presqu'île de Malacca et... Java.

Collectors.— Verheijen, Schmutz.
Material.— ♂, 29.x.1969, Ruteng (Verheijen, RMNH no. 65565); ♀ without data, West Flores (Schmutz, RMNH no. 81430).
Eggs: c/5, c/5, c/5, 18.vi.1963, Réo (Verheijen, RMNH nos. 71759, 71760, 71761).

Notes.— According to Schmutz (MS), this species has been established on Flores since about 1955. The subspecific identity has been assumed on the basis of geographical probability (cf. Keve, 1978); I have made no comparisons.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	70	50	16.7	13	10.2
♀	69	48.5	16.3	13	10

Aplonis minor minor (Bonaparte)

L[*amprotornis*] *minor* Bonaparte, 1850, Consp. Gen. Av. 1: 417 – Timor.

Collectors.— Allen, Rensch (4), Verheijen/Schmutz. In the Catalogue of Birds (Sharpe, 1890: 143) only one juvenile specimen (cat. g) from the Wallace Collection is listed.
Material.— 2 ♂, (?) juv., 19.ix.1970, Kisol (Verheijen, RMNH nos. 65371, 65372, 65373); ♀, 21.ix.1970,

Kisol (Verheijen, RMNH no. 65375); ♂, 1.v.1971; Ngalor-Rogo, Langkas, Rahong (Verheijen, RMNH no. 85303); ♀, 25.ix.1972, Manggarai (Schmutz, RMNH no. 85304); ♀, ♀ juv., 28.viii.1976, Poco Nernancang (Verheijen, RMNH nos. 85305, 81302); ♀, 2.ix.1976, Poco Nernancang (Verheijen, RMNH no. 85306); ♂, ♀, 4.ix.1976, Poco Nernancang (Verheijen, RMNH nos. 85307, 85308). Iris bright red, bill and legs black. No moult.

Eggs (fig. 17b): c/3, 26.x.1960, Mataloko (RMNH no. 71763); c/1, 8.vi.1961, Mataloko (RMNH no. 71764); c/3, 13.vii.1961, Mataloko (RMNH no. 71765); c/3, 29.ix.1961, Mataloko (RMNH no. 76586); c/2, 19.v.1962, Mataloko (RMNH no. 71766); c/3, 2.vi.1962, Mataloko (RMNH no. 71767); c/2, c/2, 7.vi.1962, Mataloko (RMNH nos. 71768, 71769); c/3, 13.vi.1962, Mataloko (RMNH no. 71770); c/4, 18.vi.1962, Mataloko (RMNH no. 71771); c/2, c/2, 18.vi.1962, Mataloko (RMNH nos. 71772, 71773). The eggs are pale blue, moderately mottled with light brown. They are indistinguishable, in colour as well as in measurements and weights, from the eggs of *A. panayensis strigata.*

Some measurements and weights:	RMNH no. 71763	23.2 × 18.5	0.2604
		24.0 × 19.2	0.2420
		24.0 × 19.4	0.2700
	RMNH no. 71765	23.7 × 18.8	0.2637
		24.1 × 18.3	0.2602
		24.2 × 18.5	0.2648
	RMNH no. 71766	24.8 × 18.5	0.2660
		25.1 × 18.3	0.2683
	RMNH no. 71767	24.1 × 18.5	0.2578
		24.6 × 18.1	0.2505
		25.2 × 18.3	0.2674
	RMNH no. 71768	22.9 × 17.5	0.2209
		24.7 × 17.7	0.2221

Notes.— The peak of the breeding-season is apparently in June. This is worth recording, as in Java the species is believed to be a non-breeding visitor, an east-west migrant from the Lesser Sunda Islands, and: "In Java the birds do appear in the end of May and leave again in September" (Van Bemmel, in Van Bemmel & Voous, 1951: 36; see also Hoogerwerf, 1965: 287). This would mean that the breeding-season in the Lesser Sunda Islands coincides completely with the presumed migration to Java, a matter that will require a lot of explanation before it can be accepted. The status of *A. minor* in Java certainly deserves further investigation. The specimens examined by me range in dates from 24 April to 24 July, rather earlier than as given by Van Bemmel. All nine birds (with one possible exception, of which I am not sure) are in heavy moult. All records are from high elevations (850-2000 m). On the Lesser Sunda Islands, *A. minor* is not in the first place a mountain bird, ranging from sea-level to perhaps 1500 m. As far as I am aware, Rensch (1928b) was the first to record the species from Java ("eine große Serie... vom Berge Tjerimai"); the first to collect it in Java probably was H. W. van der Weele (four specimens from Tirtasari, West Java, April/May 1910). Dr Somadikarta (in litt., 11.iii.1988) has provided me with a list of the MZB-material, on which van Bemmel's data were based: 1, June 1928, G. Tjerimai, West Java; 1, July 1939, Tengger, East Java; 1, May, 3, June and 1, August 1941, Bandjarwangi, Tjikadjang, West Java; 1, August 1941, G. Lawoe, Middle Java. This shows that the species may be found in all parts of Java.

White & Bruce (1986: 390) do not recognise subspecies, but I would hesitate to accept their conclusion without further investigation. Absence of geographical variation would seem to contradict Deignan's opinion (1955) that this is a relict species, in the

process of being replaced by its close relative *A. panayensis* wherever the two come into contact. On the other hand, the occurrence of the peculiar endemic subspecies *A. panayensis gusti* on Bali, and of other well-marked subspecies on the West Sumatra islands, the Nicobars and the Andamans, indicates that *A. panayensis* is certainly not a recent colonist in these regions. This makes it less likely that Deignan was right in believing *A. panayensis* to be an expanding species. To verify Deignan's statement that *A. p. strigata* is "a larger and stronger race" than *A. minor,* which was at the basis of his theory that the former is replacing the latter, I measured some specimens of *A. p. strigata* from Java and of *A. p. gusti* from Bali. The measurements show that the differences are negligible. Actually, *A. minor* is a little longer-winged than *A. p. strigata*, but the latter exceeds *A. minor* a trifle in length of the tail and the bill. Deignan's speculative, and therefore stimulating, paper has made clear how much more research is needed, before the relationships between the closely related species (or subspecies?) *A. panayensis* and *A. minor* may be understood. Mayr (1944a: 143) regarded *A. metallica* as the closest relative of *A. minor,* but his opinion has not been shared by later authors.

The table of measurements suggests that specimens of *A. minor* from Flores are smaller than specimens from Timor, and agree with birds from Sumba, the small size of which had been noted previously (cf. Hellmayr, 1914: 43; Mayr, 1944a: 143). But the series are short and, as Mayr observed, the difference is not sufficient for subspecific separation. It also deserves notice that birds from Java average a little larger than birds from Flores, providing further evidence that they do not belong to the same population.

Of the six RMNH specimens from Timor, one ♂ was collected by H.A. Lorentz in 1909; the other five are the syntypes of *A. minor:* four of these have been collected by S. Müller, in 1828/1829, and the fifth one (the unsexed bird) by F. Péron in 1801/1803.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
Flores (*A. minor*)					
4 ♂	96-100	51-58	19-21	18.2-20.4	13.2-15
	(98.0)	(54.3)	(20.1)	(19.4)	(14.3)
5 ♀	92-98	51-55½	19.2-21	18-20.4	13.7–15
	(95.3)	(53.5)	(20.0)	(19.2)	(14.4)
Timor (*A. minor*)					
4 ♂	101-107	56-60½	20-21	19.2-21	13.6-15.4
	(103.5)	(58.6)	(20.7)	(20.1)	(14.5)
♀	105	55	21.4	20.1	14.6
(?)	106	59	20	20.2	15.2
Binongko (*A. minor*)					
♀	100	59	20.4	19	14.5
Java (*A. minor*)					
4 ♂	98-102	55-60	19.8-21	18.6-20	14.2-15
	(100.3)	(57.8)	(20.5)	(19.2)	(14.7)
5 ♀	97-102	49-57	20.6-21.6	19-21	14.4-16
	(98.6)	(52.5)	(21.2)	(20.0)	(15.2)
Java (*A. panayensis strigata*)					
10 ♂	95-101	58-62½	20.9-22.7	21-24	15-18.2
	(97.7)	(60.0)	(21.5)	(22.3)	(16.6)
Bali (*A. panayensis gusti*)					
2 ♂	99, 102	56, 57	20.3, 21.2	20.0, 20.0	14.9, 15.0
♀	-	51	21.2	19	14

Gracula religiosa venerata Bonaparte

G[*racula*] *venerata* Bonaparte, 1850, Consp. Gen. Av. I: 422 – ex Sumbava.
Gracula venerata mertensi Rensch, 1928, Orn. Mber. 36: 48 – Sita (6-800 m) Westflores.

Collectors.— Semmelink, Allen, Martens (1), Weber (1, ZMA), ten Kate, Everett, Endih (2), Rensch (5), de Jong (2), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 4); (?), 26/28.xi.1888, Bari (Weber, ZMA no.29985); 2 (?) ad., 24/27.vi.1891, Koting (Ten Kate, RMNH cat. nos. 5 and 6); ♂, 15.i.1969, Nunang, 650 m (Schmutz, RMNH no. 85124); ♀, vii/viii.1969, Nunang, 650 m (Schmutz, RMNH no. 85126); ♂, 9. vii.1971, Narang, Todo, 150 m (Verheijen, RMNH no. 85127); ♂, ♀, 12.x.1971, Nunang, 650 m (Schmutz, RMNH nos. 85125, 85123).
Eggs (fig. 17c): c/2, 3.xi.1960, Soa (RMNH no. 71774); c/1, ca. 11.xii.1960, Soa (RMNH no. 71775); c/1, x.1961, Soa (RMNH no. 71776); c/2, 20.ii.1962, Mataloko (RMNH no. 71777); c/3, 14.iii.1962, Mataloko (RMNH no. 71778). The eggs are sky-blue, moderately glossy, somewhat sparsely mottled with brown; some eggs almost plain.

Measurements and weights:	RMNH no. 71774	37.4 × 26.5	- very large blow-holes
		39.1 × 26.8	-
	RMNH no. 71775	41.8 × 27.0	1.0184
	RMNH no. 71776	40.3 × 27.3	0.9838
	RMNH no. 71778	37.3 × 26.5	0.8678
		38.3 × 26.3	0.9440
		38.5 × 24.8	damaged

Notes.— Modest as the available material is, it supports the conclusion previously reached by White & Bruce (1986: 393) that *mertensi* is not tenable, either on the basis of measurements, or on supposed differences in gloss of the plumage.

Measurements:		wing	tail	tarsus	entire culmen	exposed culmen
Flores	3 ♂	161, 176, 180	73, 77	41, 41	42, 38	31.5, 33
	2 ♀	166, 173	77, 79½	38, 39	40, 37.4	33, 31.2
	4 (?)	170, 171 172, 173	72, 72, 75, 83	43, 40, 42, 42.5	41, 40, 39, 38	34, 32, 35, 32
Sumbawa	♂	168	69	41	40	32
	♀	171	73	38	42	33.2
	(?)	169	74	39	41.3	32.5
Alor	♀	170	73	41	40	32.5

Oriolus chinensis broderipi Bonaparte

O[*riolus*] *broderipi* Bonaparte, 1850, Consp. Gen. Av. I: 348 – Ins. Sumbava.
Oriolus sumbawensis Schlegel, 1857, Handl. Dierk. 1: 479, Vogelen pl. II fig. 20 – Sumbawa.

Collectors.— Semmelink, Allen, Weber, ten Kate (2), Rensch (3), de Jong (7), Verheijen (1, MCZ), Verheijen/Schmutz.
Material.— (?) ad., 1862, Larantoeka (Semmelink, RMNH cat. no. 6); (?) im., 1862, Larantoeka (Semmelink, RMNH cat. no. 7); (?), 26.xi.1888, Bari (Weber, collector's no. 494a, RMNH); ♂, 23.xi.1968, Nunang (Schmutz, RMNH no. 97119); ♂, 17.xii.1968, Nunang (Schmutz, RMNH no. 66140); (?) nestling, 23.xii.1969, Todo (Verheijen, RMNH no. 65349); ♀, 1969, Nunang, 650 m (Schmutz, RMNH no. 85164);

♂, 19.ix.1970, Kisol (Verheijen, RMNH no. 65350); 2 ♀, 5.iii.1971, Rana Loba, Borong, 50 m (Verheijen, RMNH nos. 66141, 85161); ♂, 12.x.1971, Nunang, 650 m (Schmutz, RMNH no. 85163); ♂, 25.x.1971, Nunang, 650 m (Schmutz, RMNH no. 85162); (?) juv., 26.xi.1975, Nunang, 650 m (Schmutz, RMNH no. 81083); 3 ♂, ♀, 28.xi.1975, Nunang, 650 m (Schmutz, RMNH nos. 81079-81082); ♂, 18.xii.1975, Nunang, 650 m (Schmutz, RMNH no. 81078). Adults of both sexes have the iris blood-red, bill dark pink, legs black. Immatures: iris brown, bill dusky (gradually changing to dark pink), legs black.
Eggs (fig. 17d): c/2, 12.x.1955, Ruteng (RMNH no. 71779); c/1, 17.v.1957, Ruteng (RMNH no. 71780); c/1, 4.vi.1959, Potjong (RMNH no. 71781); c/2, 20.vi.1959, Poéng (RMNH no. 71782); c/3, 5.xi.1959, locality unknown (RMNH no. 71783); c/1, 17.vi.1962, Mataloko (RMNH no. 71784). The eggs are glossy white or very pale pinkish chamois, with widely spaced, sharply defined black dots.

Measurements and weights:	RMNH no. 71779	31.5 × 23.4	very large holes,
		33.0 × 23.4	not weighed
	RMNH no. 71780	33.6 × 24.2	0.5233
	RMNH no. 71781	32.2 × 22.7	0.5007
	RMNH no. 71782	33.7 × 23.5	0.5482
		33.8 × 23.5	0.5425
	RMNH no. 71783	36.9 × 25.4	0.6551
		37.7 × 25.1	0.6774
		38.5 × 25.2	0.6744

These eggs average only slightly larger, but are conspicuously heavier, than eggs of *O. c. maculatus* from Java, as recorded by Hellebrekers & Hoogerwerf (1967: 160). Clutch no. 71783 is particularly large and heavy.

Notes.— Greenway (1962: 130) cites the name as *broderipii* (note the difference in spelling), from Bonaparte (1852), but the description in the Conspectus has clear priority. Both descriptions are, of course, based on the same specimen.

Büttikofer (1892: 194) recorded 2 ♂ ad. from Koting, collected by Ten Kate. These are no longer present in the collection, but there is an unsexed specimen, received at the same time from the same collector, from Trong, Adonara (where Ten Kate stayed from 13/16.v.1891). I do not know why Büttikofer omitted this specimen (which has an original label) from his paper. The species had not yet been recorded from Adonara, although its occurrence was to be expected.

As it seems to have been generally overlooked, I list here the objective synonym *Oriolus sumbawensis* Schlegel. The name *broderipi* is based on two mounted specimens from Bima, Sumbawa (Forsten coll., RMNH cat. nos. 1, 2; cf. Schlegel, 1867: 106), both having written underneath on the socle, in Temminck's handwriting: *Oriolus Sumbawanus* Temm sp. Nov. The specimen figured by Schlegel appears to be cat. no. 2, which is marked as a ♂ (the other one has no indication of its sex), and is the deeper coloured one with an orange-yellow mantle.

Unexpectedly, there is no difference in plumage between fully adult males and females: they have a deep cadmium-yellow, almost orange-yellow plumage, and the remiges are glossy black. Duller birds, the yellow of the dorsal surface tinged with green, and the inner remiges with greenish edges, are immature, further, in the skins, characterized by wholly or partly dusky bills. These immature birds may already have well-developed gonads. This subspecies is larger than the adjacent *O. c. maculatus* (as noted above, the eggs are also larger). The material suggests a slight sexual difference in size, the males averaging a little larger than the females.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
7 ♂	152-161	101-108	27.5-29.2	36-39.3	32.5-36
	(157.4)	(105.8)	(28.5)	(38.0)	(34.6)
5 ♀	150-155	98-105	27-28.2	37.3-39.2	33.5-35.4
	(152.6)	(102.3)	(27.7)	(38.4)	(34.6)

Dicrurus hottentottus bimaensis Wallace

Dicrourus bimaënsis Wallace, 1864, Proc. Zool. Lond. (1863): 492 – Lombock, Sumbawa, and Flores.
[*Dicrourus*] *bimaensis* Bonaparte, 1850, Consp. Gen. Av. 1: 352 – nomen nudum (Sumbava).
Dicrurus hottentottus renschi Vaurie, 1949, Bull. Amer. Mus. Nat. Hist. 93: 298 – Tambora Mountain, 3000 feet, Sumbawa.

Collectors.— Semmelink, Allen, Weber (3), Everett (6), Rensch (3), de Jong (5), Pfeffer (1), Verheijen/ Schmutz.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 4); (?), 23/25.xi.1888, Reo (Weber, RMNH cat. no. 5); ♂, 24.x.1968, Nunang (Schmutz, RMNH no. 66142); (?), 3.iii.1971, Rana Loba, Borong (Verheijen, RMNH no. 66143); (?), 25.v.1971, Manggarai (Verheijen, RMNH no. 66144); ♀, 17.vi.1973, Waé-Réca, Borong (Verheijen, RMNH no. 85284); ♂, 24.vi.1976, Poco Mulu (Schmutz, RMNH no. 97180).
Eggs (figs 17e, 17ee): 18 clutches of c/1 (2 ×), c/2 (8 ×), c/3 (5 ×) and c/4 (3 ×), collected in the months October (12), November (5) and December (1). There are two quite different types of egg: one with light brown markings on a cream ground, the other with a pure white ground colour, sparsely marked with small black primary spots, and somewhat larger light violet-grey secondary spots. There is no need to question the identification of the eggs, as this kind of variation is known to occur in the Dicruridae.

Some measurements and weights:	RMNH no. 71785	30.2 × 21.7	0.3488
		30.3 × 21.2	0.3672
		31.3 × 21.3	0.3561
	RMNH no. 71786	29.0 × 21.0	0.4154
	RMNH no. 71787	28.3 × 21.0	0.3890
		28.7 × 21.0	0.3633
	RMNH no. 71788	29.4 × 21.3	0.3821
		29.6 × 21.4	0.3897
	RMNH no. 71789	29.0 × 20.5	0.3657
		29.3 × 20.6	0.3834
		29.6 × 20.6	0.3746
		29.8 × 20.8	0.3878
	RMNH no. 71790	29.0 × 20.5	0.3178
		30.4 × 20.5	0.3398
		30.5 × 20.3	0.3298
	RMNH no. 71791	27.3 × 20.5	0.3353
		27.6 × 20.6	0.3345
		28.6 × 20.8	0.3696
	RMNH no. 71792	31.7 × 20.8	
		31.8 × 20.7	
	RMNH no. 71793	27.8 × 20.4	
		27.9 × 20.5	
	RMNH no. 71794	29.2 × 21.3	

Notes.— Two authors have studied the geographical variation of *D. hottentottus* in the Lesser Sunda Islands: first Rensch (1928a, 1931a, 1931b), and later Vaurie (1949). Rensch (1928a) observed that specimens from Lombok are larger than "typische *D. h.*

bimaensis (Bp.) von Sumbawa", and he named the former *D. h. vicinus.* Rensch believed birds from Sumbawa and Flores to be identical. Although he first accepted Sumbawa as the type-locality of *bimaensis* (as just quoted), he later restricted the type-locality to Flores (cf. Rensch, 1931a: 589).

Vaurie had an entirely different opinion on the geographical variation in the region, in that he regarded birds from Lombok, Flores, Pantar, Alor and Goenoengapi as consubspecific, and large, and only birds from Sumbawa as small. On the basis of Rensch's restriction, he accepted Flores as the type-locality of *bimaensis,* which name he therefore used for the birds from all these islands. This left the supposedley smaller subspecies from Sumbawa without a name, which he provided. Judging by the sequence in which he listed the islands inhabited by *bimaensis* (repeated by Vaurie, 1962: 151), Vaurie confused Goenoeng Api, Sangeang, off Sumbawa, with the island Goenoeng Api in the Banda Sea (where *D. hottentottus* does not occur, cf. van Bemmel & Hoogerwerf, 1940). In Vaurie's classification, specimens from Sangeang should, on the basis of geographical nearness, belong to the Sumbawa subspecies rather than to *bimaensis* sensu Vaurie. Since then, I pointed out that there had been no need to shift the type locality of *bimaensis*, and confirmed the adult specimen from Bima, Sumbawa, listed as type by Finsch (1901b: 196), as lectotype (cf. Mees, 1965: 194-195).

The classification proposed by Vaurie, with the range of one subspecies interrupted by that of another, is not very satisfactory. Although the material available is not exactly rich, I have tried to verify whether it conforms to Vaurie's conclusions as regards variation. In this connection it may be noted that Vaurie's material was not particularly rich either. Excluding several specimens which, with dull plumage and some white edging on the middle of the underparts, are clearly juveniles, the material (none of which was examined by Vaurie), provides the following

Measurements:	wing	tail (OTF)	tail (CTF)	tarsus	culmen from skull	culmen from nostril
Lombok						
Cat.10 (?)	140	125	116	26	35.5	25
Cat.11 (?)	146	127	118	26	37	23.6
Cat. 9 (?)	149	118	112	27	38.2	25.3
Cat. 8 (?)	151	124	107	26.3	37	23.8
Cat. 7 (?)	152	125	112	26	36	22.5
Sumbawa						
Cat. 1 (?) (lectotype of *bimaensis*)	141	106	100	–	33	20.7
Flores						
66142 ♂	143	110	102	27	33.6	22.8
97180 ♂	143	110	100	27	33.3	21.5
85284 ♀ im.	132	109	104	24	32.9	20.3
Cat. 5 (?)	138	106	99	27	35	22.3
66143 (?)	139	112	103	25	34.8	21.0
66144 (?)	139	116	107	26	33.2+	20.5 *)
Cat. 4 (?)	141	111	100	25.8	34	21

*) tip damaged.

As far as the evidence provided by this material goes, it clearly supports Rensch and not Vaurie: no difference between birds from Sumbawa and Flores, and specimens

from Lombok distinctly larger, with longer tails. Thus, *D. h. vicinus* is a valid subspecies, confined to Lombok, and the chain of islands from Sumbawa to Alor is inhabited by *D. h. bimaensis.* In this connection it is worth mentioning that Hoogerwerf (1956) found *D. hottentottus* fairly common on Komodo, between Sumbawa and Flores.

Vaurie (1962: 150) cites the original description of *D. h. bimaensis* as "*Dicrorus* (sic) *bimaënsis* Wallace...". But in the original description the spelling of the generic name is, in both places where it appears (Wallace, 1864: 485, 492), *Dicrourus* (in those days the usual spelling). The citation is correct in Vaurie's (1949: 296) earlier publication.

The substantial and complex agglomerate of forms united by Vaurie (1949) under the specific name of *D. hottentottus*, is an obvious candidate for subdivision into several species. An attempt at this has been made by White & Bruce (1986: 314-315), who separated the forms inhabiting the Lesser Sunda Islands under the specific name *D. densus*. Bruce concluded the discussion with the statement that a detailed study was in preparation, to be presented later. I prefer to await the publication of this study before accepting the proposed changes.

Artamus leucorhynchus leucorhynchus (Linnaeus)

Lanius leucoryn[*chus*] Linnaeus, 1771, Mantissa Plant.: 524 – in Manillis.
Artamus leucorrhynchus, var. *celebensis* Brüggemann, 1876, Abh. Naturwiss. Ver. Bremen 5: 69 – Celebes.

Collectors.— Semmelink, Allen, ten Kate, Everett (2), Rensch (4), Verheijen.
Material.— (?), 1862, Larantoeka (Semmelink, RMNH cat. no. 38); (?) juv., 28/30.i.1891, Endeh (ten Kate, RMNH cat. no. 39); ♂, large gonads, 25.x.1970, Ruteng, captured on its nest (Verheijen, RMNH no. 85224).
Eggs: c/3, 29.x.1958, Lamba, Todo (RMNH no. 71801); c/1, 27.x.1959, Ruteng (RMNH no. 71802); c/1, 14.ix.1961, Ruteng (RMNH no. 71803); c/3, 7.ix.1962, Ruteng (RMNH no. 71804); c/3, 30.viii.1964, Ruteng (RMNH no. 71805); c/3, c/2, 20.ix.1964, Ruteng (RMNH nos. 71806, 71807); c/3, 18.x.1964, Ruteng (RMNH no. 71808); c/4, 7.xi.1964, Ruteng (RMNH no. 71809).

Some measurements and weights:	RMNH no. 71801	24.0 × 18.3	0.2311
		24.4 × 18.3	0.2282
		24.5 × 18.3	0.2328
	RMNH no.71804	23.3 × 18.0	0.2367
		23.6 × 17.9	0.2272
		23.9 × 18.5	0.2385
	RMNH no. 71806	24.8 × 18.3	- (damaged)
		25.0 × 18.6	0.2624
		25.1 × 18.2	0.2471

Notes.— In their large size, birds from the Lesser Sunda Islands, east to Flores (Alor?) correspond with birds from Sulawesi (Celebes) and the smaller islands in the Flores Sea; they are larger than birds from Java (cf. measurements published by Mees, 1986: 150), and (abruptly?) larger than birds from Timor and Roti. Therefore, the geographic variation of the species in this region is by no means without interest, even though it is difficult to express it in nomenclature.

In a previous publication, I observed that the irregular pattern of variation makes it very difficult to distinguish subspecies in the whole region from the Andamans to New Guinea and Australia. An exception must be made for *A. l. musschenbroeki* from the

Tanimbar Islands, which is conspicuously darker in plumage than all the surrounding populations, and on this basis deserves nomenclatural recognition. Its bill is also rather larger and thicker than that of surrounding populations.

Measurements:	wing	tail	tarsus	entire culmen	exposed culmen
♂	145	65	17.6	24	19.8

Corvus florensis Büttikofer

Corvus florensis Büttikofer, 1894, in Weber: Zool. Ergebnisse 3: 304 – Maumeri, Flores.

Collectors.— Weber, Everett (1), Verheijen (2, MCZ), Verheijen/Schmutz.
Material.— (?) ad., xii.1888, Maumeri (Weber, RMNH cat. no. 1, holotype); (?), 19.vii.1969, Sok-Rutung, West-Manggarai (Schmutz, RMNH no. 66247); ♂, small gonads, 20.vii.1969, Sokrutung, 50 m (Schmutz, RMNH no. 97150); ♂ with large gonads, 25.ix.1971, Sésok, 1000 m (Schmutz, RMNH no. 85140).
Eggs (fig. 18a): c/3, 28.xii.1946, Rekas (RMNH no. 71816); c/3, of which two badly damaged, 1.i.1953, Waé Rambung (RMNH no. 71817); c/3, 28.ix.1955, (RMNH no. 73524); c/2, xii.1955, Bénténg Djawa, Djinggor (RMNH no. 71818); c/3, 27.xi.1956, W. Nandá (RMNH no. 71819); c/2, xii.1958, Heret (RMNH no. 71820); c/2, 5.xi.1959, Djinggor (RMNH no. 71821); c/1, 1.xii.1959, Djinggor (RMNH no. 71822); c/2, i.1962, Soa (RMNH no. 71823).

Measurements and weights:			
	RMNH no. 71816	38.0 × 27.4	0.8367
		39.8 × 28.3	0.8918
		41.7 × 28.6	0.9192
	RMNH no. 71817	39.3 × 27.0	-
		42.6 × 28.1	-
		42.9 × 27.8	1.003
	RMNH no. 73524	38.8 × 26.7	0.8258
		39.1 × 28.4	0.9338
		42.7 × 28.6	1.000
	RMNH no. 71818	34.7 × 27.4	0.8196
		36.2 × 27.6	0.826
	RMNH no. 71819	40.5 × 29.1	0.8697
		41.2 × 27.6	0.8749
		42.2 × 27.1	0.8339
	RMNH no. 71820	38.0 × 26.8	0.828
		40.5 × 26.3	0.8337
	RMNH no. 71821	39.2 × 26.5	0.8436
		39.8 × 26.0	0.7963
	RMNH no. 71822	43.2 × 28.0	1.0941
	RMNH no. 71823	42.7 × 28.1	0.8931
		43.2 × 27.7	0.9623

Notes.— There has been speculation about the affinities of this little-known species, with the suggestion that it might be a geographical representative of *C. enca* (cf. Meinertzhagen, 1926: 73). Rensch (1931a: 588) enumerated morphological differences, which point away from a close relationship between these two species. Vaurie (1958) agreed with Meinertzhagen in considering *C. florensis* a derivative of *C. enca*, but he drew attention to the high tail/wing ratio (72.5%) of his one specimen. The four specimens measured by me confirm this (70.1-73.4%). Jollie (1978: 98-99) regarded *C. florensis* as a remnant of an early radiation and called it: "a fine ancestral type", but he did not further

elaborate this, and as it stands, this remark is not very useful. That is a pity, for his opinion that *C. florensis* is an ancestral type, is the opposite of the opinions of Meinertzhagen and Vaurie, that it is a derivative of the *C. enca* group. These conflicting opinions show that the relationships of *C. florensis* remain obscure. The statement by Haffer (in Glutz von Blotzheim, 1993: 1657): "*C. florensis* auf Flores ist ein vertreter von *C. enca*" is far too definite and is presented without any explanation, although probably based on Vaurie.

The eggs (previously undescribed) support the separate position of *C. florensis*: the ground-colour is white, unlike the eggs of *C. enca, C. macrorhynchus* and the Australian species, which have eggs with a blue-green ground-colour. One has to go as far as Africa to find an other member of the genus with eggs which lack green: *C. capensis.* The eggs of *C. capensis* look, however, quite different from those of *C. florensis*, as the former has the ground-colour almost concealed by large brown freckles. Schönwetter's (1983: 696) description gives the impression that *Corvus enca celebensis* (a synonym of *C. e. enca*, cf. Oortwijn, 1987) would normally have eggs with a whitish ground-colour. That is not so, all eggs of *C. enca* examined by me (subspecies *enca* and *compilator*) have a bluish green ground-colour.

C. enca violaceus from Ceram, which is more likely a separate species, may have eggs with a white ground-colour, but there was some doubt about the identification (Stresemann, 1914a: 153; Schönwetter, 1983: 721). The green ground-colour of crows' eggs fades with age, and some of the very pale eggs described by Schönwetter were old, and had probably been exposed to sunlight.

Measurements:	wing	tail	tarsus	bill (from forehead feathers)
♂	227	166	48	51½
♂	224	157	46	50
(?)	226	166	46	51
(?)	228	160	49	50

Corvus macrorhynchos macrorhynchos Wagler

C[*orvus*] *macrorhynchos* Wagler, 1827, Syst. Av., Corvus, sp. 3 – Nova-Hollandia, Nova Guinea, et in insulis Sumatra et Java = Java.

Cornix timorensis Bonaparte, 1853, Compt. Rend. Acad. Sci. Paris 37: 829 – Timor (reference not verified).

Corvus coronoides inoptatus Rensch, 1928, Orn. Mber. 36: 7 – Rana Mesé, Flores.

Collectors.— Allen, Weber (1), Everett (2), Rensch (5), de Jong (1), Verheijen (1, MCZ), Verheijen/Schmutz.

Material. –(?) ad., 23/27.xii.1888, Endeh (Weber, RMNH cat. no. 15); ♂ im., 23.i.1968, Pongkor (Verheijen, RMNH no. 65375); (?), 8.v.1969, Nisar (Schmutz, RMNH no. 66246); ♀, 6.viii.1969, Dalo, Rahong (Verheijen, RMNH no. 65376); (?), 16.viii.1969, Dalo (Verheijen, RMNH no. 85141).

Eggs (fig. 18b): c/2 28.xi.1955, Ruteng (RMNH no. 71810); c/5, 14.xi.1957, Mano (RMNH no. 71811); c/3, 1958, Lamba, Todo (RMNH no. 71812); c/5, 30.xi.1958, Potjong (RMNH no. 71813); c/4, 20.xii.1958, Wesang (RMNH no. 71814); c/3, 16.xi.1960, Soa (RMNH no. 71815).

Measurements and weights:	RMNH no. 71814	41.2 × 29.0	1.1265
		42.3 × 29.2	1.2346
		43.5 × 28.8	1.2420
		43.9 × 28.8	1.1422

9. Unconfirmed and erroneous records

Threskiornis melanocephalus (Latham)

The inclusion of Flores and Timor in the range of this species on the distributional map in Hancock et al. (1992: 218) is an error, not supported by their text. On the other hand, East Java has mistakenly been excluded on the map, for the Brantas Delta has been known as a breeding place for half a century and in their text, the authors report recent breeding in that area.

Circus assimilis Jardine & Selby

Marchant & Higgins (1993: 95-96) list this harrier as occurring in the Lesser Sunda Islands, which, as a generalisation, is acceptable, but it has been recorded there from Sumba and Timor only, so that their distributional map showing it as ranging over the whole chain of islands, from Lombok to Wetar, is definitely in error.

Falco longipennis longipennis Swainson

As has been mentioned on a previous page, the record of nominate *F. l. longipennis* from Flores (Stresemann & Amadon, 1979: 417) was a mistake.

Arenaria interpres interpres (Linnaeus)

White & Bruce (1986: 167) report this migrant wader from Flores on the basis of: "an overlooked specimen from Flores (RMNH)", but that is an error. It concerns RMNH cat. no. 69 from Adonara recorded by Mees (1976); the error could originate as in the card-index of the collection the locality is given as "Flores"; underneath the socle of the mounted bird is, however, written: "tué 8.1880, Adonare, Pte. E. de Flores". It is therefore the same individual on which the Adonara record is based.

Trichoglossus euteles (Temminck)

This parrot was supposedly collected by Allen; for a discussion and the rejection of the record, see p. 96.

Collocalia salangana subsp.

Verheijen (1964: 199) listed, besides *Collocalia esculenta,* two swiftlets from Flores, under the names *C. vanikorensis dammermani* and *C. inexpectata* subsp. The first of these is now called *C. fuciphaga*, the second might refer to the species now known as *C. salangana* and its occurrence on Flores is quite likely, but requires verification. See also the discussion under *C. fuciphaga* in the main text.

Alcedo meninting meninting Horsfield

In Rensch's (1931a: 634) list, through an evident slip, this species is included instead

of *Ceyx rufidorsa*. The mistake was copied by Kuroda (1936: 735). It is probably due to Rensch's error, that Pfeffer (1958: 72) considered it justified to claim that he had "souvent rencontré" *A. meninting*!

Eurystomus orientalis pacificus Latham

The inclusion of this subspecies into the avifauna of Flores by White & Bruce (1986: 285-287), followed by Forshaw (1993: 92), is due to the assumption that resident birds of the Lesser Sunda Islands would belong to this mainly or wholly Australian subspecies (see the discussion in the main text). *E. o. pacificus* is strongly migratory, and one would almost expect it to occur on the Lesser Sunda Islands as a winter visitor, but as yet there is no evidence. Father Schmutz paid special attention to the species, concentrating on birds looking dull in the field, but all specimens procured by him were nominate *E. o. orientalis* with somewhat dull plumage because of immaturity.

Zoothera peronii (Vieillot)

There is in the RMNH-collection an unsexed specimen of *Z. peronii*, with on its label: "v. Lansberge, 1882, Flores". The label is not an original one, but was written by Finsch, ca. 1900, when the mounted bird was turned back into a study skin, and it received the RMNH cat. no. 6. With its history of mounting and dismounting, there must have been ample opportunity for a mix-up. Hoping to find evidence for this, I checked Büttikofer's list (see p. 11), where I found the bird, s. n. *Geocichla rubiginosa*, already with the provenance Flores. The record was published by Finsch (1901b: 264), who did not doubt it, as indeed he had no reason to, given the imperfect knowledge of the distribution of the species at that time and the fact that there is no other evidence that Colfs's labelling, sketchy as it is, is unreliable.

There are three specimens from Timor in the collection, also formerly mounted and labelled with "v. Lansberge, 1881". These, therefore, belong to a consignment received a year earlier, of which there is no list.

On the basis of the material at that time available in the collection, Finsch (l. c.) concluded that the species shows no significant geographical variation and that, therefore, *Geocichla audacis*, described from Damar two years before, was a synonym.

This was followed by Hartert (1904: 208-209): "After comparing our magnificent series of 34 *audacis* with 10 Timor birds (5 in Tring and 5 in London) I am at a loss to understand Dr Finsch's statement, that Timor examples are of the same colour as *audacis*. *G. peronii peronii* is above yellowish cinnamon, *audacis* chestnut- or rufous-cinnamon, and also the chest and sides differ in the same way". Later authors have accepted Hartert's conclusion, based on such an impressive material, rather than Finsch's, and retained *audacis* as a subspecies, claimed to be much darker and more rufous than nominate *peronii* (Mayr, 1944a: 155; White & Bruce, 1986: 333). Mayr stated that all birds from Dutch Timor including four specimens from Atapupu, belonged to typical *peronii,* and added that a single male from Dilly was indistinguishable from a series of *audacis*, so that: "The range of this form includes probably all eastern Timor". Now it should be remembered that Atapupu and Dilli are both situated on the north coast of Timor, not separated by any obvious geographical barriers, and barely 100 km apart. As Mayr considered the subspecies well-differentiated ("much darker and more rufous"), this

implies an abrupt boundary between Atapupu and Dilli, which in a lowland bird with a presumably more or less continuous distribution is not very likely. Hartert considered the whole of Timor to be inhabited by the nominate race. Mayr restricted its range to western Timor, and added eastern Timor to the range of *audacis.* Hartert mentions having examined BM material and (knowing that Wallace has collected in eastern Timor, and that some of his specimens are in the BM) it occurred to me that it would be worth checking whether some of the five BM specimens which Hartert acknowledges having examined, were from eastern Timor.

Mr Walters (in litt., 3.ix.1992) has informed me very fully on the BM material. I quote here the most important passages of his letter: "We have a total of 8 specimens of nominate *Geocichla* (*Zoothera*) *peronii* from Timor, all of which should have been here at the time Hartert was writing this description, as they were all registered prior to 1899... I can offer no ... suggestion as to why he apparently only examined 5. Two of the specimens are from "E. Timor". Both were collected by A.R. Wallace. We also have an Everett specimen from Atapupu. All the others are merely from "Timor". Unfortunately, there does not seem to be any way of determining whether Hartert saw these 3 skins. I have compared the series with those of *audacis* and can see very little difference in colour. A couple of the skins from Timor (including the Everett specimen) appear to be very marginally paler than those of *audacis,* but most (including the two Wallace specimens) seem to me to be indistinguishable.... I would be inclined to agree that *audacis* is probably not valid, if there is any difference it would seem to be a very slight clinal variation".

Thus, Mr Walters's examination of the BM specimens supports my own conclusion, based on the material in Leiden, that, in spite of the contrary conclusions arrived at by Hartert and Mayr, *audacis* is not a valid subspecies.

Phylloscopus borealis borealis (Blasius)

Ticehurst (1938: 129) claimed to have seen: "quite typical *borealis* from Sumbawa, Flors and Timor". As mentioned on a previous page, all specimens examined by me are referable to *xanthodryas,* and I consider that the occurrence of nominate *borealis* on Flores (and other Lesser Sunda Islands) requires confirmation.

The specimen from Scott Reef, Western Australia (14°03'S, 121°46'E) identified by McKean (1980) as belonging to the nominate race, should be re-examined. The wing length of this specimen, an unsexed immature bird (WAM no. A 16285), is 66 mm (Johnstone, in litt., 8.v.1998): this is inconclusive, but is within the range of variation of *xanthodryas*. There is now also a record from Broome, mainland of Western Australia (Hassell, 1998). The bird was captured, examined, photographed, and released; the need for taking detailed measurements is stressed twice in the text, yet, unbelievably, not a single measurement is presented. I have tried to obtain those measurements, but no reply has been received.

Lonchura malacca ferruginosa (Sparrman)

L. m. ferruginosa was listed for Flores by Wallace (1864: 486, s. n. *Munia ferruginea*), but certainly in error (see p. 10). See also Rensch (1931a: 596 footnote): "*Munia ferruginea* wurde von Wallace ... fälschlicherweise für Flores angegeben".

10. Species and subspecies with type locality Flores

Accipiter novaehollandiae sylvestris Wallace, 1864
Accipiter virgatus quinquefasciatus Mees, 1984
Spizaetus (cirrhatus) floris (Hartert, 1898)
Turnix maculosa floresiana Sutter, 1955
Rallus pectoralis exsul (Hartert, 1898)
Rallus philippensis wilkinsoni (Mathews, 1911)
Treron floris Wallace, 1864
Ptilinopus cinctus albocinctus Wallace, 1864
Ptilinopus melanospilus melanauchen (Salvadori, 1875)
Trichoglossus (haematodus) weberi (Büttikofer, 1894)
Loriculus flosculus Wallace, 1864
Geoffroyus geoffroyi floresianus Salvadori, 1891
Tanygnathus megalorynchos floris Hartert, 1924
Otus magicus albiventris (Sharpe, 1875)
Otus alfredi (Hartert, 1897)
Otus silvicola (Wallace, 1864)
Ninox scutulata florensis (Wallace, 1864)
Alcedo atthis floresiana Sharpe, 1892
Pelargopsis capensis floresiana Sharpe, 1870
Mirafra javanica parva Swinhoe, 1871
Anthus novaeseelandiae albidus Stresemann, 1912
Coracina (novaehollandiae) floris (Sharpe, 1879)
Brachypteryx montana floris Hartert, 1897
Pnoepyga pusilla everetti Rothschild, 1897
Tesia everetii everetti (Hartert, 1897)
Orthotomus cucullatus everetti (Hartert, 1897)
Phylloscopus presbytes floris (Hartert, 1898)
Seicercus montis floris (Hartert, 1897)
Culicicapa ceylonensis sejuncta Hartert, 1897
Rhinomyias oscillans (Hartert, 1897)
Rhipidura diluta diluta Wallace, 1864
Monarcha sacerdotum Mees, 1973
Terpsiphone paradisi floris Büttikofer, 1894
Pachycephala fulvotincta fulvotincta Wallace, 1864
Pachycephala nudigula nudigula Hartert, 1897
Dicaeum annae (Büttikofer, 1894)
Dicaeum igniferum Wallace, 1864
Dicaeum sanguinolentum rhodopygiale Rensch, 1928
Anthreptes malacensis convergens Rensch, 1929
Zosterops palpebrosa unica Hartert, 1897
Lophozosterops superciliaris superciliaris (Hartert, 1897)
Lophozosterops dohertyi subcristata Hartert, 1897
Heleia crassirostris crassirostris (Hartert, 1897)
Lichmera lombokia fumidigula (Rensch, 1928)
Philemon buceroides neglectus (Büttikofer, 1891)
Amandava amandava flavidiventris (Wallace, 1864) ("Timor and Flores")
Erythrura hyperythra obscura (Rensch, 1928)
Lonchura molucca propinqua (Sharpe, 1890)
Lonchura pallida pallida (Wallace, 1864) ("Lombock and Flores")
Corvus florensis Büttikofer, 1894

This makes a total of 50 forms, described over a period of 120 years (1864-1984), by a dozen authors. I have excluded forms described without indication of a holotype from a range including Flores, of which the type locality has subsequently been restricted to another island. Synonyms have also been excluded from this enumeration; they can be found easily in the main text. Of one or two subspecies included in this list (*Tanygnathus megalorynchos floris, Erythrura hyperythra obscura*), the validity requires confirmation. Interestingly, only one of the birds described from Flores is a winter visitor (*Ninox scutulata florensis*), all others are residents. In sequence of the number of forms described, the list of authors is: Hartert (16), Wallace (11), Sharpe (5), Büttikofer (5), Rensch (4), Salvadori (2), Mees (2), Mathews, Rothschild, Stresemann, Sutter and Swinhoe (1 each).

As a historical curiosity I want to recall that Hartert & Goodson (1918), arbitrarily and without consideration of historical probability, designated Flores as the type locality of *Ducula aenea*, on the basis of the following argument: "The specific name *aenea* was first given to Brisson's '*Columba moluccensis*', said to have been brought from the Moluccan Islands. As this species does not occur on the Moluccas, we propose as the restricted locality for the name *aenea* Flores, which seems to be the nearest place to the Moluccas where it occurs. Even if this should be considered incorrect, no great harm can be done by this action, as the birds from the Greater and Lesser Sunda Islands, Sumatra, Borneo,

Java, Lombok, Flores and Sumba are inseparable". The argument, such as it is, holds water only when it was certain that the subspecific identity of the type of *aenea* has been correctly established, for *D. aenea* actually does reach the Moluccas (*D. a. sulana*: Sula Islands), and Sulawesi (Celebes) (*D. a. paulina*) is also nearer the Moluccas than is Flores. The type locality has been corrected to Manila by Stresemann (1952: 514, 520, 523).

It is easy to compile from the above list, a shorter list of 22 species and subspecies endemic to Flores. Of course, a few species and subspecies at present thought to be confined to Flores may in future still be found on Sumbawa and perhaps other islands.

Accipiter virgatus quinquefasciatus
Rallus pectoralis exsul
Trichoglossus (haematodus) weberi
Loriculus flosculus
Tanygnathus megalorynchos floris
Otus magicus albiventris
Otus alfredi
Brachypteryx montana floris
Pnoepyga pusilla everetti
Tesia everetii everetti
Orthotomus cucullatus everetti
Phylloscopus presbytes floris
Seicercus montis floris
Culicicapa ceylonensis sejuncta
Rhinomyias oscillans
Monarcha sacerdotum
Pachycephala nudigula nudigula
Dicaeum sanguinolentum rhodopygiale
Lophozosterops superciliaris superciliaris
Lophozosterops dohertyi subcristata
Heleia crassirostris crassirostris
Corvus florensis

Even though a few forms (e. g., *Heleia c. crassirostris)* may require confirmation, these 22 forms, several of which are very well-differentiated, prove a considerable degree of endemism, in an island which is, after all, only a link in the middle of a closely-knit chain.

11. Zoogeography

The zoogeography of the Lesser Sunda Islands has been studied in particular by Rensch (1928d, 1930, 1936) and Mayr (1944a, 1944b). Stresemann, in his classical work on the avifauna of Celebes (1939/1941), also paid attention to the Lesser Sunda Islands, especially Flores, in their relation to Celebes. Here I shall try to give a zoogeographical analysis of the avifauna of Flores.

Species endemic to Flores (6)
Trichoglossus (haematodus) weberi
Loriculus flosculus
Otus alfredi
Rhinomyias oscillans
Monarcha sacerdotum
Corvus florensis

Species endemic to Flores and Sumbawa (10) (with an asterisk, species are marked, which have different subspecies on each island)
Spizaetus (limnaeetus) floris
Otus silvicola
Pericrocotus lansbergei
*Tesia everetti**
Dicaeum annae

*Rhipidura diluta**
*Pachycephala nudigula**
*Lophozosterops superciliaris**
*Lophozosterops dohertyi**
*Heleia crassirostris**

Species endemic to Flores and Sumba (1)
Coracina dohertyi

Species endemic to Flores and Timor (1)
*Phylloscopus presbytes**

Species endemic to Flores and Lombok (1)
Ducula (lacernulata) sasakensis

Species endemic to Lombok, Sumbawa and Flores (2)
Halcyon fulgida
*Lichmera lombokia**

Species endemic to Flores, Sumbawa, Sumba and Lomblen (Komodo, Rintja) (1)
Zosterops wallacei

Species endemic to Sumbawa, Flores, Pantar and Alor (1)
Dicaeum igniferum

Of peculiar interest are species which one would expect to occur on Flores, but which apparently do not.
Lanius schach: Lombok, Sumbawa, Alor, Timor, Wetar, etc.
Brachypteryx leucophrys: Lombok, Sumbawa, Timor.

Other species skip Flores in a different way:
Halcyon australasia: Lombok, Sumba, Timor, Wetar and eastwards to the Tanimbar Islands.
Dicaeum maugei: Lombok, Roti, Semau, Timor.
Acrocephalus stentoreus: Lombok, Sumbawa, Sumba, Timor.
Milvus migrans: Lombok, Sumba, Timor.

As was to be expected on purely geographical grounds, it is the avifauna of Sumbawa which is closest to that of Flores. They share 10 endemic species, and although six of these have different subspecies on Flores and Sumbawa, these subspecies are only slightly differentiated, suggesting that the isolation is not a long one. On the other hand, in a few instances there is a strong differentiation: *Trichoglossus haematodus forsteni* on Sumbawa vs. *T.* (*haematodus*) *weberi* on Flores, *Phylloscopus trivirgatus trivirgatus* on Sumbawa vs. *P. presbytes floris* on Flores, *Lonchura punctulata nisoria* on Sumbawa vs. *L. p. blasii* on Flores. In addition, the following resident species of Sumbawa are not known from Flores: *Lanius schach, Brachypteryx leucophrys, Acrocephalus stentoreus*.

In the above enumeration, the emphasis has been on endemic and near-endemic species of the Lesser Sunda Islands. For a balanced view, however, also subspecies of more widely distributed species have to be considered. When that is done, it is at once

clear how strong the relation is between Flores and the south-eastern Sundaland (Java, Bali). Many Sundaland birds have penetrated along the chain of Lesser Sunda Islands to, and beyond, Flores. The affinity between Flores and Sumba becomes greater than just the one shared endemic species, through such species as *Gallinula chloropus, Ceyx rufidorsa, Culicicapa ceylonensis, Terpsiphone paradisi, Parus major*. These species have not reached Timor, but others have.

Species of presumed Australian/Papuan origin and affinities are: *Cacatua sulphurea, Tanygnathus megalorynchos, Geoffroyus geoffroyi, Monarcha trivirgatus, Monarcha sacerdotum, Pachycephala fulvotincta, Lichmera indistincta, Lichmera lombokia, Philemon buceroides*. A problem is where to draw the line: from the distribution of their congeners, one would deduce an Australian origin for *Gerygone sulphurea* and *Artamus leucorhynchus*, but these species are widely distributed in south-east Asia, making a reconstruction of their history speculative.

Stresemann's (1939: 321) suggestion that grassland birds have colonized Sulawesi (Celebes) and the Lesser Sunda Islands from south-eastern Asia, through Taiwan and the Philippines, around the heavily forested Malay Peninsula, Sumatra and Borneo, finds little support (cf. *Elanus caeruleus, Circaetus gallicus, Tyto longimembris, Caprimulgus affinis*); it is more likely that, during Pleistocene periods of low sea-level, including the last glacial, a direct connection through the exposed Sunda Shelf was possible. [13])

In the avifauna of Flores, there is little evidence for a close relation with Sulawesi (Celebes). Mayr (1944a) has forcibly argued against land bridges between Flores and Sulawesi, projected by some of his predecessors. And, as noted, for an explanation of the ornithogeography of the region, no land bridge is needed. With the passing of time, and the discovery of fossil elephants as far east as Sulawesi and Timor, the land bridge papers have temporarily gone up again (Audley-Charles & Hooijer, 1973; Hooijer, 1974) but once more have failed to find general acceptance, as there is too much contrary evidence. The occurrence of elephants and other large herbivores on Sulawesi and the Lesser Sunda Islands has now to be explained in a different way, not with complete land bridges. There is general agreement that during Pleistocene periods of low sea-level there was much more land between Java, Sulawesi, and the Lesser Sunda Islands, with a corresponding narrowing of sea straits separating them. The controversy over how well elephants are able to swim is an old one (with some extreme views expressed by the opposing camps), but swimming remains the only explanation for the wide distribution of elephants, deer and buffaloes east of Wallace's Line (cf. de Vos et al., 1994). [14])

No species of bird is represented on Flores by more than one resident subspecies. The only island in the chain of the Lesser Sunda Islands, in which intra-island geographical variation has been recorded is Timor, the largest island.

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[13]) Although, over half a century after its publication, it is clear that not all Stresemann's (1939) conclusions are acceptable, his work, written in the lucid and persuasive style for which he was justly known, remains a major contribution to the zoogeography of the region. It is incomprehensible that Dickinson et al. (1991), in their study of the zoogeography of the Philippines, do not even mention it, and have omitted it from their extensive bibliography.

[14]) But the present-day example given by these authors, of large herds of deer and buffaloes crossing the 100 km wide Gulf of Bone in southern Sulawesi, cannot have been meant seriously, especially the part about these hoofed animals loading a food supply for the crossing on their heads. The story may have originated in some floating carcasses covered in seaweed having been seen.

According to Mayr (1944a: 130), five species show geographic variation on Timor, as follows:

	Western Timor	Eastern Timor
Coturnix ypsilophora	*raaltenii*	cf. *castanea*
Trichoglossus iris	*iris*	*rubripileum*
Zoothera peronii	*peronii*	*audacis*
Turdus poliocephalus	*schlegelii*	*sterlingi*
Philemon inornatus	*inornatus*	*robustus*

However, I do not accept the validity of two of these cases (*Coturnix ypsilophora* and *Zoothera peronii*). White & Bruce (1986: 397) have also rejected a third one (*Philemon inornatus*), but the measurements published by Mayr (1944a: 165) show that the size difference between *inornatus* and *robustus* is real enough. Admittedly, the occurrence of an apparently steep cline in measurements in a lowland bird, on a comparatively small island, is unexpected and will be worth further study.

Recently added to the group is *Ptilinopus regina*: *P. r. flavicollis* (or *P. r. ewingii*) in western Timor, and *P. r. roseicollis* (intermediate between *flavicollis* and *xanthogaster*) from eastern Timor (cf. Johnstone, 1981). So long as only a single specimen of *roseicollis* is known from Timor, the possibility that it is a vagrant and not a resident, cannot be ruled out. Therefore, this case requires confirmation.

Mayr (1944a: 170) drew attention to another phenomenon occurring on Timor, and not unknown elsewhere: an increase of size corresponding with an increase in altitude. This has its theoretical basis in Bergmann's Rule. On the other hand, I find it difficult to believe that this can have much influence in birds: 1000 m difference in altitude, need not mean more than a real distance of three to four kilometers and in a continuous population it is unlikely that much real genetical difference could build up over such a small distance (although the case of *Zosterops borbonica* comes to mind as an example that differences do occur over a short distance; cf. Gill, 1973). The matter is of course different, when there is a break in habitat, for example lowland and alpine grasslands, separated by a belt of forest.

Particularly fascinating I find the occurrence of differences in vertical range between adjacent subspecies; in this paper *Phylloscopus presbytes, Rhipidura rufifrons* and *Lichmera lombokia*. As stated in the systematic account, I do not include *Dicaeum sanguinolentum* here, for I regard *Dicaeum wilhelminae* as a separate species.

A total of 214 forms has now been recorded from Flores. The number of species is slightly lower, as of some species more than one subspecies occurs, usually a resident one and a migrant visitor.

Dividing the birds into the categories shown in the register, we get:

Residents and presumed residents	155
Migrant visitors from the North	28
Migrant visitors and vagrants from the South	14
Tropical marine birds which may breed in the neighbourhood of Flores, but are unlikely to do so on the mainland	4
Uncertain	13

The last group, marked as uncertain, consists almost entirely of freshwater birds which may breed on Flores, but there is as yet no evidence that they do, neither are they known to breed on any of the other Lesser Sunda Islands (this is the case with 2 species of shags and 8 species of herons). Of the remaining species, two, *Gallinula tenebrosa* and *Petrochelidon nigricans*, may be no more than vagrants from Timor, where they breed. The case of *Lichmera indistincta* is different, in that it is known to occur, and undoubtedly to reproduce, on small islands near Flores, and indeed, its occurrence on Flores as a resident may still be confirmed.

Naturally, the question arises of how well the avifauna of Flores is now known quantitatively. My obvious guess is that few resident land and freshwater birds remain to be discovered, although the facts that some presumably resident land birds (*Loriculus flosculus, Monarcha trivirgatus, Dicaeum agile*) have not been recorded for a century (and that at least *Monarcha trivirgatus* and *Dicaeum agile* are not likely to be extinct), and that *Dicaeum sanguinolentum* remains known from only three specimens, show that even here surprises remain possible. There are recent field-observations of all four species mentioned in this paragraph, with *Dicaeum sanguinolentum* being recorded as common above 1000 m (Verhoeye & Holmes, 1998).

With migrant wading birds of the families Charadriidae and Scolopacidae it is an entirely different matter. Evidence from other islands shows that at least some 15 more species of these families ought to occur as regular migrant visitors.

The family Laridae (Sterninae) should also contribute half a dozen species.

From the rather sparse records of waders in Wallacea, White (1975a) drew the conclusion that the region is not an important wintering ground for waders. Although he expressed an awareness of collector's bias in favour of resident, indigenous birds, I consider that he has grossly underestimated this bias; indeed, it is rumoured that some collectors were expressly instructed not to waste time paying attention to migrant waders. As I mentioned in an earlier paper, such birds, when recorded at all, were dismissed in a footnote (cf. Mees, 1976). In contradistinction to what White assumed, there are plenty of reefs, beaches, and mudflats in Wallacea, which can and do support waders. I realise that White distinguished between birds actually wintering in Wallacea, and transients (what reaches Australia has to pass through Wallacea), but he underestimated both categories.

Finally, it must not be overlooked that these migrants are seasonal and that for that reason expeditions active in the northern summer were not likely to meet with larger numbers.

Addendum.— The Sumbawa records published by Butchart et al. (1996) and Johnstone et al. (1996) make some modifications to this chapter necessary. The species of particular interest in relation to Flores are *Ducula (lacernulata) sasakensis, Coracina dohertyi, Seicercus montis* and *Rhinomyias oscillans*.

Ducula sasakensis was the only member of the category Lombok-Flores, not Sumbawa; with its (predictable) occurrence on Sumbawa the hiatus has been filled and *D. sasakensis* joins the next category: Lombok-Sumbawa-Flores. *Coracina dohertyi* was listed with the unique distribution Flores-Sumba; with its discovery on Sumbawa, its pattern of distribution has become more natural. Butchart et al. suggest that birds from Sumbawa are subspecifically separable, but that remains to be verified. The Sumbawa record of *Seicercus montis*, although not unlikely, is unsatisfacory, being based on what seems

to have been little more than a glimpse by one (or more than one?) unnamed observer. *Rhinomyias oscillans*: an interesting and properly-documented record of a species hitherto thought to be endemic to Flores.

These records emphasise the already known close affinity between the avifaina of Flores and Sumbawa.

12. List of localities

Many of the numerous localities mentioned in the main text are not found on ordinary maps, and very likely quite a few are not found on any map. With the help of Father Verheijen, and of the map of Manggarai by Fr. Janssen (ca. 1953) which he sent me, I have localized most of these, if not exactly, at least approximately.

The Daerah (county) of Manggarai is (or was until recently) divided in Kedaluans, perhaps best translated as communities or districts, at the head of which stood a Dalu (feodal headman). A Kedaluan, however, is more than just an administrative division, it is also a social and linguistic unit.

The map (fig. 4) shows the Kedaluans of Manggarai (after Verheijen, 1967). When of a minor locality the Kedaluan in which it is situated, is known, that already gives a fair idea of its position. Often a Kedaluan takes its name from its head village (cf. Pongkor, Ruteng, Todo).

A particular difficulty lies in the transcription of geographical names. This is a world-wide problem: for example, the introduction of a new system of transcription of Chinese names, has made the geography of that country permanently inaccessible to me. On Flores, the situation is not so bad as, at least, the Latin alphabet has been used. Even so, for the island here called Palué, the names and transcriptions Roesa Radja, Rusa Radja, Paloweh, Paloë, Paloe and Paluë have been used. In the title of Verheijen's (1961) article, the name is spelled Paluë, but in the text consistently Palué. Father Verheijen informed me that the linguistically most correct transcription would probably be Palu'e. Besides differences in transcription, there have, in the past forty years, also been several changes in spelling. Following Malay (in Indonesia called Indonesian), the Dutch oe was replaced by u, so that, for example, the places Roeteng and Larantoeka changed their names to Ruteng and Larantuka. Later there were other changes, the worst one that of tj to c. It is a moot question, whether it is advisable to accept spelling rules introduced for modern Malay uncritically for other languages. The change of the name Mborong to Borong probably also comes in this class.

I had been unable to find the place Mataloko, where so much material was collected, on the map, until Father Verheijen informed me that it is the same as Toda-Belu.

As this is a paper about birds, not about linguistics or geography, I have felt free to be opportunistic. Therefore, I have not tried to "modernize" names as they appear on labels.

A few common words: Golo = hill, sometimes also mountain-top; Lareng = place against a mountain, part of a mountain-slope; Lingko = the name of a special Manggarese communal garden, which is used at intervals of from 7-10 years, and in the other years lies fallow and becomes covered with dense secondary growth; Poco or Potjo = mountain, mountain peak; Puar = forest; Rana = lake; Waé = water, including creek, river, sometimes lake; Ulu = source, upper course, origin of a stream.

Aimere, 0-200 m
Badjar
Badjawa, 1200 m
Badjo, near Nisar
Bara-Latji, 200 m
Bari
Bénténg Djawa
Boa Waé
Borong, coast (on maps Mborong!)
Celebesbaai = Hading-baai
Ceréng, 300 m, see Tjeréng
Dalo, Rahong
Dampék
Déngé, Todo
Deno
Desoe, 3300 ft. (Everett)
Djinggor, ca. 300 m, north-east of Waé-Nénda
Djoneng
Endeh
Ero
Geli Moetoe
Golo Léhot
Golo -Karot, Borong
Golo Mbélar
Golo Rucuk
Groot Bastaard = Geliting Besar
Gurung, Langkas, Rahong, 900 m
Heret
Hochwald zwischen Paku und Sok-Rutung
Hotju, Ruteng, 1500 m
Joneng, beach and dunes, see Djoneng
Kandang, 900 m
Karot, Borong, 50 m
Kedindi, coast
Kenari (west coast), 50 m
Kisol, Borong, 175 m
Koting = Kotting
Kuwu, Rahong
Labuanbadjo = Laboean Badjo
Lai, Palué
Lalang, Todo
Lamba, Todo
Lamé
Larantoeka
Laréng Pongkor, 1100 m
Lawir Lamba-Leda
Léma, 900m
Lemboi, 250 m
Lenteng
Léong, Méngé
Léwé
Liang Bitu
Lingko Cehet
Lingko Laring Pongkor (also Lareng)
Lingko-Moak, Langkas
Lingko Ncilor
Lingko Ngkiong
Lingko Ros
Ling Ndela, 600 m
Lita, 50 m
Lo Kong, 900 m
Longko, Wangkung, Rahong, 900 m
Look = Loé = Looh, 5 m
Look-Mabacone
Lumu
Madjung
Mano
Maro-Kama = Marokama, Maro Kama, ca. 10 km East of Borong
Mataloko = Toda-Belu
Mata-Waé
Maumeri
Mbawa
Mbépé, 1700 m
Mboera = Mburak
Mborong = Borong, coast
Méléng
Méngé
Mengé-Ruda
Mongu Luwa
Montjok, Lamba-Leda, 600-800 m
Mt. Repok, above 3500 ft, an Everett locality near Nanga Ramau recently visited by Butchart et al. (1996) and shown on their fig. 1.
Mukun
Naga, 150m, 250m
Nanga-Lili = Nangalili, 20 m
Nanga Ramau = Nanga Ramut
Nanga Rema
Nantal, Rahong
Narang, Todo, 150 m
Nempong
Ngalor-Roga, Langkas, Rahong
Nggoang, 850 m
Nggoér, 5 m
Nggolong-Tédé, Ruteng, 1900 m
Ngkiong, L. Ngkiong
Nilo
Nisar, west Manggarai, beach, 50/100 m, 180 m
Ntéwéng, Mano
Nunang, 650 m, 700 m
Nunuk
Orong, 550 m [nb. Orong, Wélak, Orong, Tjongkar]
Paku, 350-400 m
Paku, Mbelawang-Bach, 300 m (brook?)

Palué = Paloë = Paluë = Paloweh = Rusa Radja
Pangabatang
Pangkor = Pongkor?
Papagaran
PocoLareng, 1400-1600 m.
Poco Nernancang, Ruteng, ca. 1500 m
Poéng, Méngé
Raé
Rahong, ca. 1000 m, 900 m
Rana-Ka, mountain lake, 2200 m
Rana Kulan, Biting, 400 m
Rana Loba, Borong
Rana Mesé, 1200-1400 m
Rekas, 450 m, Kempo
Rembong
Rempo
Rentung Lelak
Réo (Weber)
Repok, see Mt. Repok
Riung
Robo
Roka, Wangkung
Rokka, near Endeh
Rowang, Ruteng, 1200 m
Rua, Ruteng
Rusa Radja = Paluë
Ruteng/Kumba
sawah Lanar
Sésok, 610, 900 m
Sikka = Sika
Siru, 50 m, near Lita
Sita, 700 m
Soa Soknar
Sok-Rutung = Sokrutung, 50 m
Suma, Langkas
Tado
Tado Walok, Ruteng, ca. 1700 m
Tendo, Ruteng
Tjantjar, Rahong
Tjara, Rahong
Tjeréng, 600 m
Tjolol
Tjumbi, Rahong
Todabelu = Todabeloe = Toda-Belu = Mataloko
Todo, 700 m
Tulang, Potjong
Ulu Ros
Ulu Tukenikit = Ulu Tuké Nikit
Ulu Wae Wua
Waé Djamal
Waé Golo Lolo
Waé Guang
Waé Hiam
Waé Laci
Waé Lega
Waé-Mésé, Kandang, Nisar
Waé-Mulu
Waé-Ntjuang, Langkas, 900 m = Wai-Ntjuang
Waé Radja, 20 m
Waé Rambung
Waé Rembong
Waé Rempo
Waé Rétja = Waé Réca, Borong
Waé-Rukus = Ulu Waé Rukus
Waé Rungget
Waé Sano, 650 m
Waé Tua, 400 m
Waé-Wako, 150-200 m
Wai Moké, south coast of middle Flores
Wangkung = Wang keng, Rahong
Watuneso
Weleng, Ruteng
Wesang, 700 m, Lamba-Léda
Wewak, 400 m
Wodja, Palué

13. Postscript

As mentioned in the introduction, the tortured history of this paper began many years ago and progress was slow. Originally intended to include only discussions of some of the more interesting species collected by the Fathers, it soon became clear that only a full report would do justice to their work. At the time of my retirement (1991), all measurements of bird specimens and a proportion of those of the eggs had been taken, and a draft of the text had been written. In the following years, after my departure for Australia, access to literature was limited and there was very little progress.

A stay in Leiden in 1995 gave me an opportunity to study more literature, some material that had been received after my departure, and to complete the measuring of the eggs. Sections of the text were supplemented or revised. Short descriptions of the

eggs were added, but this task was not completed and could not be completed later for the obvious reason that I had no longer access to the collections. When at the end of this visit I left Leiden for good, the work was in a computer, and my colleague Dr J. van der Land most generously offered to take care of it, and to make any further additions and corrections required. Perhaps predictably this went less well than I had hoped and delays led to an increasing doubt that my paper would ever be published.

In this period several papers appeared which would have made extensive re-writing necessary, but for the reason just stated I lacked the motivation. The first of these papers to reach me, through the courtesy of Dr Dekker, was the one by Butchart et al. (1996). Dr Dekker informed me that before its publication there had been no contact with Leiden, and that he had been unaware that it was in preparation. In its introduction it states somewhat scathingly that: "Two missionaries made anecdotal observations on Flores", a strange remark when their text and their list of references show that they had full access to Father Schmutz's notes. The paper by Ottow & Verheijen (1969) is also mentioned, but Father Verheijen's other publications are conveniently ignored. These comments are not intended as unkindness, but merely to emphasise the need for the Flores collections in Leiden to be made more widely known, to end such underestimation of their extent and value.

All these years, my manuscript was getting more and more out of date. It was also as I despaired of ever seeing it published, that complete and partial copies were made available to several persons showing an interest: in that way I hoped that my efforts would not be entirely wasted.

In the introduction I have discussed the question of how to treat additions to the Flores avifauna based on undocumented field-observations, but there is every reason to return to this subject. In the West Indies, Bond (1963) was plagued by it forty years ago. He took a very strict view, which is, and was even then, probably right for the West Indies, but not necessarily for the less known Lesser Sunda Islands. Obviously, many common migrants and other regular visitors had not yet been recorded for the simple reason that nobody had bothered about them, so that records in these groups were confined to the odd specimen taken accidentally. There is no need, indeed it would be slightly silly, to apply to observations of such birds the standards required in the West Indies (leave alone Europe and North America). My problem with field-observations was a different one, that arose only in the nineties. Indeed, the beginning was inauspicious: Verhoeye & King (1990) and King (1990) recorded four species as "new to Flores"; of these four, three had already been recorded many years before by the Fathers, and I had no difficulty accepting the remaining one (*Hieraaetus kieneri*) as it was not unexpected, being of a species previously known from Sumbawa. However, my paper is about collections, from which measurements were taken, and which provided the basis for systematic and zoogeographical discussions. Clearly field-observations would not contribute much to these particular subjects.

The supplementary list of birds from Flores, as presented by Verhoeye & Holmes (1998), with some corrections made by me, follows. *Bulweria bulwerii, Puffinus leucomelas, Puffinus pacificus, Oceanites oceanicus, Oceanodroma matusudairae, Phaethon lepturus, Fregata minor, Sula dactylatra, Sula sula, Plegadis falcinellus, Falco peregrinus, Nettapus pulchellus, Anas querquedula, Aythya australis, Fulica atra, Pluvialis squatarola, Charadrius dubius, Charadrius mongolus, Charadrius peronii, Numenius minutus, Numenius madagas-*

cariensis, Tringa totanus, Tringa stagnatilis, Tringa brevipes, Xenus cinereus, Arenaria interpres, Calidris acuminata, Calidris ferruginea, Glareola maldivarum, Stercorarius pomarinus, Stercorarius parasiticus, Chlidonias leucopterus, Gelochilidon nilotica, Sterna hirundo, Sterna sumatrana, Sterna anaethetus, Sterna fuscata, Ducula bicolor, Caloenas nicobarica, Apus affinis, Alcedo beryllina.

Although this list of 41 species is impressive, perhaps its most striking feature is that there is not a single Passerine bird in it, confirming that this group of birds is now well known.

As was to be expected, most additions are of migrant waders from the Northern Hemisphere, and widely-ranging tropical seabirds: neither of these two categories is of much zoogeographical interest and they do not require a discussion. This leaves the following records of note. It should be kept in mind that all these records were presented without any details of identification, so that an evaluation is impossible.

Nettapus pulchellus: unexpected, as records were hitherto confined to Australia and southern New Guinea.

Plegadis falcinellus: previously known from Java, Sulawesi (Celebes) and Australia, so that the record from Flores fills a gap of its range as hitherto known.

Falco peregrinus: this species would be expected as a migrant visitor from the North, already known from Java and Timor, but the observers state expressly that the bird seen was dark-breasted, suggesting the subspecies *ernesti*, which might be a resident.

Charadrius dubius was to be expected, but in view of the late date (29.v.1993) and the fact that no less than eight individuals were observed, some basic information, such as whether the birds were in summer or winter plumage, and an assurance that there was no possibility of confusion with *C. peronii*, would have been welcome. Descriptions of the plumages of this species in the literature are often misleading, as I pointed out before (Mees, 1982a, 1984b). In my previous review (1982a: 54) I claimed that the tropical subspecies (*jerdoni* and nominate *dubius*) have even in the immature plumage a black pectoral band. This was based on information supplied by Deignan in Smythies (1960 and subsequent editions); I had not personally examined any juvenile birds. Since then, however, I received a juvenile specimen of *jerdoni* on loan from the Bombay Natural History Society, and this bird has a brown breast band, proving the existence of a juvenile plumage. I cannot say whether nominate *dubius* has a similar juvenile plumage, but consider it very likely. Another small error in my 1982a paper is the statement that there are no specimens of the subspecies *jerdoni* in the Leiden collection: several years after the publication of that paper I discovered that, although there are no skins, there are several mounted specimens in the old collection which, somehow, I had managed to overlook.

Ducula bicolor: Additional observations supporting Hoogerwerf's questionable record are welcome. It is perhaps not superfluous to mention here that when I do not accept a record this does not necessarily mean that it is erroneous, but only that the evidence presented is not of sufficient quality to be completely convincing (Hoogerwerf himself listed the record with a query). In the present case I cannot help adding that the notes provided by Hoogerwerf are better than those presented by Verhoeye & Holmes.

Apus affinis is a genuine addition to the resident avifauna of Flores; whether it has been overlooked previously or is a recent colonist is a point not discussed by the observers.

Alcedo beryllina: a single individual as observed in the mangrove at Riung on 5 and

7.viii.1997, by Pilgrim. This species is well distributed on Sumbawa. It was either a migrant from Sumbawa or belonged to a local breeding population.

14. Bibliography and references

Anon., 1998. European news.— Brit. Birds 91: 38-57.

Alström, P., 1990. Calls of Pacific Golden Plovers.— Brit. Birds 83: 70-72.

Amadon, D., 1941. Notes on some Australian birds of prey.— Emu 40: 365-384.

Amadon, D., 1943. Birds collected during the Whitney South Sea Expedition. 52. Notes on some non-passerine genera, 3.— Amer. Mus. Novit. 1237: 1-22.

Amadon, D., 1959. Remarks on the subspecies of the Grass Owl, *Tyto capensis*.— J. Bombay Nat. Hist. Soc. 56: 344-346.

Amadon, D. & J. Bull, 1988. Hawks and owls of the World, an annotated list of species.— Proc. West. Found. Vert. Zool. 3: 295-357.

Amadon, D. & G. Jewett, Jr., 1946. Notes on Philippine birds.— Auk 63: 541-559.

Amadon, D. & G. Woolfenden, 1952. Notes on the Mathews collection of Australian birds. The order Ciconiiformes.— Amer. Mus. Novit. 1564: 1-16.

Amaral, A. do, 1964. Gender of generic names ending in *-ops*.— Bull. Zool. Nomencl. 21: 212-215, also 218-221.

Andrew, P., 1986. Notes on some birds of Timor.— Kukila 2: 92-95.

Ash, J.S., 1984. Bird observations on Bali.— Bull. Brit. Orn. Cl. 104: 24-35.

Assem, J. van den., 1960. Vogelwaarnemingen in Nieuw-Guinea.— Ardea 48: 178-182.

Audley-Charles, M.G. & D.A. Hooijer, 1973. Relations of Pleistocene migrations of pygmy stegodonts to island arc tectonics in eastern Indonesia.— Nature 241: 197-198.

Baker, R.H., 1951. The avifauna of Micronesia, its origin, evolution, and distribution.— Univ. Kansas Publ., Mus. Nat. Hist. 3: 1-359.

Balen, S. van & A.R. Compost, 1989. Overlooked evidence of the Short-toed Eagle *Circaetus gallicus* on Java.— Kukila 4: 44-46.

Barbagli, F. & C. Violani, 1997. Canaries in Tuscany.— Boll. Mus. Reg. Sci. Nat. Torino 15: 25-33.

Bartels, M., 1914. Über eine anscheinend neue Art *Dicaeum* von Java.— Orn. Mber. 22: 125-126.

Bartels, M., 1923. Neues aus Java.— Orn. Mber. 31: 54-57.

Bartels Jr., M. & E. Stresemann, 1929. Systematische Übersicht der bisher von Java nachgewiesenen Vögel.— Treubia 11: 89-146.

Bastide, J.G. la, 1941. De Kaneelkleurige Reiger, *Ixobrychus cinnamomeus* (Gm.).— Irena 1: 22-24.

Beehler, B.M., T.K. Pratt & D.A. Zimmerman, 1986. Birds of New Guinea. Princeton University Press: xv + 293 p., 55 pl.

Bemmel, A.C.V. van, 1938. Twee snippen.— Trop. Nat. 27: 138-140.

Bemmel, A.C.V. van, 1939. Eine neue *Monarcha* von der Insel Boano.— Orn. Mber. 47: 152-153.

Bemmel, A.C.V. van, 1940a. Ornithologische Notizen I-III.— Treubia 17: 333-335.

Bemmel, A.C.V. van, 1940b. Een zeldzame trekvogel.— Trop. Nat. 29: 35-36.

Bemmel, A.C.V. van, 1948. A faunal list of the birds of the Moluccan Islands.— Treubia 19: 323-402.

Bemmel, A.C.V. van & A. Hoogerwerf, 1940. The birds of Goenoeng Api. -– Treubia 17: 421-472, pl. 17-34.

Bemmel, A.CV. van & K. H. Voous, 1951. On the birds of the islands of Muna and Buton, S. E. Celebes.— Treubia 21: 27-104.

Berlioz, J., 1946. Oiseaux de la Réunion. Faune de l'Empire Français IV: 83 p.

Bingham, C.F., 1880. Additional notes on the birds of Tenasserim and specially on those of the Thoungyeen valley.— Stray Feathers 9: 138-198.

Blakers, M., S.J.J.F. Davies & P.N. Reilly, 1984. The atlas of Australian birds. Melbourne University Press: xlvi + 738 p.

Blasius, W., 1883. Ueber neue und zweifelhafte Vögel von Celebes.— J. f. Orn. 31: 113-162.

Blasius, W., 1886. Beiträge zur Kenntnis der Vogelfauna von Celebes. II.— Zeitschr. ges. Orn. 3: 81-179.

Blasius, W., 1888. Die Vögel von Gross-Sanghir.— Ornis 4: 527-646, Tafl. III, IV.

Boie, F., 1844. Auszüge aus dem "System der Ornithologie".— Isis (1844): Col. 164-198.
Boles, W.E., 1988. Comments on the subspecies of Australian native and introduced finches.— Emu 88: 20-24.
Bonaparte, C.L., 1852. Descriptions of two new species of oriole.— Proc. Zool. Soc. Lond. 18 (1850): 279.
Bond, J., 1963. Eighth supplement to the Check-list of birds of the West Indies (1956). Acad. Nat. Sci. Philadelphia: 11 p.
Brisson, D., 1760. Ornithologie 3. Paris: 734 + xci p.
Broek, M. van den, 1991. Zeldzame vogel vermoord door twee onderzoekers.— Volkskrant, 4 November 1991.
Brouwer, G.A., 1954. Historische gegevens over onze vroegere ornithologen en over de avifauna van Nederland.— Ardea 41:1-225.
Brown, L. & D. Amadon, 1968. Eagles, hawks and falcons of the world. Country Life Books / Feltham, Middlesex; 2 vols: 1-945.
Brüggemann, F., 1876. Beiträge zur Ornithologie von Celebes und Sangir.— Abh. naturwiss. Ver. Bremen 5: 35-102, Taf. III, IV.
Bühler, A. & E. Sutter, 1951. Sumba-Expedition des Museums für Volkenkunde und des Naturhistorischen Museums in Basel, 1949. Reisebericht und allgemeine Einführung.— Verh. Naturf. Ges. Basel 62: 181-217, Taf. I-VI.
Butchart, S.H.M., T.M. Brooks, C.W.N. Davies, G. Dharmaputra, G.C.L. Dutson, J.C. Lowen & A. Sahu, 1996. The conservation status of forest birds on Flores and Sumbawa, Indonesia.— Bird Conservation International 6: 335-370.
Büttikofer, J., 1891. On a collection of birds from Flores, Samao and Timor.— Notes Leyden Mus. 13: 210-216.
Büttikofer, J., 1892. On a collection of birds from the islands of Flores, Sumba and Roti.— Notes Leyden Mus. 14: 193-206.
Büttikofer, J., 1894. Ornithologische Sammlungen aus Celebes, Saleyer und Flores.— Zool. Ergebnisse 3: 269-306, pl. XVII, XVIII.
Burton, J.A., 1973. Owls of the world. Peter Lowe, Eurobook: 1-216.
Cabanis, J. & F. Heine, 1860. Museum Heineanum. II: Schreivögel: 1-176.
Cade, T.J., 1982. The falcons of the world. Collins, London, etc.: 1-183 + index.
Cain, A.J., 1955. A revision of *Trichoglossus haematodus* and of the Australian Platycercine parrots.— Ibis 97: 432-479.
Chasen, F.N., 1935. A handlist of Malaysian birds.— Bull. Raffles Mus. 11: xx + 389 p.
Chasen, F.N. & A. Hoogerwerf, 1941. The birds of the Netherlands Indian Mt. Leuser expedition 1937 to north Sumatra.— Treubia 18, Suppl.: 1-125, pl. 1-8, map.
Cheng, T.H. 1976. Distributional list of Chinese birds. Science Publishing House, Beijing: xvii + 1218 p. (in Chinese).
Cheng, T.H., 1987. A synopsis of the avifauna of China. Beijing: xvi + 1223 p.
Cheng, T.H., et al.,1978. Fauna Sinica. Series Vertebrata. Aves 4: Galliformes. Academia Sinica, Peking: vi + 203 p., 10 pl.
Christides, L. & W.E. Boles, 1994. The taxonomy and species of birds of Australia and its territories. Monograph 2. RAOU, Melbourne: iv + 112 p.
Condon, H.T., 1975. Checklist of the birds of Australia. Part 1, Non-Passerines. RAOU, Melbourne: xx + 311 p.
Connors, P.G., 1983. Taxonomy, distribution, and evolution of golden plovers (*Pluvialis dominica* and *Pluvialis fulva*).— Auk 100: 607-620.
Connors, P.G., B.J. McCaffary & J.L. Maron, 1993. Speciation in golden-plovers, *Pluvialis dominica* and *P. fulva*: evidence from the breeding grounds.— Auk 110: 9-20.
Coomans de Ruiter, L., 1936. Oölogische en biologische aanteekeningen van eenige roofvogels in de westerafdeeling van Borneo.— Org. Cl. Ned. Vogelk. 9: 34-52.
Coomans de Ruiter, L., 1947. Vogelwaarnemingen gedurende een tocht door het Toradjagebergte.— Lev. Natuur 50: 61-66.

Coomans de Ruiter, L. 1948a. Nog enkele opmerkingen naar aanleiding van de "Avifauna van Batavia en omstreken" van A. Hoogerwerf en wijlen Jhr Mr G.F.H.W. Rengers Hora Siccama.— Ardea 36: 61-70, pl. III.

Coomans de Ruiter, L., 1948b. Waarnemingen van steltlopers (Gressores) in Zuid-Celebes, in het bijzonder van het blauw-witte reigertje, *Notophoyx picata* (Gould).— Limosa 21: 69-83.

Coomans de Ruiter, L., 1951. Vogels van het dal van de Bodjo-rivier (Zuid-Celebes).— Ardea 39: 261-318, pl. IV-VIII.

Coomans de Ruiter, L., 1954. Trekvogels van Sulawesi (Celebes).— Penggemar Alam (Trop. Nat.) 34: 67-96.

Coomans de Ruiter, L., W.C. van Heurn & W.K. Kraak, 1948. Beteekenis en etymologie van de wetenschappelijke namen der Nederlandsche vogels. Club Ned. Vogelk.: xii + 166 p.

Coomans de Ruiter, L. & L.L.A. Maurenbrecher, 1948. Stadsvogels van Makassar (Zuid-Celebes).— Ardea 36: 163-198.

Cooper, R.P., 1975. Wilson's Promontary National Park and its avifauna. Bird Obervers Club, Melbourne: vi + 168 p.

Cramp, S. & K.E.L. Simmons (eds.), 1977. Handbook of the birds of Europe, the Middle East and North Africa I. Oxford University Press: ix + 722 p., 108 pl.

Cramp, S., et al., 1983. Handbook of the birds of Europe, the Middle East and North Africa III - Waders to gullss. Oxford University Press: viii + 1063 p., 84 pl.

Cramp, S., et al., 1988. Handbook of the birds of Europe, the Middle East and North Africa V - Tyrant-flycatchers to thrushes. Oxford University Press: viii + 913 p., 105 pl.

d'Albertis, L.M., 1880. New Guinea: what I did and what I saw. Sampson Low, Marston, Searle & Rivington, London: vol. 1: i-x, 1-424; vol. 2: i-x, 1-406.

Dammerman, K.W., 1929. On the zoogeography of Java.— Treubia 11: 1-88.

David, N. & M. Gosselin, 2000. The supposed significance of originally capitalized species-group names.— Bull. Brit. Orn. Cl. 120: 261-266.

David, N. & M. Gosselin, 2002. Gender agreement of avian species names.— Bull. Brit. Orn. Cl. 122: 14-49.

Deignan, H.G., 1951. A new race of the Hawk-Owl, *Ninox scutulata*, from the Philippines.— Proc. Biol. Soc. Wash. 64: 41-42.

Deignan, H.G., 1955. The glossy starlings (*Aplonis*) of Borneo.— Sarawak Mus. J. 6 (1954): 129-132.

Deignan, H.G., 1960. Harry Cusheir Raven's travels in eastern Borneo.— Sarawak Mus. J. 9 (1959): 267-269.

Deignan, H.G., 1961. Type specimens of birds in the United States National Museum.— U. S. Nat. Mus. Bull. 221: ix + 718 p.

Deignan, H.G., 1963. Checklist of the birds of Thailand.— U. S. Nat. Mus. Bull. 226: i-x, 1-263.

Deignan, H.G., 1964. Subfamily Timaliinae. In: E. Mayr & R.A. Paynter (eds.): Check-list of birds of the world 10: 240-427.

Delacour, J., 1942-1943. The bush-warblers of the genera *Cettia* and *Bradypterus* with notes on allied genera and species.— Ibis (14) 6: 509-519; 85: 27-40.

Delacour, J., 1946. Notes on the taxonomy of the birds of Malaysia.— Zoologica 31: 1-8.

Delacour, J., 1947a. The subspecific name of the Malayan Green Imperial Pigeon (*Docula aenea*).— Auk 64: 129.

Delacour, J., 1947b. Birds of Malaysia. Macmillan, New York: xvi + 382 p.

Delacour, J., 1954. The waterfowl of world, 1. Country Life, London: 284 p., XV pl. + frontesp.

Delacour, J., 1956. The waterfowl of the world 2. Country Life, London: 232 p., XXIII pl. + frontesp.

Delacour, J., 1966. Guide des oiseaux de la Nouvelle-Calédonie et de ses dépendances. Neuchâtel: 172 p.

Delacour, J. & E. Mayr, 1946. Birds of the Philippines. Macmillan, New York: xv + 309 p.

Diamond, A.W., 1987. Studies of Mascarene island birds. Cambridge: 458 p.

Diamond, J.M., 1972. Avifauna of the eastern highlands of New Guinea. Publ. Nuttall Orn. Cl. 12: vii + 438 p.

Dickinson, E.C., 1989. A review of smaller Philippine swiftlets of the genus *Collocalia*.— Forktail 5: 23-34.

Dickinson, E.C., R.S. Kennedy & K.C. Parkes, 1991. The birds of the Philippines.— B.O.U. Check-list No. 12: 507 p.

Duncan, F.M., 1937. On the dates of publication of the Society's 'Proceedings', etc.— Proc. Zool. Soc. Lond. 107A: 71-84.

duPont, J.E., 1971a. Notes on Philippine birds (No. 1).— Nemouria 3: 1-6.

duPont, J.E., 1971b. Philippine birds. Delaware Mus. Monogr. 2: × + 480 p.

Eck, S., 1977. Ergänzendes über die Vögel der Insel Taliabu, Sula-Inseln.— Zool. Abh. Dresden 34: 127-133.

Eck, S. & H. Busse, 1977. Eulen. 2., erg. Aufl. Neue Brehm-Bücherei 469: 196 p.

Erritzoe, J., 1995. A small collection of birds from the Philippines with notes on body mass, distribution and habitat.— Nemouria 40: 1-15.

Escott, C.J. & D.A. Holmes, 1980. The avifauna of Sulawesi, Indonesia: faunistic notes and additions.— Bull. Brit. Orn. Cl. 100: 189-194.

Eskell, R. & S. Garnett, 1979. Notes on the colours of the legs, wings and flanks of the Dusky Moorhen *Gallinula tenebrosa*.— Emu 79: 143-146.

Etchécopar, R.D. & F. Hüe, 1978. Les oiseaux de Chine. Non passereaux. Paris: 586 p.

Finsch, O., 1868. Die Papageien 2. Leiden: viii + 999 p.

Finsch, O., 1898a. On the identity of *Muscicapula westermanni*, Sharpe and *M. melanoleuca*, Hodgs.— Notes Leyden Mus. 20: 93-96.

Finsch, O., 1898b. Ueber *Scops magicus* (S. Müll.) und die verwandten Arten.— Notes Leyden Mus. 20: 163-184, pl. 9, 10.

Finsch, O, 1900. Zur Catalogisirung der ornithologischen Abtheilung.— Notes Leyden Mus. 22: 75-161.

Finsch, O., 1901a. Ueber eine dritte Sendung Vogelbälge aus Central-Borneo (Mahakkam), gesammelt von Herrn Dr A.W. Nieuwenhuis.— Notes Leyden Mus. 22: 163-178.

Finsch, O., 1901b. Zur Catalogisirung der Ornithologischen Abtheilung V.— Notes Leyden Mus. 22: 193-224.

Finsch, O., 1901c. Systematische Uebersicht der Vögel der Südwest-Inseln.— Notes Leyden Mus. 22: 225-309.

Finsch, O., 1905. Dr A.W. Nieuwenhuis': Forschungsreisen in Niederländisch Borneo. Ornithologische Ergebnisse, hauptsächlich vom oberen Mahakam und Kajan.— Notes Leyden Mus. 26: 1-154.

Follett, W.I. & L.J. Dempster, 1963. Request for amendment of the International Code of Zoological Nomenclature to provide a single gender for all generic names ending in *-ops*.— Bull. Zool. Nomencl. 20: 73.

Ford, J.R., 1981. Hybridization and migration in Australian populations of the Little and Rufous-breasted Bronze-Cuckoos.— Emu 81: 209-222.

Ford, J.R., 1983. Taxonomic notes on some mangrove-inhabiting birds in Australia.— Rec. W. Austr. Mus. 10: 381-415.

Forshaw, J.M., 1973. Parrots of the world. Lansdowne, Melbourne: 584 p.

Forshaw, J.M., 1983. Kingfishers and related birds. Alcedinidae: *Ceryle* to *Cittura.* Lansdowne Ed., Melbourne, etc.: 1-284, inc. pl. I-XXVI.

Forshaw, J.M., 1985. Kingfishers and related birds. Alcedinidae: *Halcyon* to *Tanysiptera.* Lansdowne Ed., Sydney, etc.: 285-564, incl. pl. XXVII-LII.

Forshaw, J.M., 1993. Kingfishers and related birds. Leptosomatidae, Coraciidae, Upupidae, Phoeniculidae. Lansdowne Ed., Sydney, etc.: 1-252, incl. pl. LXXIX-C.

Friedmann, H., 1968. The evolutionary history of the avian genus *Chrysococcyx.* U. S. Nat. Mus. Bull. 265: i-viii, 1-137.

Frith, H.J. (editor), 1976. Complete book of Australian birds. Reader's Digest, Sydney: 615 p.

Frith, H.J. (editor), 1982. Pigeons and doves of Australia. Rigby, Adelaide, etc.: 304 p.

Frith, H.J. & W.B. Hitchcock, 1974. Birds. In H.J. Frith & J.H. Calaby (eds.): Fauna survey of the Port Essington district, Cobourg Peninsula, Northern Territory of Australia.— CSIRO Div. Wildl. Res. Techn. Pap. 28: 109-178.

Galbraith, I.C.J., 1956. Variation, relationships and evolution in the *Pachycephala pectoralis* superspecies (Aves, Muscicapidae).— Bull. Brit. Mus. (Nat. Hist.), Zool. 4: 131-222.

Galbraith, I.C.J., 1967. The Black-tailed and Robust Whistlers *Pachycephala melanura* as a species distinct from the Golden Whistler *P. pectoralis*.— Emu 66: 289-294.
Galbraith, I.C.J., 1974. Pachycephalidae. In B.P. Hall (ed.): Birds of the Harold Hall Australian expeditions, 1962-70: 244-264.
Gill, B.J., 1983. Morphology and migration of *Chrysococcyx lucidus*, an Australasian cuckoo.— N.Z.J. Zool. 10: 371-381.
Gill, F.B., 1973. Intra-island variation in the Mascarene white-eye *Zosterops borbonica*. Orn. Monogr. (A.O.U.) 12: 66 p.
Glutz von Blotzheim, U.N., 1975. Handbuch der Vögel Mitteleuropas 6. Akademische Verlagsgesellschaft, Wiesbaden: 840 p.
Glutz von Blotzheim, U.N., 1982. Handbuch der Vögel Mitteleuropas 8/II. Akademische Verlagsgesellschaft, Wiesbaden: 709-1270.
Glutz von Blotzheim, U.N., 1985. Handbuch der Vögel Mitteleuropas 10/II. Akademische Verlagsgesellschaft, Wiesbaden: 509-1184.
Glutz von Blotzheim, U.N., 1993. Handbuch der Vögel Mitteleuropas 13/III. AULA-Verlag, Wiesbaden: 1367-2178.
Goodwin, D., 1970. Pigeons and doves of the world. (2nd. ed.). London: vi + 446 p.
Goodwin, D., 1982. Estrildid finches of the world. London & Oxford: 328 p.
Gould, J., 1838a. Synops. Birds Austr. III: pl. with text.
Gould, J., 1838b. Characters of a large number of new species of Australian birds.— Proc. Zool. Soc. London 5 (1837): 138-157.
Gould, J., 1848. The birds of Australia I. Author/London: no pagination.
Gould, J., 1860. The birds of Asia, vol. I. Author/London: no pagination.
Gould, J., 1865. Handbook of the birds of Australia I. Author/London: viii + 636 p.
Green, R.H., 1977. Birds of Tasmania. Launceston: xiv + 68 p.
Green, R.H., 1993. Birds of Tasmania (4th ed.). Potoroo Publishing, Launceston: xvi + 84 p.
Greenway, J.C., 1962. Family Oriolidae. In E. Mayr & J.C. Greenway (eds.): Check-list of birds of the world 15: 122-137.
Greenway, J.C., 1973. Type specimens of birds in the American Museum of Natural History. Part 1. Tinamidae...Rallidae.— Bull. Amer. Mus. Nat. Hist. 150: 207-345.
Greenway, J.C., 1978. Type specimens of birds in the American Museum of Natural History. Part 2. Otididae... Picidae.— Bull. Amer. Mus. Nat. Hist. 161: 1-305.
Griffin, J., 1964. Comments on the gender of generic names ending in -ops.— Bull. Zool. Nomencl. 21: 217-218.
Gyldenstolpe, N., 1955. Birds collected by Dr Sten Bergman during his expedition to Dutch New Guinea 1948-1949.— Ark. f. Zool. (2) 8: 183-397, pl. I-VI.
Hancock, J. & H. Elliott, 1978. The herons of the world. London Editions: 304 p.
Hancock, J. & J. Kushlan, 1984. The herons handbook. Croom Helm, London & Sydney: 288 p.
Hancock, J.A., J.A. Kushlan & M.P. Kahl, 1992. Storks, ibises and spoonbills of the world. Academic Press, London etc.: vi + 385 p.
Harrison, C.J.O. & S.A. Parker, 1967. The eggs of Woodford's Rail, Rouget's Rail, and the Malayan Banded Crake.— Bull. Brit. Orn. Cl. 87: 14-16.
Hartert, E., 1896. An account of the collections of birds made by Mr William Doherty in the Eastern Archipelago.— Novit. Zool. 3: 537-590, pl. xi. xii.
Hartert, E., 1897a. Descriptions of seven new species of birds and one new subspecies from Flores, and of one new subspecies from Djampea, all collected by Mr Alfred Everett.— Novit. Zool. 4: 170-172.
Hartert, E., 1897b. On the birds collected by Mr Everett in south Flores. Part I.— Novit. Zool. 4: 513-528.
Hartert, E., 1898a. On the birds collected by Mr Everett in south Flores. Part II.— Novit. Zool. 5: 42-50.
Hartert, E., 1898b. List of birds collected in Timor by Mr Alfred Everett.— Novit. Zool. 5: 111-124.
Hartert, E., 1898c. On the birds of Lomblen, Pantar, and Alor.— Novit. Zool. 5: 455-465.
Hartert, E., 1898d. Account of the birds collected in Sumba by Alfred Everett and his native hunters.— Novit. Zool. 5: 466-476.

Hartert, E., 1904. The birds of the South-West Islands Wetter, Roma, Kisser, Letti and Moa.— Novit. Zool. 11: 174-221.
Hartert, E., 1906. On the birds of the island of Babber.— Novit. Zool. 13: 288-302.
Hartert, E., 1922. Die Vögel der paläarktischen Fauna III (Heft 18, 19): 2149-2328, I-XII.
Hartert, E., 1924. Notes on some birds from Buru.— Novit. Zool. 31: 104-111.
Hartert, E., 1929. Birds collected during the Whitney South Sea expedition. VIII. Notes on birds from the Solomon Islands.— Amer. Mus. Novit. 364:
Hartert, E., 1932. Liste der Vögel aus Neuguinea im Buitenzorger Museum in Java.— Nova Guinea 15: 435-484.
Hartert, E., & A.T. Goodson, 1918. Notes on pigeons.— Novit. Zool. 25: 346-348.
Hartert, E. & F. Steinbacher, 1938. Die Vögel der Paläarktischen Fauna, Ergänzungsband (Heft 6-7): 481-602.
Harvey, W.G. & D.A. Holmes, 1976. Additions to the avifaunas of Sumatra and Kalimantan, Indonesia.— Bull. Brit. Orn. Cl. 96: 90-92.
Hassell, C., 1998. Arctic Warbler at Broome: first mainland record.— W. Austr. Bird Notes 85: 1-2.
Hellebrekers, W.Ph.J. & A. Hoogerwerf, 1967. A further contribution to our oological knowledge of the island of Java (Indonesia).— Zool. Verh. 88: 1-164.
Hellmayr, C.E., 1914. Die Avifauna von Timor. In Haniel, Zoologie von Timor 1: i-vi, 1-112, Taf. 1.
Hemming, F. (ed.), 1953. Copenhagen decisions on zoological nomenclature: xxix + 135 p.
Heurn, W.C. van, 1931. Reis-indrukken van een bioloog op Timor en Flores.— Tijdschr. K.N.A.G. (2)48: 924-930.
Heurn, W.C. van, 1932. Vluchtige zoölogische waarnemingen, gedaan tijdens een kort verblijf op Timor en Flores, April-Mei, 1930.— Nat. Tijdschr. Ned. Ind. 92: 64-84.
Higgins, P.J. & S.J.J.F. Davies (eds.), 1996. Handbook of Australian, New Zealand & Antarctic birds, 3 - Snipe to pigeons. Oxford University Press, Melbourne: 1028 p., 60 pls.
Holmes, D.A., 1977. Faunistic notes and further additions to the Sumatran avifauna.— Bull. Brit. Orn. Cl. 97: 68-71.
Holsworth, W.N., 1965. Nesting success of the Osprey on Rottnest Island, Western Australia.— W. Austr. Nat. 10: 13-15.
Hoogerwerf, A., 1935. Ornithologische merkwaardigheden in de Brantas-delta.— Trop. Nat. 24: 89-96.
Hoogerwerf, A., 1937. Enkele biologische aanteekeningen over de kleine zilverreiger, *Egretta garzetta nigripes*.— Limosa 10: 1-11.
Hoogerwerf, A., 1939. Naar den Vuurberg. Een bezoek aan het natuurmonument Goenoeng Api in de Banda Zee.— 3 Jaren Indisch Natuurleven, Elfde Verslag (1936-1938), Ned.-Ind. Ver. tot Natuurbesch., Batavia: 316-333.
Hoogerwerf, A., 1948a. Contribution to the knowledge of the distribution of birds on the island of Java.— Treubia 19: 83-137.
Hoogerwerf, A., 1948b. Enkele aanvullingen op de "Avifauna van Batavia en omstreken".— Ardea 36: 52-61, pl. II.
Hoogerwerf, A., 1949a. Bijdrage tot de oölogie van Java. Buitenzorg: 279 p., xiX pl.
Hoogerwerf, A., 1949b. De avifauna van Tjibodas en omgeving (Java). Buitenzorg: 158 p., Xxi pl.
Hoogerwerf, A., 1954a. *Phalacrocorax sulcirostris territori* (Math.) als broedvogel in West-Java gedurende 1952.— Limosa 26 (1953): 71-79, pl. 3.
Hoogerwerf, A., 1954b. Rapport over een naar Komodo, Padar en Rintja (Kleine Sunda Eilanden) gemaakte dienstreis van 21 Mei - 6 Juli 1953. Bogor: 263 p.
Hoogerwerf, A., 1956. Iets over de vogels van de eilanden Komodo, Padar en Rintja, het land van *Varanus komodoensis*.— Limosa 28 (1955): 96-112.
Hoogerwerf, A., 1962. Some ornithological notes on the smaller islands around Java (with the description of seven new subspecies).— Ardea 50: 180-206.
Hoogerwerf, A., 1963a. A new race of the Spotted Munia, *Lonchura punctulata* (Linn.).— Bull. Brit. Orn. Cl. 83: 36-40.
Hoogerwerf, A., 1963b. Notes on *Ducula aenea* (Linn.), particularly the population of the Kangean Archipelago, and *Ducula problematica* Rensch from Sumba.— Bull. Brit. Orn. Cl. 83: 120-125.

Hoogerwerf, A., 1963c. Notes on *Ducula rosacea* (Temminck) living on the Karimundjawa and Kangean Archipelagos.— Bull. Brit. Orn. Cl. 83: 150-152.
Hoogerwerf, A., 1963d. Notes on Indonesian birds with special reference to the avifauna of Java and the surrounding islands (II).— Treubia 26: 133-157.
Hoogerwerf, A., 1964. Notes sur le gobe-mouches á nuque noire *Hypothymis azurea* notamment des sous-espèces *javana* et *prophata* de l'Archipel Indonesien.— L'Ois. & Rev. Fr. d'Orn. 34: 210-219.
Hoogerwerf, A., 1965. Notes on Indonesian birds with special reference to the avifauna of Java and the surrounding small islands (III).— Treubia 26: 211-291.
Hoogerwerf, A., 1966. On some strange birds from the islands of Komodo and Rintja between Sumbawa and Flores (Lesser Sunda Islands).— Misc. Rep. Yamashina Inst. 4: 488-497.
Hoogerwerf, A., 1969/1971. On the ornithology of the rhino sanctuary Udjung Kulon in West Java (Indonesia).— Nat. Hist Bull. Siam Soc. 23: 9-65, 447-500; 24: 79-135.
Hooijer, D.A., 1975. Quaternary mammals west and east of Wallace's Line.— Neth. J. Zool. 25: 46-56.
Horsfield, T. & F. Moore, 1858. A catalogue of the birds in the museum of the Hon. East-India Company II. London: xix-xxx, 453-752, i-v, i-ix.
Hoyo, J. del, A. Elliott & J. Sargatal (eds), 1997. Handbook of the birds of the world, 4. Lynx Edicions, Barecelona: 1-679.
Hoyo, J. del, A. Elliott & J. Sargatal (eds), 1999. Handbook of birds of the world, 5. Lynx Edicions, Barecelona: 1-759.
ICZN, 1961. Code international de nomenclature zoologique / International code of zoological nomenclature: xvii + 176 p.
ICZN, 1985. Code international de nomenclature zoologique / International code of zoological nomenclature (3. ed.): xx + 338 p.
Janssen, W., ca. 1953. Peta Daerah Manggarai, Flores-Barat, dengan keterangan-keterangan.
Jany, E., 1955. Neuer Fund von *Porzana fusca fusca* (L.) auf Flores.— J. f. Orn. 96: 220.
Johnsgard, P., 1979. Order Anseriformes. In E. Mayr & G.W. Cottrell (eds.): Check-list of birds of the world (2nd ed.) 1: 425-506.
Johnstone, R.E., 1981. Notes on the distribution, ecology and taxonomy of the Red-crowned Pigeon (*Ptilinopus regina*) and Torres Strait Pigeon (*Ducula bicolor*) in Western Australia.— Rec. W. Austr. Mus. 9: 7-22.
Johnstone, R.E., 1984. Notes on the distribution and ecology of the Green-winged Pigeon *Chalcophaps indica* (Linnaeus) in Western Australia, with comments on subspeciation in the Australian region.— W. Austr. Nat. 16: 4-8.
Johnstone, R.E., 1994. Observations of seabirds and shorebirds in Nusa Tenggara (Lesser Sundas) and Moluccas (Indonesia).— W. Austr. Nat. 19: 339-349.
Johnstone, R.E., P. Jepson, S.H.M. Butchart, J.C. Lowen & D. Prawiradilaga, 1996. The birds of Sumbawa, Moyo and Sangeang islands, Nusa Tenggara, Indonesia.— Rec. W. Austr. Mus. 18: 157-178.
Johnstone, R.E. & G. M. Storr, 1998. Handbook of Western Australian birds I. Non-Passeriformes. Western Australian Museum, Perth: x + 436 p.
Jollie, M., 1978. Phylogeny of the species of *Corvus*.— Biologist 60: 73-108.
Jonkers, B. & H. Roersma, 1990. New subspecies of *Lonchura spectabilis* from East Sepik Province, Papua New Guinea.— Dutch Birding 12: 22-25.
Junge, G.C.A., 1936. Fauna Simalurensis - Aves.— Temminckia 1: 1-74, pl. I-III.
Junge, G.C.A., 1937a. Further notes on the birds of Simalur.— Temminckia 2: 197-202.
Junge, G.C.A., 1937b. The birds of south New Guinea. Part I. Non Passeres.— Nova Guinea (n.s.) 1: 125-188, pl. I-II.
Junge, G.C.A., 1938. On a collection of birds from Enggano.— Treubia 16: 339-356.
Junge, G.C.A., 1948. Notes on some Sumatran birds.— Zool. Meded. 29: 311-326.
Junge, G.C.A., 1953. Zoological results of the Dutch New Guinea expedition, 1939, No. 5. The birds.— Zool. Verh. 20: 1-77.
Junge, G.C.A., 1954. Ornithologisch onderzoek in de Indische Archipel.— Ardea 41: 301-336.
Junge, G.C.A., 1956. New bird records from Biak Island.— Zool. Meded. 34: 231-237.
Kate, H.F.C. ten, 1894. Verslag eener reis in de Timorgroep en Polynesië. E.J. Brill, Leiden: 311 p., 12 pl., 1 kaart.

Keast, J.A., 1958. Variation and speciation in the Australian Campephagidae (Passeres).— Austr. J. Zool. 6: 248-267.
Keast, J.A., 1961. Bird speciation on the Australian Continent.— Bull. Mus. Comp. Zool. 123: 303-495.
Keve, A., 1978. Revision der Unterarten des Feldsperlings [*Passer montanus* (Linné, 1758)].— Zool. Abh. Dresden 34: 245-273.
King, B., 1989. The avian genera *Tesia* and *Urosphena*.— Bull. Brit. Orn. Cl. 109: 162-166.
King, B., 1990. Metallic Pigeon *Columba vitiensis* sighting on Flores.— Kukila 5: 74.
Kooiman, J.G., 1940a. Zeldzame trekvogels.— Trop. Nat. 29: 122-123.
Kooiman, J.G., 1940b. Mededeelingen over het voorkomen in Oost-Java van enkele voor dit gewest nog niet in de literatuur genoemde vogels.— Ardea 29: 98-108.
Kooij, H. van der & B. Voslamber, 1997. Aantalsontwikkeling van de Grote Zilverreiger *Egretta alba* in Nederland sinds 1970 in een Europees perspectief.— Limosa 70: 119-125.
Kuroda, N., 1933. Birds of the Island of Java. I: Passeres. Tokyo: ixv, 1-370, pl. I-XIV.
Kuroda, N., 1936. Birds of the Island of Java II: Non-Passeres. Tokyo: i-vi, 371-794, pl. XV-XXXIV.
Lack, D., 1971. Ecological isolation in birds. Blackwell, Oxford & Edinburgh: xi + 404 p.
Lane, B.A., 1987. Shorebirds in Australia: ix + 187 p.
Lansdown, R.V., 1987. Recent extensions of breeding range of the Yellow Bittern *Ixobrychus sinensis*.— Forktail 3: 61-63.
Lansdown, R.V., 1992. The status and conservation of the Sumatran Heron *Ardea sumatrana*.— Heron Conservation Newsletter 5.
LeFevre, R.H., 1962. The birds of northern Shantung Province, China. York, Pennsylvania: 151 p.
Lieftinck, M.A., 1950. Bij het nest van *Monarcha trivirgata nigrimentum* G.R. Gray.— Ardea 38: 238-239, pl. IV-VII.
Linnaeus, C., 1766. Systema naturae (ed. 12), 1. Holmiae: 532 p.
Lynes, H., 1930. Review of the genus *Cisticola*.— Ibis (12) 6, Suppl.: i-ii, 1-673 and Pictures.
McCracken, K.G. & F.H. Sheldon, 1998. Molecular and osteological heron phylogenesis: sources of incongruence.— Auk 115: 127-141.
McKean, J.L., 1980. The first record of the Arctic Warbler *Phylloscopus borealis* from Australia.— W. Austr. Nat. 14: 200.
McKean, J.L., 1982. Some notes on the birds of Sulawesi (Celebes).— Papua New Guinea Bird Soc. Newsl. 191-192: 12-17.
McKean, J.L., 1989. Taxonomic relationships of the White-rumped Kingfisher *Caridonax fulgidus*.— Kukila 4: 43-44.
McKean, J. L., I. J. Mason & L. W, O'Connor, 1975. Birds not previously recorded from Timor.— Emu 75: 62-64.
Marchant, J., 1916. Alfred Russel Wallace: letters and reminiscences. London. I: xii + 320 p., II: viii + 291 p.
Marchant, S. & P.J. Higgins (eds.), 1993. Handbook of Australian, New Zealand and Antarctic birds, 2 - Raptors to lapwings. Oxford University Press, Melbourne: 984 p., 68 pl.
Marin, M. & F.H. Sheldon, 1987. Some new nesting records of padi-dwelling birds in Sabah, East Malaysia (North Borneo).— Bull. Brit. Orn. Cl. 107: 23-25.
Marle, J.G. van, 1940a. Aanteekeningen omtrent de vogels van de Minahasa (N.O. Celebes).— Limosa 13: 65-70.
Marle, J.G. van, 1940b. Aanteekeningen omtrent de vogels van de Minahasa (N.O. Celebes) II.— Limosa 13: 119-124.
Marle, J.G. van & K.H. Voous, 1988. The birds of Sumatra, an annotated check-list.— B.O.U. Check-list No. 10: 265 p.
Marshall, J.T., 1978. Systematics of smaller Asian night birds based on voice. A.O.U. Orn. Monogr. 25: i-v, 1-58.
Martens, E. von, 1876. Die Preussische Expedition nach Ost-Asien. Zool. I: i-xii, 1-412.
Mason, I.J. & R.I. Forrester, 1996. Geographical differentiation in the Channel-billed Cuckoo *Scythrops novaehollandiae* Latham, with description of two new subspecies from Sulawesi and the Bismarck Archipelago.— Emu 96: 217-228.

Mason, I.J & J.L. McKean, 1982. Taxonomic status of the Timor cuckoo-shrike *Coracina personata* Müller.— Bull. Brit. Orn. Cl. 102: 127-129.
Mathews, G.M., 1910-1912. The birds of Australia 1. Witherby & Co.,London: xiv + 301 p.
Mathews, G.M., 1912. A reference-list to the birds of Australia.— Novit. Zool. 18: 171-656.
Mathews, G.M., 1913. A list of the birds of Australia. Witherby & Co., London: xxvii + 453 p.
Mathews, G.M., 1914a. A list of the birds of Melville Island, Northern Territory, Australia.— Ibis (10) 2: 91-132.
Mathews, G.M., 1914b. On the species and subspecies of the genus *Fregata*.— Austral Av. Rec. 2: 117-121.
Mathews, G.M., 1915-1916. The birds of Australia 5.— Witherby & Co., London: xi + 440 p.
Mathews, G.M., 1918. On *Pachycephala melanura* Gould. — Austral Av. Rec. 3: 134-138.
Mathews, G.M., 1927. Systema avium Australasianarum. Part I. B.O.U., London: i-xvii, 1-426.
Mathews, G.M., 1930. Systema avium Australasianarum. Part II. Taylor and Francis, London: i-iv, 427-1047.
Mauersberger, G., 1983. Ungelöste taxonomische Probleme der mongolischen Avifauna.— Mitt. Zool. Mus. Berlin 59, Suppl.: Ann. Orn. 7: 47-83.
Mayr, E., 1937. Birds collected during the Whitney South Sea expedition XXXIII. Notes on New Guinea birds. I.— Amer. Mus. Novit. 1915: 1-19.
Mayr, E., 1941a. Ueber einige Raubvügel der Kleinen Sunda-Inseln.— Orn. Mber. 49: 42-47.
Mayr, E., 1941b. List of New Guinea birds. American Museum of Natural History, New York: xi + 260 p.
Mayr, E., 1943. Notes on Australian birds (II).— Emu 43: 3-17.
Mayr, E., 1944a. The birds of Timor and Sumba.— Bull. Amer. Mus. Nat. Hist. 83: 123-194.
Mayr, E., 1944b. Timor and the colonization of Australia by birds.— Emu 44: 113-130.
Mayr, E., 1945. Birds collected during the Whitney South Sea expedition. 55. Notes on the birds of northern Melanesia. 1.— Amer. Mus. Novit. 1294: 1-12.
Mayr, E., 1967. Family Zosteropidae. In R.A. Paynter (ed.): Check-list of birds of the world 12: 289-326.
Mayr, E., 1979. Family Pittidae. In M.A. Traylor (ed.): Check-list of birds of the world 8: 310-329.
Mayr, E. & D. Amadon, 1947. A review of the Dicaeidae.— Amer. Mus. Novit. 1360: 1-32.
Mayr, E., R.A. Paynter & M.A. Traylor, 1968. Family Estrildidae. In R.A. Paynter (ed.): Check-list of birds of the world 14: 306-389.
Mayr, E. & F. Vuilleumier, 1983. New species of birds described from 1966 to 1975.— J. f. Orn. 124: 217-232.
Medway, Lord & D.R. Wells, 1976. The birds of the Malay Peninsula 5. Witherby, London: xxxi + 448 p., 24 pl.
Mees, G.F., 1954. De geluiden van *Cacomantis variolosus sepulcralis* (S. Müller) en *Cacomantis merulinus lanceolatus* (S. Müller). — Ardea 42: 346–349.
Mees, G.F., 1957. A systematic review of the Indo-Australian Zosteropidae (Part I).— Zool. Verh. 35: 1-204.
Mees, G.F., 1961a. A systematic review of the Indo-Australian Zosteropidae (Part II).— Zool. Verh. 50: 1-168, pl. I-IV.
Mees, G.F., 1961b. An annotated catalogue of a collection of bird-skins from West Pilbara, Western Australia.— J. Roy. Soc. W. Austr. 44: 97-143.
Mees, G.F., 1964a. A revision of the Australian owls (Strigidae and Tytonidae).— Zool. Verh. 65: 1-62.
Mees, G.F., 1964b. Notes on two small collections of birds from New Guinea.— Zool. Verh. 66: 1-37.
Mees, G.F., 1964c. Geographical variation and distribution of some birds from Western Australia.— J. Roy. Soc. W. Austr. 47: 91-96.
Mees, G.F., 1965. The avifauna of Misool.— Nova Guinea, Zool. 31: 139-203, pl. III-VI.
Mees, G.F., 1969. A systematic review of the Indo-Australian Zosteropidae (Part III).— Zool. Verh. 102: 1-390.
Mees, G.F., 1970. Notes on some birds from the island of Formosa (Taiwan).— Zool. Meded. 44: 285-304.
Mees, G.F., 1971a. The Philippine subspecies of *Centropus bengalensis* (Gmelin) (Aves, Cuculidae). — Zool. Meded. 45: 189-191.
Mees, G.F., 1971b. Systematic and faunistic remarks on birds from Borneo and Java.— Zool. Meded. 45: 225-244.

Mees, G.F., 1972. Die Vögel der Insel Gebe.— Zool. Meded. 46: 69-89.
Mees, G.F., 1973. Description of a new member of the *Monarcha trivirgata*-group from Flores, Lesser Sunda Islands.— Zool. Meded. 46: 179-181.
Mees, G.F., 1975a. Status of *Ardea novaehollandiae* in the Lesser Sunda Islands.— Bull. Brit. Orn. Cl. 95: 128.
Mees, G.F., 1975b. A list of the birds known from Roti and adjacent islets (Lesser Sunda Islands).— Zool. Meded. 49: 115-140.
Mees, G.F., 1976. Some birds recorded from Timor by Salomon Müller in 1828-29.— Emu 76: 150-151.
Mees, G.F., 1977a. Geographical variation of *Caprimulgus macrurus* Horsfield (Aves, Caprimulgidae).— Zool. Verh. 155: 1-47.
Mees, G.F., 1977b. The subspecies of *Chlidonias hybridus* (Pallas), their breeding distribution and migrations (Aves, Laridae, Sterninae).— Zool. Verh. 157: 1-64.
Mees, G.F., 1981. The sparrow-hawks (*Accipiter*) of the Andaman Islands.— J. Bombay Nat. Hist. Soc. 77 (1980): 371-412.
Mees, G.F., 1982a. Birds from the lowlands of southern New Guinea (Merauke and Koembe).— Zool. Verh. 191: 1-188.
Mees, G.F., 1982b. Bird records from the Moluccas.— Zool. Meded. 56: 91-111.
Mees, G.F., 1982c. Review. [R. Schodde & I.J. Mason: Nocturnal birds of Australia, 1981].— Emu 82: 182-184; Corrigendum, Emu 84: 63.
Mees, G.F., 1984a. A new subspecies of *Accipiter virgatus* (Temminck) from Flores, Lesser Sunda Islands, Indonesia (Aves: Accipitridae).— Zool. Meded. 58: 313-321.
Mees, G.F., 1984b. Boekbespreking. [Cramp, Handbook of the birds of Europe, etc. III, 1983].— Ardea 72: 243-245.
Mees, G.F., 1985. *Caprimulgus macrurus* Horsfield and related forms, a re-evaluation.— Proc. Kon. Ned. Akad. Wetensch. C 88: 419-428.
Mees, G.F., 1986. A list of the birds recorded from Bangka Island, Indonesia.— Zool. Verh. 232: 1-176.
Mees, G.F., 1989. Remarks on the ornithological parts of Horsfield's 'Zoological Researches in Java'.— Proc. Kon. Ned. Akad. Wetensch. C 92: 367-378.
Mees, G.F., 1990. Historisches über *Anthus gustavi* Swinhoe.— Mitt. Zool. Mus. Berlin 66, Suppl. Ann. Orn. 14: 137-141.
Mees, G.F., 1992. Review. [E.C. Dickinson, R.S. Kennedy & K.C. Parkes: The birds of the Philippines, 1991].— Ibis 134: 385-386.
Mees, G.F., 1994. Vogelkundig onderzoek op Nieuw–Guinea in 1828. — Zool. Bijdr. 40: 1-64.
Mees, G.F., 1996. Geographical variation of birds in Java. Publ. Nuttall Orn. Cl. 126: viii + 119 p.
Meinertzhagen, R., 1912. On the birds of Mauritius.— Ibis (9) 6: 82-108.
Meinertzhagen, R., 1926. Introduction to a review of the genus *Corvus*.— Novit. Zool. 33: 57-121.
Meise, W., 1929. Die Vögel von Djampea und benachbarten Inseln nach einer Sammlung Baron Plessens (I).— J.f. Orn. 77: 431-480.
Meise, W., 1941. Ueber die Vogelwelt von Noesa Penida bei Bali nach einer Sammlung von Baron Viktor von Plessen.— J.f. Orn. 89: 345-376.
Meyer, A.B., 1894. Beschreibung einiger neuen Vögel aus dem Ostindischen Archipel.— J.f. Orn. 42: 89-83.
Meyer, A.B. & L.W. Wiglesworth, 1898. The birds of Celebes. Friedländer/Berlin: xxxii + 130 + 962 p.
Mivart, St.G., 1896. A monograph of the lories or brush-tongued parrots, composing the family Loriidae. R.H. Porter, London: liii + 193 p., Lxi pls.
Moeliker, C.W. & C.J. Heij, 1995. The resdiscovery of *Monarcha boanensis* (Aves: Monarchidae) from Boano Island, Indonesia.— Deinsea, Rotterdam 2: 123-143.
Moeliker, C.W. & C.J. Heij, 1995. Black-chinned monarchs *Monarcha boanensis* on Boano Island.— OBC Bull. 24: 49-52.
Moreau, R.E., 1967. Family Zosteropidae (African and Indian Ocean taxa). In R.A. Paynter (ed.): Check-list of birds of the world 12: 326-337.
Müller, S., 1842/1847. Bijdragen tot de kennis van Timor en eenige naburige eilanden.— Verh. Nat. Gesch. Ned. Overz. Bez., Land- en Volkenkunde: 131-320.

Musschenbroek, S.C.J.W. van, 1883. Dagboek van Dr H.A. Bernstein's laatste reis, van Ternate naar Nieuw-Guinea, Salawati en Batanta, 17 October 1864-19 April 1865. 's-Gravenhage: 258 p.
Nadler, T., 1976. Die Zwergseeschwalbe. Neue Brehm-Bücherei 495: 136 p.
Nicoll, M.J., 1906. On the birds collected and observed during the voyage of the 'Valhalla', R.Y.S., from November 1905 to May 1906.— Ibis (8) 6: 666-712, pl. XXI.
Oberholser, H.C., 1909. A revision of the kingfisher genus *Ramphalcyon* (*Pelargopsis*).— Proc. U.S. Nat. Mus. 35: 657-680.
Oberholser, H.C., 1911. A monograph of the flycatcher genera *Hypothymis* and *Cyanonympha*.— Proc. U.S. Nat. Mus. 39: 585-615.
Olsen, P. & T.G. Marples, 1993. Geographic variation in egg size, clutch size and date of laying of Australian raptors (Falconiformes and Strigiformes).— Emu 93: 167-179.
Oort, E.D. van, 1907. Catalogue ostéologique des oiseaux.— Mus. Hist. Nat. Pays-Bas 10(1): i-viii, 1-384.
Oort, E.D. van, 1910. List of a collection of birds from western Java and from Krakatau.— Notes Leyden Mus. 32: 105-166.
Oortwijn, R.G.M., 1987. Geographic variation and subspecies of *Corvus enca* (Horsfield, 1821).— Zool. Meded. 61: 31-51.
Ottow, J. & J.A.J. Verheijen, 1969. Zur Lebensweise der Kuckucke von Flores.— J.f. Orn. 110: 27-29.
Parker, S.A., 1981. Prolegomenon to further studies in the *Chrysococcyx 'malayanus*' group (Aves, Cuculidae).— Zool. Verh. 187: 1-56, pl. 1-2.
Parker, S.A, H.J. Eckert & G.B. Ragless, 1985. An annotated checklist of the birds of South Australia. Part 2A: Waterfowl. Adelaide: viii + 25 p.
Parkes, K.C., 1958. Taxonomy and nomenclature of three species of *Lonchura* (Aves: Estrildinae).— Proc. U.S. Nat. Mus. 108: 279-293.
Parkes, K.C., 1971. Taxonomic and distributional notes on Philippine birds.— Nemouria 4: 1-67.
Payne, R.B., 1979. Family Ardeidae. In E. Mayr & G.W. Cottrell (eds.), Check-list of birds of the world 1 (2nd ed.): 193-244.
Payne, R.B. & C.J. Risley, 1976. Systematic and evolutionary relationships among the herons (Ardeidae).— Misc. Publ. Mus. Zool. Univ. Michigan 150: iv + 115 p.
Paynter, R.A., 1963. Birds from Flores, Lesser Sunda Islands.— Breviora 182: 1-5.
Peters, J.L., 1937. Check-list of birds of the world 3: xiii + 311 p.
Peters, J.L., 1940. Check-list of birds of the world 4: xii + 291 p.
Peters, J.L., 1960. Family Hirundinidae. In E. Mayr & J.C. Greenway (eds.), Check-list of birds of the world 9: 80-129.
Peters, J.L. & E. Mayr, 1960. Family of Campephagidae. In E. Mayr & J.C. Greenway (eds.), Check-list of Birds of the world 9: 167-221.
Pfeffer, P., 1958. Répartition écologique de l'avifaune des îles Flores, Rintja et Komodo (Petites îles de la Sonde).— Ois. & Rev. Fr. d'Orn. 28: 59-72.
Pfeffer, P., 1960. Etude d'une collection d'oiseaux de Borneo.— Ois. & Rev. Fr. d'Orn. 30: 191-218.
Pfeffer, P., 1965. Auf den Inseln des Drachen. Schwabenverlag/Stuttgart: 158 p.
Pilgrim, J., 1998. Preliminary report on the Flores '97 expedition.— Ibis 140: 559.
Pulle, A.W., 1910. In memorian Gijsbertus Adriaan Johan van der Sande, Officier van Gezondheid 1e klasse.— Marineblad, Febr. 1910: 586a-d. (personalia 65).
Rand, A.L., 1942. Results of the Archbold expeditions. No. 43. Birds of the 1938-1939 New Guinea expedition.— Bull. Amer. Mus. Nat. Hist. 79: 425-515.
Rand, A.L., 1970. Species formation in the blue monarch flycatchers genus *Hypothymis*.— Nat. Hist. Bull. Siam Soc. 23: 353-365.
Rand, A.L. & E.T. Gilliard, 1967. Handbook of New Guinea birds. Weidenfeld & Nicholson, London: × + 612 p.
Rasmussen, P.C., 1998. A new scops-owl from Great Nicobar Island.— Bull. Brit. Orn. Cl. 118: 141-153.
Reichenow, A., 1882. Conspectus Psittacorum. Systematische Übersicht aller bekannten Papageienarten. Berlin: 234 p.
Rensch, B., 1928a. Neue Vogelrassen von den Kleinen Sunda-Inseln I.— Orn. Mber. 36: 6-10.
Rensch, B., 1928b. Neue Vogelrassen von den Kleinen Sunda-Inseln II.— Orn. Mber. 36: 47-49.

Rensch, B., 1928c. Neue Vogelrassen von den Kleinen Sunda-Inseln III.— Orn. Mber. 36: 80-81.
Rensch, B., 1928d. Die Kleinen Sunda-Inseln als indo-australisches Mischgebiet.— Sitzb. Ges. naturf. Fr. Berlin (1928): 1-7.
Rensch, B., 1930. Eine biologische Reise nach den Kleinen Sunda-Inseln. Borntraeger, Berlin: xii + 236 p.
Rensch, B., 1931a. Die Vogelwelt von Lombok, Sumbawa und Flores.— Mitt. Zool. Mus. Berlin 17: 451-637.
Rensch, B., 1931b. Ueber einige Vogelsammlungen des Buitenzorger Museums von den Kleinen Sunda-Inseln.— Treubia 13: 371-400.
Rensch, B., 1936. Die Geschichte des Sundabogens. Borntraeger, Berlin: viii + 318 p.
Restall, R.L., 1992. A new sub-species of the Spice Bird *Lonchura punctulata* from Borneo.— Avicult. Mag. 98: 115-118.
Restall, R.L., 1995. Proposed additions to the genus *Lonchura* (Estrildinae).— Bull. Brit. Orn. Cl. 115: 140-157.
Ridgway, R., 1914. The birds of North and Middle America. Part VI.— U.S. Nat. Mus. Bull. 50(6): xx + 882 p., XXXVI pl.
Riley, J.H., 1918. Two new genera and eight new birds from Celebes. — Proc. Biol. Soc. Wash. 31: 155–160.
Ripley, S.D., 1941a. Notes on a collection of birds from northern Celebes.— Occ. Pap. Boston Soc. Nat. Hist. 8: 343-358.
Ripley, S.D., 1941b. Notes on the genus *Coracina*.— Auk 58: 381-395.
Ripley, S.D., 1942a. A review of the species *Anas castanea*.— Auk 59: 90-99.
Ripley, S.D., 1942b. The species *Eurystomus orientalis*.— Proc. Biol. Soc. Wash. 55: 169-176.
Ripley, S.D., 1944. The bird fauna of the West Sumatra islands.— Bull. Mus. Comp. Zool. 94: 305-430, pl. 1-2.
Ripley, S.D., 1952. A note on the species *Muscicapa westermanni*.— Proc. Biol. Soc. Wash. 65: 71-74.
Ripley, S.D., 1959. Birds from Djailolo, Halmahera.— Postilla 41: 1-8.
Ripley, S.D., 1977. Rails of the world. Boston: 406 p., pls.
Ripley, S.D. & B.M. Beehler, 1987. Species status of the Malaysian three-toed kingfishers (*Ceyx*) – a re-assessment.— Bull. Brit. Orn. Cl. 107: 145-151.
Roberts, T.J. & B. King, 1986. Vocalizations of the owls of the genus *Otus* in Pakistan.— Ornis Scand. 17: 299-305.
Robinson, H.C. & C.B. Kloss, 1921-1924. The birds of south-west and peninsular Siam.— J. Nat. Hist. Soc. Siam 5: 1-397.
Robinson, H.C. & C.B. Kloss, 1924a. On a large collection of birds chiefly from West Sumatra made by Mr E. Jacobson.— J. Fed. Malay St. Mus. 11: 189-347.
Robinson, H.C. & C.B. Kloss, 1924b. A nominal list of the birds collected in Java.— Treubia 5: 267-298.
Robinson, H.C. & C.B. Kloss, 1927. Some notes on bird names. — J. Fed. Malay St. Mus. 13: 213-216.
Rosenberg, H. von, 1881. Ein Jäger-Eldorado.— Zool. Garten 22: 164-168.
Rothschild, W., 1897. Description of a new hill-wren from Flores.— Novit. Zool. 4: 168. [*Pnoepyga everetti*].
Rothschild, W., 1927. Corrections and criticisms to the article on the avifauna of Yunnan.— Novit. Zool. 33: 398-400.
Rüppell, E., 1845. Systematische Uebersicht der Vögel Nord-Ost-Afrika's. Frankfurt a.M.: viii + 140 p., 50 pl.
Sabrosky, C.W., 1964. Comments on the gender of generic names ending in -ops.— Bull. Zool. Nomencl. 21: 215-217.
Salomonsen, F., 1960. Notes on flowerpeckers (Aves, Dicaeidae) 2. The primitive species of the genus *Dicaeum*.— Amer. Mus. Novit. 1991: 1-38.
Salomonsen, F., 1961. Notes on flowerpeckers (Aves, Dicaeidae) 4. *Dicaeum igniferum* and its derivatives.— Amer. Mus. Novit. 2057: 1-35.
Salomonsen, F., 1983. Revision of the Melanesian swiftlets (Apodidae, Aves) and their conspecific forms in the Indo-Australian and Polynesian region.— Kong. Danske Vidensk. Selsk., Biol. Skr. 23 (5): 1-112.

Salvadori, T., 1874. Catalogo sistematico degli uccelli di Borneo.— Ann. Mus. Genova 5 i-lii, 1-431.
Salvadori, T., 1879. Prodromus ornithologiae Papuasiae et Moluccarum. VII. Passeres. Hirundinidae-Muscicapidae.— Ann. Mus. Genova 14: 490-508.
Salvadori, T., 1881. Ornitologia della Papuasia e delle Molucche 2: xvi + 707 p.
Salvadori, T., 1891. Catalogue of the birds in the British Museum 20: xvii + 659 p., XVIII pl.
Salvadori, T., 1893. Catalogue of the birds in the British Museum 21: xix + 676p., XV pl.
Salvadori, T., 1895. Catalogue of the birds in the British Museum 27: xv + 438 p., 19 pl.
Salvin, O., 1882. A catalogue of the collection of birds formed by the late Hugh Edwin Strickland, M.A. University Press, Cambridge: xvi + 652 p.
Schauensee, R.M. de, 1957. One some avian types, principally Gould's, in the collection of the Academy.— Proc. Acad. Nat. Sci. Philad. 109: 123-246.
Schauensee, R.M. de & J.E. du Pont, 1962. Birds from the Philippine Islands.— Proc. Acad. Nat. Sci. Philad. 114: 149-173.
Schifter, H., 1992. Die Vögel aus dem Nachlaß Ferdinand Lucas Bauer im Naturhistorischen Museum Wien und die darunder befindlichen Typen. — Ann. Naturhist. Mus. Wien 93 B: 41–57, Taf. 1-3.
Schlegel, H., 1862. Aquilae.— Mus. Hist. Nat. Pays-Bas 2 (mon. 3): 1-24.
Schlegel, H., 1863a. Ardeae.— Mus. Hist. Nat. Pays-Bas 5 (mon. 16): 1-64.
Schlegel, H., 1863b. Alcedines.— Mus. Hist. Nat. Pays-Bas 3 (mon. 17): 1-52.
Schlegel, H., 1864a. Sternae.— Mus. Hist. Nat. Pays-Bas 6 (mon. 24): 1-44.
Schlegel, H., 1864b. Cuculi.— Mus. Hist. Nat. Pays-Bas 1 (mon. 25): 1-85.
Schlegel, H., 1864c. Scolopaces.— Mus. Hist. Nat. Pays-Bas 5 (mon. 27): 1-112.
Schlegel, H., 1864d. De vogels van Nederlandsch Indië / Les oiseaux des Indes Neérlandaises. De ijsvogels: 1-70, pl. 1-16.
Schlegel, H., 1865a. Ciconiae.— Mus. Hist. Nat. Pays-Bas 5 (mon. 28): 1-26.
Schlegel, H., 1865b. Cursores.— Mus. Hist. Nat. Pays-Bas 4 (mon. 29): 1-80.
Schlegel, H., 1866a. Anseres.— Mus. Hist. Nat. Pays-Bas 6 (mon. 31): 1-122.
Schlegel, H., 1866b. Observations zoologiques.— Ned. Tijdschr. Dierk. 3: 181-213.
Schlegel, H., 1866c. De vogels van Nederlandsch Indië / Les oiseaux des Indes Neérlandaises. De valkvogels. Accipitres: 1-84, pl. 1-28.
Schlegel, H., 1873. Columbae.— Mus. Hist. Nat. Pays Bas 4 (mon. 35): 1-180.
Schlegel, H., 1874a. Revue de la collection des brèves (*Pitta*) faisant partie du Musée des Pays-Bas.— Mus. Hist. Nat. Pays-Bas 3 (mon. 37): 1-19.
Schlegel, H., 1874b. Revue de la collection des Alcedines faisant partie du Musée des Pays-Bas.— Mus. Hist. Nat. Pays-Bas 3 (mon. 39): 1-47.
Schlegel, H., 1880. Megapodii.— Mus. Hist. Nat. Pays-Bas 8 (mon. 41): 52-86.
Schmutz, E., MS (1977). Die Vögel der Manggarai (Flores).
Schodde, R. & I.J. Mason, 1980. Nocturnal birds of Australia. Lansdowne Editions, Melbourne, etc.: 135 p., ill.
Schodde, R. & I. J. Mason, 1998. Directory of Australian birds. Passerines. CSIRO Publishing, Collingwood, Vic.: x + 851 p.
Schodde, R. & G. F. van Tets, 1981. First record of the Brown Hawk-Owl *Ninox scutulata* from Australasia.— Emu 81: 171.
Schönwetter, M., 1934. Vogeleier von Timor und Waigeu.— Orn. Mber. 42: 40-43.
Schönwetter, M., 1962. Handbuch der Oologie I (Lief. 6): 321-384.
Schönwetter, M., 1988. Handbuch der Oologie IV (Lief. 44): 193-384.
Severin, T., 1999. The Spice Islands voyage in search of Wallace. Abacus, London: 302 p. (reprint; first published in 1997).
Sharland, M., 1958. Tasmanian birds. Angus & Robertson, Sydney, etc.: xv + 175 p.
Sharpe, R.B., 1868-1871. A monograph of the Alcedinidae. London: 120 pl. with text.
Sharpe, R.B., 1877. On birds collected by Professor J. B. Steere in the Philippine Archipelago.— Trans. Linn. Soc. Lond., Zool. 1: 307-355, pl. 46-54.
Sharpe, R.B., 1885. Catalogue of the birds in the British Museum 10: xiii + 682 p., XII pls.
Sharpe, R.B., 1890. Catalogue of the birds in the British Museum 13: xvi + 702 p., 15 pl.

Sharpe, R.B., 1892. Family Alcedinidae.— Catalogue of the birds in the British Museum 17: 93-312.
Sharpe, R.B., 1896. Catalogue of the birds in the British Museum 24: xii + 794 p., VII pl.
Sheldon, F.H., 1985. The taxonomy and biogeography of the thick-billed flowerpecker complex in Borneo.— Auk 102: 606-612.
Shelley, G.E., 1891. Family Cuculidae.— Cat. Birds Brit. Mus. 19: 209-434.
Sibley, C.G. & B.L. Monroe, Jr., 1990. Distribution and taxonomy of birds of the world: xxiv + 1111 p.
Siebers, H.C., 1930. Fauna Buruana. Aves.— Treubia 7, Suppl.: 164-303.
Simpson, K., 1972. Birds in Bass Strait. A. H. & A. W. Reed for BHP, Sydney, etc.: 112 p.
Smythies, B.E., 1957. An annotated checklist of the birds of Borneo.— Sarawak Mus. J. 7: v-xv, 523-818, map.
Smythies, B.E., 1960. The birds of Borneo. Oliver & Boyd, Edinburgh/London: xvi + 562 p.
Smythies, B.E., 1968. The birds of Borneo (2nd ed.): xx + 593 p.
Smythies, B.E., 1981. The birds of Borneo (3rd ed., revised by the Earl of Cranbrook): xiv + 473 p.
Smythies, B.E., 1986. The birds of Burma. 3rd (revised) ed.: xxxii + 432 p., XXXII pl.
Smythies, B.E., 1999. The birds of Borneo (4th ed., revised by G.W.H. Davison). Natural History Publications (Borneo): xii + 853 p.
Snow, D.W. & R.E. Moreau, 1955. The gender of *Zosterops*.— Bull. Brit. Orn. Cl. 75: 44.
Sody, H.J.V., 1954. Waarnemingen over de trek van de Aziatische Watersnip, *Capella stenura* (Bp.).— Ardea 42: 341-343.
Somadikarta, S., 1986. *Collocalia linchi* Horsfield & Moore - a revision.— Bull. Brit. Orn. Cl. 106: 32-40.
Somadikarta, S. & D.A. Holmes, 1979. An influx of Australian pelicans *Pelecanus conspicillatus* in Indonesia.— Bull. Brit. Orn. Cl. 99: 154.
Somadikarta, S. & M. Noerdjito, 1982. The Lesser Whistling Duck *Dendrocygna javanica* (Horsfield) in Flores.— Bull. Brit. Orn. Cl. 102: 94-95.
Sousa, J.A. de, 1883. Uma collecçao de aves de Timor.— Bol. Soc. Geogr., Lisboa 9: 453-459. (non vidi).
Steinbacher, J., 1979. Family Threskiornithidae. In E. Mayr & G.W. Cottrell (eds.): Check-list of birds of the world (2nd. ed.) 1: 253-268.
Stokes, T., 1988. A review of the birds of Christmas Island, Indian Ocean.— Austr. Nat. Parks Wildl. Service, Occ. Pap. 16: viii + 39 p.
Stone, W. & G.M. Mathews, 1913. A list of the species of Australian birds described by John Gould, with the location of the type-specimens.— Austral Av. Rec. 1: 129-180.
Storr, G., 1973. List of Queensland birds.— W.Austr. Mus. Spec. Publ. 5: iii + 177 p.
Storr, G.M., 1984. Revised list of Queensland birds.— Rec. W. Austr. Mus. Suppl. 19: 1-189.
Stresemann, E., 1913a. Ornithologische Miszellen aus dem indo- australischen Gebiet. II. Teil.— Novit. Zool. 20: 289-324.
Stresemann, E., 1913b. Die Vögel von Bali.— Novit. Zool. 20: 325-387, pl. II.
Stresemann, E., 1914a. Die Vögel von Seran (Ceram).— Novit. Zool. 21: 24-153, pl. III-V.
Stresemann, E., 1914b. Was ist *Collocalia fuciphaga* (Thunb.)? – Verh. Orn. Ges. Bayern 12: 1-12.
Stresemann, E., 1914c. Beiträge zur Kenntnis der Avifauna von Buru.— Novit. Zool. 21: 358-400.
Stresemann, E., 1920. Avifauna Macedonica. Dultz & Co., München: xxiv + 270 p., VI Taf.
Stresemann, E., 1922. *Fregata minor minor* (Gm.) an der Küste von Timor.— Orn. Mber. 30: 113-114.
Stresemann, E., 1925. Beiträge zur Ornithologie der indo-australischen Region.— Mitt. Zool. Mus. Berlin 12: 177-195.
Stresemann, E., 1930. Eine Vogelsammlung vom Vulkan Papandajan (West-Java).— Treubia 12: 425-430.
Stresemann, E., 1931. Vorläufiges über die ornithologischen Ergebnisse der Expedition Heinrich 1930-31. V. Zur Ornithologie von Halmahera und Batjan.— Orn. Mber. 39: 167-171.
Stresemann, E., 1936. A nominal list of the birds of Celebes.— Ibis (13) 6: 356-369.
Stresemann, E., 1939. Die Vögel von Celebes. Teil I und II.— J.f. Orn. 87: 299-425.
Stresemann, E., 1940a. Die Vögel von Celebes. Teil III. Systematik und Biologie.— J.f. Orn. 88: 1-135, 389-487.
Stresemann, E., 1940b. Zur kenntnis der Wespenbussarde (*Pernis*).— Arch. f. Naturg. (N.F.) 9: 137-193.
Stresemann, E., 1941. Die Vögel von Celebes. Teil III. Systematik und Biologie (Schluss).— J.f. Orn. 89: 1-102.

Stresemann, E., 1951. Type localities of Australian birds collected by the 'Expedition Baudin' (1801-1803).— Emu 51: 65-70.
Stresemann, E., 1952. On the birds collected by Pierre Poivre in Canton, Manila, India and Madagascar (1751-1756).— Ibis 94: 499-523.
Stresemann, E. & D. Amadon, 1979. Order Falconiformes. In E. Mayr & G.W. Cottrell (eds.): Check-list of birds of the world 1 (2nd ed.): 271-425.
Stresemann, E. & V. Stresemann, 1966. Die Mauser der Vögel.— J. f. Orn. 107, Sonderheft: i-viii, 1-445.
Sutter, E., 1955. Über die Mauser einiger Laufhühnchen und die Rassen von *Turnix maculosa* und *sylvatica* im indo-australischen Gebiet.— Verh. Naaturf. Ges. Basel 66: 85-139.
Swann, H.K., 1922. A synopsis of the Accipitres (Diurnal birds of prey), 2nd. ed., London: viii + 233 + 1 p.
Temminck, C.J., 1839. Tableau Méthodique.— Recueil d'Ois. 1 (livr. 102): 1-109.
Thompson, M.C., 1966. Birds from North Borneo.— Univ. Kansas Publ., Mus. Nat. Hist. 17: 377-433.
Ticehurst, C.B., 1938. A systematic review of the genus *Phylloscopus*.— British Museum, London: viii + 193 p., II pl.
Trainor, C.R., 2002a. The birds of Adonara, Lesser Sundas, Indonesia.— Forktail 18: 93-100.
Trainor, C.R., 2002b. Status and habitat associations of birds on Lembata Island, Wallacea, Indonesia, with reference to a simple technique for avifaunal survey on small islands.— Bird Conservation Internattional 12: 365-381.
Trainor, C.R. & Dwi Lesmana, 2000. Exploding volcanoes, unique birds, gigantic rats and elegant ikat: identifying sites of international biodiversity significance on Flores, Nusa Tanggara PKA/ BirdLifeWWF. Bogor. Rep. 11: xvi + 269 p.
Turbott, E.G. (convener), 1990. Checklist of the birds of New Zealand (3rd ed.): xv + 247 p.
Vaurie, C., 1949. A revision of the bird family Dicruridae.— Bull. Amer. Mus. Nat. Hist. 93: 199-342.
Vaurie, C., 1951. Notes on some Asiatic swallows.— Amer. Mus. Novit. 1529: 1-47.
Vaurie, C., 1952. A review of the bird genus *Rhinomyias* (Muscicapini).— Amer. Mus. Novit. 1570: 1-36.
Vaurie, C., 1957. Systematic notes on Palearctic birds. No. 25. Motacillidae: the genus *Motacilla*.— Amer. Mus. Novit. 1832: 1-16.
Vaurie, C., 1958. Remarks on some Corvidae of Indo-Malaya and the Australian region.— Amer. Mus. Novit. 1915: 1-13.
Vaurie, C., 1959. The birds of the Palearctic fauna. Passeriformes. Witherby, London: xii + 762 p.
Vaurie, C., 1962. Family Dicruridae. In E. Mayr & J.C. Greenway (eds.), Check-list of birds of the world 15: 137-157.
Vaurie, C., 1965. The birds of the Palearctic fauna. Non-Passeriformes. Witherby, London: i-xx, 1-763.
Vaurie, C. & D. Amadon, 1962. Notes on the honey buzzards of eastern Asia.— Amer. Mus. Novit. 2111: 1-11.
Verheijen, J.A.J., 1956 (1957?). Een ral repareert haar ei.— Limosa 29: 149-150.
Verheijen, J.A.J., 1961. Some notes on the birds of the island of Paluë, Flores, observed from 13th April to 5th May 1960.— Ardea 49: 183-187.
Verheijen, J.A.J., 1963. Bird-names in Manggarai, Flores, Indonesia.— Anthropos 58: 677-718.
Verheijen, J.A.J., 1964. Breeding season on the island of Flores, Indonesia.— Ardea 52: 194-201.
Verheijen, J.A.J., 1967. Kamus Manggarai I. Manggarai-Indonesia. Martinus Nijhoff, 's-Gravenhage: xxviii + 772 p.
Verheijen, J.A.J., 1971. Red-necked Phalarope *Phalaropus lobatus* in the island of Flores, Indonesia.— Ardea 59: 64.
Verheijen, J.A.J., 1976. Some data on the avifauna of the island of Roti, Lesser Sunda Islands, Indonesia.— Zool. Meded. 50: 1-21.
Verhoeye, J. & D.A. Holmes, 1999. The birds of the islands of Flores – A review.— Kukila 10: 3-59.
Verhoeye, J. & B. King, 1990. Notes on three raptor species new to Flores.— Kukila 5: 65-68.
Vigors, N.A. & T. Horsfield, 1827. A description of the Australian birds in the collection of the Linnean Society; with an attempt at arranging them according to their natural affinities.— Trans Linn. Soc. London 15: 170-331.
Violani, C., 1979. Uccelli di Honolulu raccolti da Luigi Maria d'Albertis.— Ann. Mus. Civ. Genova 82; 172-183.

Voous, K.H., 1948. Notes on a collection of Javanese birds.— Limosa 21: 85-100.
Voous, K.H., 1950. The races of the Yellow Wagtail (*Motacilla flava*) in the Indo-Australian Archipelago.— Treubia 20: 647-656.
Voous, K.H., 1967. Australian Pelican recorded in Indonesia.— Emu 67: 124.
Voous, K.H., 1995. In de ban van vogels. Scheffers, Utrecht: 605 p.
Voous, K.H. & J.G. van Marle, 1949. The distributional history of *Coracina* in the Indo-Australian archipelago.— Bijdr. Dierk. 28: 513-529.
Vorderman, A.G., 1888. Het journaal van Albert Colfs. Batavia.
Vorderman, A.G., 1895a. Bijdrage tot de kennis der avifauna van het eiland Noordwachter (Java Zee).— Nat. Tijdschr. Ned.-Ind. 54: 317-326.
Vorderman, A. G., 1895b. Lombok-vogels.— Nat. Tijdschr. Ned.-Ind. 54: 327-353.
Vos, J. de, P.Y. Sondaar, G.D. van den Bergh & F. Aziz, 1994. The *Homo* bearing deposits of Java and its ecological context.— Courier Forschungs-Institut Senckenberg 171: 129-140.
Wakefield, N.A., 1958. Erroneous or doubtful records of birds from Gippsland, Victoria.— Emu 58: 271-276.
Walden, A., 1872. A list of the birds known to inhabit the island of Celebes.— Trans. Zool. Soc. Lond. 8: 23-108, pl. III-X.
Wallace, A.R., 1864. A list of the birds inhabiting the islands of Timor, Flores and Lombock, with descriptions of the new species.— Proc. Zool. Soc. Lond. (1863): 480-497, pl. XXXIX.
Wallace, A.R., 1869. The Malay Archipelago. London. I: xxiv + 478 p., II: 524 p.
Warner, D.W., 1951. A new race of the cuckoo, *Chalcites lucidus*, from the New Hebrides Islands.— Auk 68: 106-107.
Warren, R.L.M., 1966. Type-specimens of birds in the British Museum (Natural History). Vol. 1. Non-passerines. London: ix + 320 p.
Warren, R.L.M. & C.J.O. Harrison, 1971. Type-specimens of birds in the British Museum (Natural History) 2: Passerines. London: vi + 628 p.
Watling, D., 1982. Birds of Fiji, Tonga and Samoa. Millwood Press, Wellington, New Zealand: 176 p.
Watson, G.E. & E. Mayr, 1986. Family Monarchidae. Subfamily Rhipidurinae. In: E. Mayr & G.W. Cottrell (eds.): Check-list of birds of the world 11: 530-556.
Watson, G.E., M.A. Traylor & E. Mayr, 1986a. Family Sylviidae. In E. Mayr & G.W. Cottrell (eds.): Check-list of birds of the world 11: 3-294.
Watson, G.E., M.A. Traylor & E. Mayr, 1986b. Family Monarchidae, Subfamily Monarchinae. In E. Mayr & G.W. Cottrell (eds.): Check-list of birds of the world 11: 464-526.
Wattel, J., 1973. Geographical variation in the genus *Accipiter*. Publ. Nuttall Orn. Club 13: vi + 231 p.
Weber, M., 1890. Zoologische Ergebnisse einer Reise in Niederländisch Ost-Indien I. Einleitung: i-xi.
Wells, D.R., 1999. The birds of the Thai-Malay Peninsula, 1: Non-Passeres. Academic Press, San Diego, etc.: liii + 648 p.
Wells, D.R. & Lord Medway, 1976. Taxonomic and faunistic notes on birds of the Malay Peninsula.— Bull. Brit. Orn. Cl. 96: 20-34.
White, C.M.N., 1936. Note on the Australian tree-martin (*Petrochelidon nigricans*).— Bull. Brit. Orn. Cl. 56: 90-92.
White, C.M.N., 1963. A revised check list of African flycatchers, tits, tree creepers, sunbirds, white-eyes, honey eaters, buntings, finches, weavers and waxbills. Lusaka: vi + 218 p.
White, C.M.N., 1973a. Migrant *Pernis apivorus* in the Indonesian Archipelago.— Bull. Brit. Orn. Cl. 93: 116.
White, C.M.N., 1973b. Night herons in Wallacea.— Bull. Brit. Orn. Cl. 93: 175-176.
White, C.M.N., 1974. Three water birds of Wallacea.— Bull. Brit. Orn. Cl. 94: 9-11.
White, C.M.N., 1975a. Migration of Palaearctic waders in Wallacea.— Emu 75: 37-39.
White, C.M.N., 1975b. Further notes on birds of Wallacea.— Bull. Brit. Orn. Cl. 95: 106-109.
White, C.M.N., 1976a. Migration of Palaearctic non-passerine birds in Wallacea.— Emu 76: 79-82.
White, C.M.N., 1976b. Comments on the Dusky Moorhen *Gallinula tenebrosa*.— Bull. Brit. Orn. Cl. 96: 125-128.
White, C.M.N., 1977. Notes on some non-passerine birds of Wallacea.— Bull. Brit. Orn. Cl. 97: 99-103.

White, C.M.N. & M. D. Bruce, 1986. The birds of Wallacea. B.O.U. Check-list No. 7: 524 p.
Whittell, H.M., 1954. The literature of Australian birds. Paterson Brokensha, Perth: xi + 116 + 788 p.
Widodo, W., J. H. Cox & P. C. Rasmussen, 1999. Rediscovery of the Flores Scops-owl *Otus alfredi* on Flores, Indonesia and reaffirmation of its specific status.— Forktail 15: 15-23.
Wiegant, W. & B. van Helvoort, 1987. First sighting of *Tachybaptus novaehollandiae* on Bali.— Kukila 3: 50-51.
Wurmb, F. von, 1781. De nacht-uil van 't eiland Java.— Verh. Bat. Gen. 3: 371-375.
Wynne, O.E., 1969. Bibliographical key-names of birds of the world, to authors and those commemorated: iii + 246 p.
Ziswiler, V., H.R. Güttinger & H. Bregulla, 1972. Monographie der Gattung *Erythrura* Swainson, 1837 (Aves, Passeres, Estrildidae).— Bonner Zool. Monogr. 2: 1-158.

13. Systematic index

The meaning of the letters given under the heading 'status' is as follows: M = marine: tropical sea-bird, which may breed in the region; N = migrant (winter-visitor) from the North; R = presumed resident; R* = resident, breeding recorded; S = migrant (winter-visitor) from the South.

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Figs 11-18 on pp. 254-260 show eggs at approximately natural size of Flores birds in the Leiden Museum.

Fig. 12. – a, *Accipiter novaehollandiae sylvestris*, RMNH 70070, c/2; b, *A. fasciatus wallacii*, RMNH 70066, c/2; c, *Spizaetus (cirrhatus) floris*, RMNH 70075, c/1; d, *Falco moluccensis*, RMNH 70096, c/4.

Fig. 13. – a, *Falco moluccensis*, RMNH 70099, c/3; b, *F. longipennis hanieli*, RMNH 70097, c/1; c, *Rallus pectoralis exsul*, RMNH 70315, c/3; cc, do., RMNH 70316, c/3; d, *R. philippinensis wilkinsoni*, RMNH 70350, c/6; e, *Porzana c. cinerea*, RMNH 70325, c/4; f, *Trichoglossus (haematodes) weberi*, RMNH 70578, c/2; g, *Cacatua sulphurea occidentalis*, RMNH 70573, c/1; gg, do., RMNH 70575, c/1; ggg, do., RMNH 70576, c/1.

Fig. 14. – a, *Otus magicus albiventris*, RMNH 70606, c/2; b, *O. silvicola*, RMNH 70610, c/2; c, *Halcyon c. chloris*, RMNH 70637, c/4; d, *H. fulgida*, RMNH 70644, c/2; e, *Pitta elegans concinna*, RMNH 70683, c/3.

Fig. 15. – a, *Coracina novaehollandiae floris*, RMNH 70756, c/2; aa, do., RMNH 70755, c/2; b, *Lalage s. sueurii*, RMNH 70759, c/3; c, *Zoothera dohertyi*, RMNH 70762, c/1; d, *Z. andromedae*, RMNH 70769, c/2; e, *Tesia e. everetti*, RMNH 70886, c/2; f, *Cisticola exilis lineocapilla*, RMNH 70970, c/4; g, *Orthotomus cucullatus everetti*, RMNH 375a (field number), c/3; h, *Culicicapa ceylonensis sejuncta*, RMNH 71098, c/1; i, *Monarcha c. cinerascens*, RMNH 71115, c/1; j, *Terpsiphone paradisi floris*, RMNH 71145, c/2.

Fig. 16. – a, *Pachycephala f. fulvotincta*, RMNH 71155, c/2; aa, do., RMNH 71165, c/2; b, *Dicaeum annae*, RMNH 71210, c/2; c, *Anthreptes malaccensis convergens*, RMNH 71339, c/2; d, *Nectarinia jugularis ornata*, RMNH 71291, c/2; dd, do., RMNH 71289, c/2; e, *N. s. solaris*, RMNH 71319, c/2; ee, do., RMNH 71326, c/2; f, *Zosterops palpebrosa unica*, RMNH 71455, c/2; g, *Z. wallacei*, RMNH 71526, c/2; h, *Lophozosterops dohertyi subcristata*, RMNH 71608, c/2; i, *Heleia crassirostris*, RMNH 71642, c/3.

Fig. 17. – a, *Philemon buceroides neglectus*, RMNH 71691, c/3; b, *Aplonis m. minor*, RMNH 71763, c/3; c, *Gracula religiosa venerata*, RMNH 71774, c/2; d, *Oriolus chinensis broderipi*, RMNH 71782, c/2; e, *Dicrurus hottentotus bimaensis*, RMNH 71789, c/4; ee, do., RMNH 71800, c/4.
Fig. 18. – a, *Corvus florensis*, RMNH 71816, c/3; b, *C. macrorhynchus*, RMNH 71814, c/4.

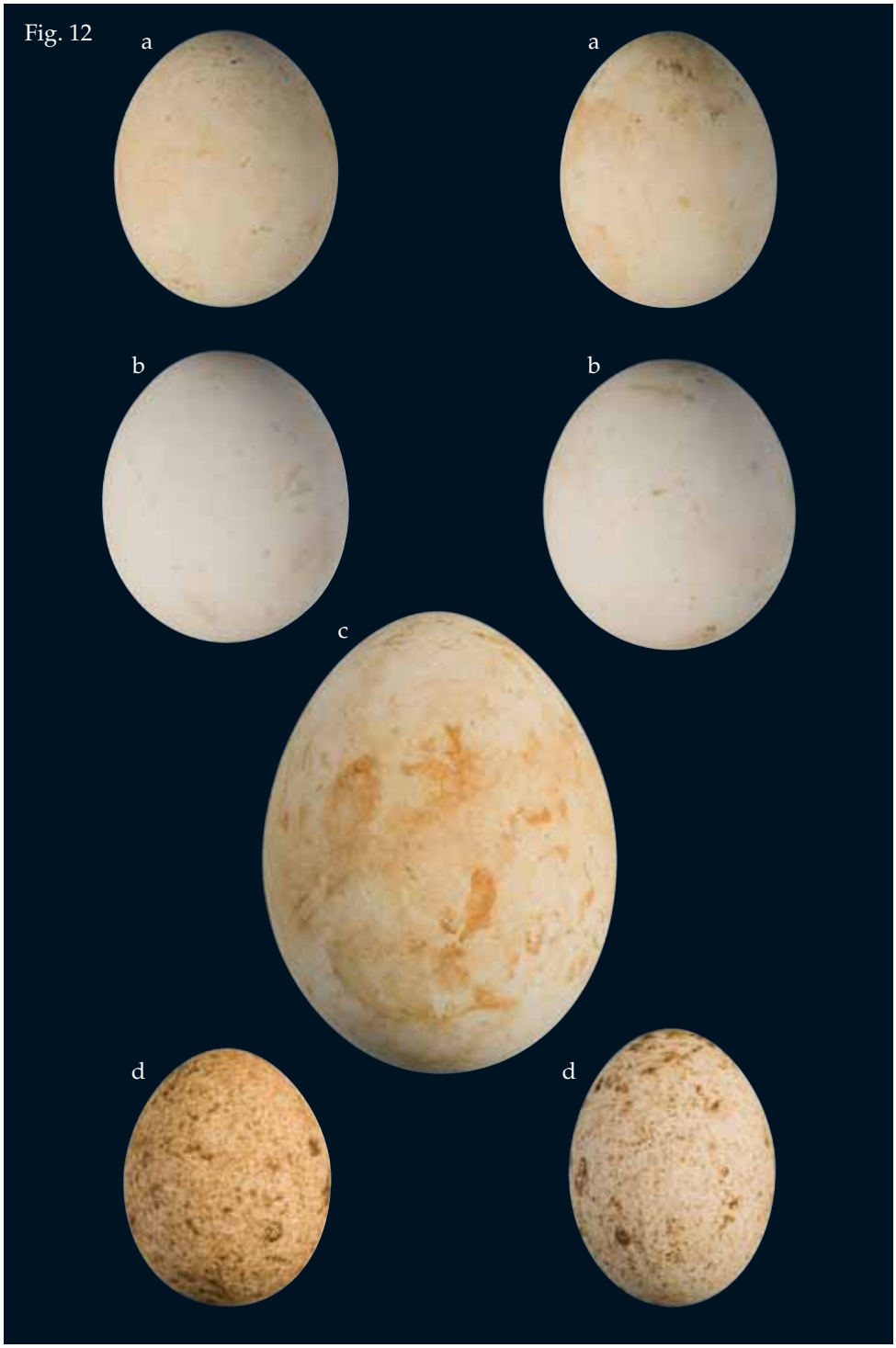
Fig. 12
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Fig. 13
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ggg

Fig. 14

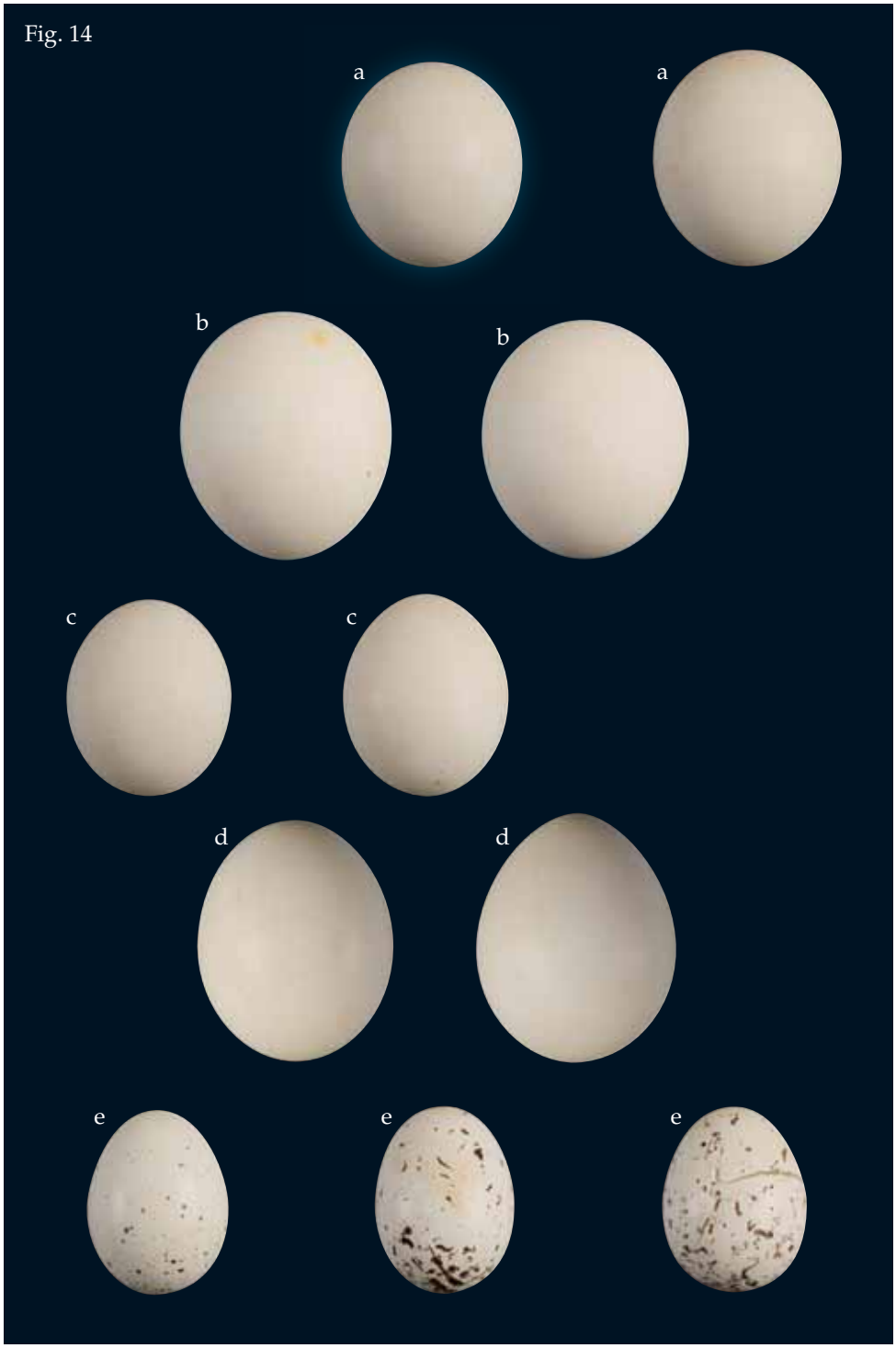


Fig. 15
a
a
b
b
b
b
b
c
d
d
e
e
f
f
f
g
g
g
h
i
j
j

Fig. 16

Fig. 17

Fig. 18