A LIST OF THE BIRDS RECORDED FROM BANGKA ISLAND, INDONESIA

by

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An enumeration of bird specimens from Bangka present in museum-collections, has resulted in a faunal list of 172 species (176 forms). A discussion is given of the zoogeography of the island, the avifauna of which is mainly Sumatran in its affinities, but with a distinct Bornean influence. In contradistinction to a previously-published opinion (de Schauensee, 1958), there is no recognizable Javanese element in the avifauna.

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INTRODUCTION

The island of Bangka or Banka, off south-eastern Sumatra, has been neglected by ornithological collectors. The reason for this neglect is obvious: the island forms only a continuation of the eastern Sumatran lowlands, of which it formed part until the end of the last period of low sea-level, less than 15,000 years ago. The island lacks high mountains or other geographical features of the kind that attract ornithological collectors in their search for novelties.

Therefore it is perhaps not surprising that the first attempt to compile a complete list of the birds of Bangka was made less than thirty years ago (de Schauensee, 1958), although it must be said that Chasen (1935b) included the island as a separate unit in his excellent list of Malaysian birds, so that from his work a faunal list can be constructed. Chasen listed 109 species, a number that was increased to 126 by de Schauensee. De Schauensee also presented a short historical review of ornithological exploration of the island: although, as mentioned above, ornithological collectors have neglected it, nevertheless, ornithologists and, more frequently, interested amateurs have, more by accident than by design from the ornithological viewpoint, worked there from time to time, and have accumulated a larger body of material and knowledge than is visible from the literature.

Almost from the moment of its publication, I became aware that de Schauensee's paper is not at all a comprehensive collation of extant knowledge. The fact that he has made no attempt to make enquiries in Leiden is perhaps understandable, but it is a pity that he failed to include material in the U. S. National Museum, Washington, D. C., the existence of which was known to him, as this would have made his paper much more complete. More serious is that de Schauensee has included a number of species which I am convinced do not occur on Bangka. This will be dealt with in a later section. The need to put the record straight before these erroneous records become entrenched in literature, has been my main incentive in writing the present paper. The matter is now urgent, as an authoritative list of the birds of Sumatra (which will include its surrounding islands) is in an advanced state of preparation, and is to be published in the series of BOU check-lists.

This paper ought to have been written a century ago, or at the very last 75 years ago. I realize that it is thoroughly old-fashioned, but nevertheless no apology is needed for its publication: the study of any avifauna needs a basis and in the case of Bangka such a basis has hitherto been manifestly lacking. Therefore I consider it, even now, useful to provide one, and seen in this light it is perhaps no disadvantage that all collections from Bangka were brought together over a comparatively short period (1859-1905), as renewed investigations may show up changes that have taken place in the intervening years.

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Biographical particulars were moreover received from: Gemeente Archief Driebergen-Rijsenburg; Centraal Bureau voor Genealogie ('s-Gravenhage); Kanselarij der Nederlandse Orden ('s-Gravenhage).

TOPOGRAPHY

The island of Bangka, situated roughly between 1°10′ and 3°10′S, 105°10′ and 106°50′E, is more or less dumbbell-shaped, with its longest axis directed NW-SE. The total surface of the island is 11,340 km^2, its greatest length, along the axis just mentioned, is 245 km, its greatest width in the northern part is ca. 130 km, in the southern part ca. 70 km, whereas across the narrowest part of its waist, it is no more than 35 to 40 km. The north coast is deeply indented by the shallow Klabat Bay, which penetrates almost 40 km inland. Bangka is separated from Sumatra by the shallow Strait Bangka, which at its narrowest point is no more than 14 km wide and less than 20 m deep. To the east, the somewhat smaller island of Billiton (4595 km^2) is almost exactly 100 km away, but this distance is decreased by several smaller islands, the major ones of which (P. Lepar, Liat, Mendanau) reduce it to several water gaps, the largest one of which is no more than 30 km wide and moreover is spotted with very small islands.

The main part of Bangka consists of undulating hills, in several places rising to low granite mountains, the most important of which are Menoembing near Muntok (448 m), the Mangol or Mangkol Mountains (398 m), Permisan (457 m), Pading/Bebuluh (654 m), and the highest peak, Maras (692 m). Swampy areas are mainly found in the south-western part of the island.

Especially off the south-east coast, there is a large number of satellite islands of assorted sizes. The largest are Lepar (207 km^2) and Poengoh or Liat (50 km^2).

Geologically, Bangka as well as Billiton and the Riouw and Lingga Archipelagoes, are quite different from the adjacent parts of Sumatra: apparently mainly Trias (Rutten, 1927), whereas the eastern Sumatran lowlands are entirely Quaternary. Therefore Parrot (1907: 152) had some reason to refer to

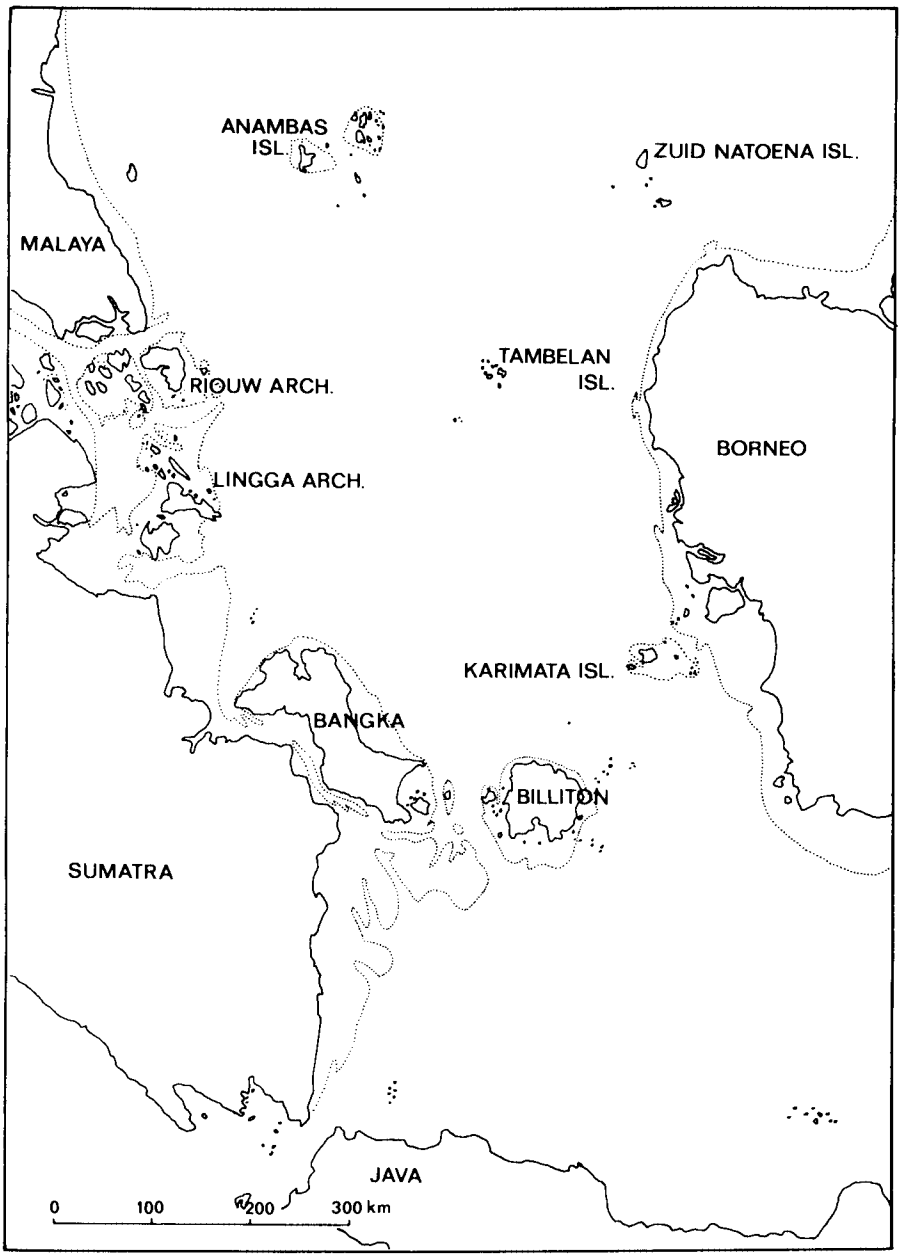

Fig. 1. — The position of Bangka is relation to the surrounding islands. The dotted line indicates the 20 m isobath.

Bangka (and Billiton) as: "ein Relikt aus uralter Zeit". The geological structure of a country would only indirectly influence the composition of its avifauna, through its vegetation. Although the time factor would have allowed the development of endemism on Bangka and Billiton, their proximity to Sumatra and Borneo and their position on the Sunda Shelf has evidently prevented this.

The rainfall averages about 3000 mm a year, with a peak in December/January and a minimum in the period July/September. The natural vegetation under such conditions would be tropical rain forest but the extent of human activities has been such that little original vegetation remains and even those parts of the island that are not directly cultivated are covered with secondary vegetation.

In 1905, the year of Hagen's visit which terminated the ornithological exploration of the island, the human population was 115,000. In other words, the population density was a very moderate one of a trifle over 10 souls per km^2. In 1956 the population was recorded as 205,363, and in 1968 as ca. 223,000.

Zoogeographically important is the fact that, in spite of the proximity of Bangka to Sumatra, the distance separating the mountains or hills of Bangka from the higher ground of Sumatra, is actually greater than the distance separating them from the higher ground of Billiton, or even than the distance separating the latter from the hilly country of south-western Borneo. This may explain the presence of several Bornean subspecies on Bangka.

ORNITHOLOGICAL HISTORY

The first ornithologist to visit Bangka was Pierre Diard (1795-1863), who in April 1825 accompanied a Mr. van Sevenhoven on a tour of inspection of the tin mines. He is supposed to have collected birds, and to have sent these to Paris (cf. Finsch, 1906: 303-304; de Schauensee, 1958: 280). As his collections would have been the first ever made on Bangka and therefore would, if nothing else, at least be of historical interest, I asked Dr. Jouanin to see whether any of his material was still present in the Muséum National. From the reply received (dated 29.IV.1968), I quote:

"En ce qui concerne Diard, je n'ai pas trouvé dans les anciens registres mention d'oiseaux provenant de Banka. En août 1826, le laboratoire a reçu un lot d'oiseaux de Diard indiqué comme venant de 'Java'. Il n'y a pas d'origine plus précise indiquée . . . mais cela veut évidemment pas dire que dans le lot il n'y ait pas eu des spécimens de Banka, car si Diard a fait une

excursion à Banka, il a très bien pu ultérieurement faire l'envoi de ses récoltes depuis Java".

In other words, if Diard has mailed any ornithological material collected on Bangka to Paris, it is no longer recognizable, as apparently it was not labelled.

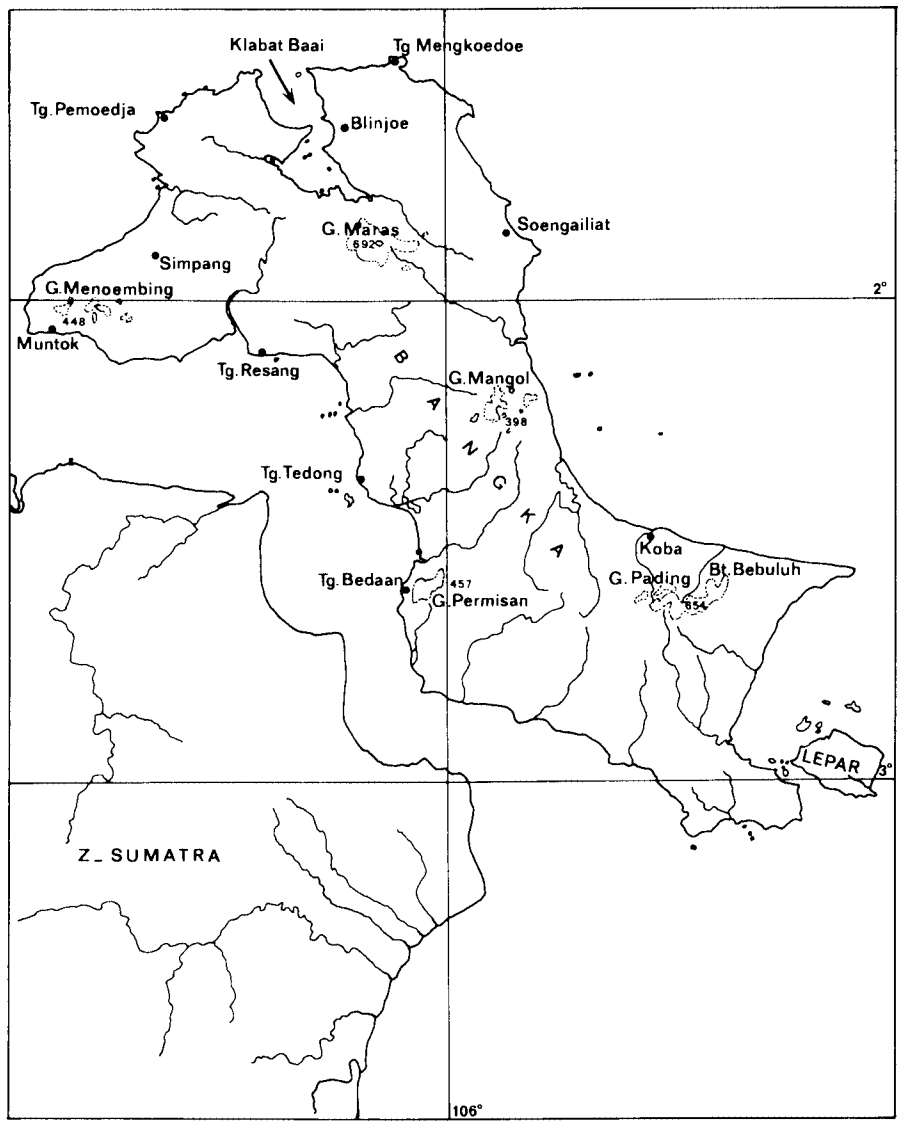

Fig. 2. — Map of Bangka, showing the localities mentioned in the text.

There has never been any mention of material from Bangka forwarded by Diard to Leiden, and therefore I want to draw attention to a list I found in the archives of the Rijksmuseum van Natuurlijke Historie (Appendix 1). The list is obviously a copy made by a clerk without ornithological knowledge, so that many misspellings occur. I have corrected a number of these without making changes that would affect the names. The list does not make clear whether the enumerated specimens were sent to Leiden, although one would expect so: why else would it have been made? However, a check in our collection did not reveal any of the specimens listed as present. Moreover, the list is, as an early document of the bird-life of Bangka, utterly unreliable; it does perhaps suggest, but does not even prove, that Diard has collected birds on Bangka. It is a pity, but as a contributor to ornithological knowledge of Bangka, Diard has to be completely dismissed.

The belief that Diard has collected birds on Bangka is probably derived from a letter by Temminck to the Minister of Public Education, Industry and Colonies, quoted by Veth (1879: 59), according to which Diard would have: " . . . aan het Fransch Gouvernement eene zeer aanzienlijke verzameling voorwerpen uit alle vakken van natuurlijke historie overgezonden, waarbij zich waarschijnlijk vele zullen bevinden verzameld op zijne tochten naar Banka, waarvan de voortbrengselen nu het eerst door de Fransche geleerden kunnen worden uitgegeven . . .". If I read this correctly, it was no more than surmise that Diard had collected anything on Bangka. The activity of foreign naturalists in the Dutch colonies was used by Temminck as a lever to obtain government support for his own plans, so that he had reason to exaggerate their accomplishments.

The elimination of Diard leaves J. F. R. S. van den Bossche (1819-1889), at the time Resident of Bangka, as the first person to be ornithologically active on the island. In our annual report for 1860/1861, Schlegel lists 250 bird skins as having been received from this source, besides other zoological material, but in the register of acquisitions, the number is given as 237. In the annual report for 1861/1862, the receipt of another 80 skins is acknowledged. In a letter dated 21.II.1861, v. d. Bossche recorded that the material dispatched in July 1860 (the first consignment, of 250 specimens), had been collected by his hunter during the preceding 14-odd months, hence roughly in the period May 1859/July 1860.

Van den Bossche had these collections made at his own expense, by a native hunter, and generously presented them to the Museum. They were certainly welcome additions to the collections, but in one of his letters Schlegel wrote: "Ik betreur het dat bij de vogels niet is aangegeven de sexe, benevens de dag

waarop zij werden geschoten of gevangen", in other words, it looks as if the specimens were not individually labelled. From the correspondence it is clear that the majority would have been obtained near Muntok where v. d. Bossche lived.

Schlegel has described a few new forms from v. d. Bossche's collection and other specimens are listed in the various volumes of the series "Muséum d'Histoire Naturelle des Pays-Bas", but as a whole it has never been reported on, a fact on which Finsch (1906: 304 footnote 1) has unfavourably commented. Finsch's statement, made in the same place, that previously v. d. Bossche had presented interesting bird collections from the Gold Coast, is unsupported by material in our collection or by documentary evidence and is probably due to confusion with v. d. Bossche's successor as Governor of the Gold Coast, C. J. M. Nagtglas. V. d. Bossche's stay on the Gold Coast was so short, that he would hardly have been able to organize much in the way of collecting. For biographical particulars on v. d. Bossche, see Appendix 2.

J. A. Buddingh' (1840-1870) was an interpreter for the Chinese language, employed at the government tin mines, which were worked by Chinese coolies. The annual report of our Museum for 1865/1866 acknowledges the receipt of a few zoological objects from him, unspecified, but these included several birds still present in our collection. For biographical particulars on Buddingh', see Appendix 2.

The botanist J. E. Teysmann (1808-1882), on his many travels, has collected valuable ornithological material, notably in Celebes and the Moluccas. His first visit to Bangka took place from 14 April to 14 May 1857 (cf. Teysmann, 1859), but there is no evidence that on this occasion birds were collected. His subsequent visits lasted from 27 June 1869 to 27 January 1870, from 7 August 1870 to 1 April 1871, from 14 May to 25 June 1872, and from 19 (?) November to 5 December 1872 (cf. Teysmann, 1871, 1873, 1874). It is no longer possible to ascertain how much ornithological material was collected during these prolonged sojourns. Only a limited number of specimens from this source can be traced in our collection. There are also a few specimens in the Zoölogisch Museum, Amsterdam. De Schauensee (1958: 280) refers to material in Buitenzorg, but the Buitenzorg Museum (Museum Zoologicum Bogoriense) did not yet exist at that time and information received from Dr. Somadikarta (in litt., XII. 1981) is that the Museum Zoologicum does not hold any bird material from Bangka.

Schlegel mentions in one of his annual reports that Teysmann's collections could have been much more valuable if he had been instructed to label his

specimens properly (sex, date, locality) instead of merely with a little tag giving the island of provenance and nothing else (cf. Gijzen, 1938: 147). Even that rudimentary labelling appears not always to have been done with care and has caused a lot of confusion, especially in cases where on a single tour he visited several different localities (South Celebes and Saleyer for example).

Teysmann was a good observer and the narratives of his journeys are well worth reading. His report on the 1869/1870 visit contains some ornithological matter. Apart from his description of caves inhabited by *Collocalia* which will be fully quoted in a later section of this paper (p. 154), he mentions *Palaeornis pondicerianus* (= *Psittacula longicauda*), *Loriculus vernalis* (= *Loriculus galgulus*), *Gracula religiosa*, *Columba javanica* (= *Chalcophaps indica*), *Columba aenea* (= *Ducula aenea*), and *Columba littoralis* (= *Ducula bicolor*).

J. H. G. Vosmaer (1830-1885), Administrator of the tin mines at Blinjoe, forwarded as a donation 188 bird skins, 7 mammal skins and 12 bottles with reptiles in spirits (Annual Report 1873/1874). Schlegel wrote about this collection: "De waarde van deze zo geheel belangeloos ten geschenke afgestane verzameling wordt nog verhoogd door de omstandigheid dat zich onder de voorwerpen zeer zeldzame bevinden terwijl de Heer Vosmaer tevens heeft gezorgd, dat elk voorwerp van eene étikette is voorzien waarop aanteekening is gesteld van de plaats waar en de dag waarop het dier werd verkregen . . .". Schlegel was well aware of the importance of proper labelling, as the above quotation proves. Most specimens of this important collection have been mounted and it almost makes one cry that all the original labels have been thrown away. Fortunately, the indications of sex and date have usually been copied on the socles of the specimens. Inclusion of exact localities was, however, not regarded as important, and all these specimens are now merely labelled "Banka". It may be assumed that the majority stems from near and about Blinjoe. The collection was mailed, in three cases, in September 1873, and arrived in Leiden on 22 January 1874. For biographical particulars on Vosmaer, see Appendix 2.

In 1897, the well-known physician and ornithologist Dr. A. G. Vorderman (1844-1902) visited Bangka. In November, a day before his departure, he purchased at Muntok a live individual of *Lophura ignita* that had been snared in the interior of the island. He took the bird with him to Batavia, but after about a month it died. Vorderman (1898) has published a detailed description of this bird. I have found no evidence that any other birds were obtained during Vorderman's visit, which may have been quite short.

The collector J. Z. Kannegieter (1862-1899), in the employ of the entomologist J. A. H. Neervoort van de Poll (1862-1925), stayed on Bangka from 13 April to 11 July 1898. He made his headquarters at Soengailiat. De Schauensee (1958) has listed 60 specimens in 34 species as having been collected by him, but the actual number would be less than half that figure, after the subtraction of mislabelled specimens from Java (see the next section). For biographical particulars on Kannegieter, see Appendix 2.

Dr. W. L. Abbott (1860-1936) accompanied by C. B. Kloss (1877-1949) collected on Bangka in 1904. Their itinerary can be reconstructed from the register of acquisitions of the U. S. National Museum: Tanjong Rengsam or Resang (20-29 May), Tanjong Tedong (1-5 June), Tanjong Bedaan (6-12 June), Bukit Permisan (10, 11, 15 June), Tanjong Pamuja or Pemoedja (18-21 June), Klabat Bay (22-28 June, 1 July), Tanjong Meng Kudu or Mengkoedoe (3-4 July). The collection amounted to 143 specimens in 73 species. Oberholser and Riley have described several supposedly new subspecies from it, but as a whole it has never been reported on.

From the beginning of May until the middle of June 1905, Dr. B. Hagen (1853-1919) collected around Simpang. The material, consisting of 60 species, was sent to Munich, where Parrot (1907) included it in an important paper on the Munich collections from Sumatra and its surrounding islands. Hagen, as far as I am aware, closes the short list of ornithological collectors who have worked on Bangka, but one other person deserves mention here.

The ship's surgeon P. Buitendijk (1870-1932) used to preserve the birds that had flown on board of his ship. On his many travels he must have passed repeatedly through Strait Bangka, and his collections contain three specimens from there. Buitendijk would hardly have qualified for inclusion in this list of collectors, were it not for the fact that two of the three birds he obtained belong to species not otherwise known from Bangka, and the third adds a subspecies to the avifauna of the island.

Summary of collections made on Bangka:

	number received	still present
Diard (1825)	p. m.	
v. d. Bossche (1859-1861)	330 (or 317)	215
Buddingh' (1865-1866)		17
Teysmann (1869-1872)		49 + 4
Vosmaer (1872-1873)	188	171
Kannegieter (1898)	at least	20
Abbott & Kloss (1904)	143	143
Hagen (1905)	149	140*)
Buitendijk (1904, 1924)		3
		762

Leiden	455 (and one skull)
Washington	143
München (Munich)	140
Philadelphia	ca. 30
Amsterdam	4

The enumeration given above shows that of the specimens sent by v. d. Bossche no less than 115 (or 102) are now missing, of the specimens sent by Vosmaer 17 (or 16 if the skull of *Leptoptilos javanicus* was included in the original count), of the material forwarded by Hagen 9. Most of the missing material will undoubtedly have been given out in exchange, and some of it may still be traceable. To try and trace every single specimen would, however, not be worth the effort. Therefore I restrict myself to saying that a superficial look in our old exchange books revealed that as early as 11 March 1863, sixteen specimens from Bangka were included in a consignment of 191 bird skins sent in exchange to R. Swinhoe. In the same period, specimens were sent to Prince Maximilian von Wied, and to the Berlin and Vienna Museums. In 1898 a specimen of *Copsychus malabaricus* (leg. v. d. Bossche) was forwarded to D'Arcy W. Thompson, Dundee, Scotland, and in 1899 a specimen of the same species (leg. Vosmaer) went to the Public Museum, Wanganui, New Zealand. In 1888 a specimen of *Dryocopus javensis* ♀ (collector not recorded in the register) was sent to the British Museum (Natural History), London. I do not know what happened to this bird as it is not listed in the Catalogue of Birds

*) De Schauensee (1958: 280) says that Hagen collected 152 specimens; I count 149.

(Hargitt, 1890), although Bangka is expressly included in the range as given there (l. c.: 499) and I known of no published source from which this information could have been taken.

During a visit to Munich in March 1982, I was unable to find nine of the birds listed by Parrot (1907). Except in the case of one specimen, for which there was a note saying that it has been put on display, it is not clear what has happened to the missing birds. There is no information on the subject in the archives at Munich (Reichholf, in litt., 18.VIII.1982). Expecting that some of the specimens might have been sent to Berlin, I enquired with Dr. Mauersberger, but his reply is also negative (in litt., 22.XI.1982).

KANNEGIETER'S COLLECTION

De Schauensee (1958: 281) mentioned that from Kannegieter's collection he could record 15 species of birds as new for Bangka, two of which he described as new subspecies. Two additional records were based on his own observations, made when in 1932 he passed through Strait Bangka by ship (*Fregata andrewsi* and *Sterna fuscata*), making a total of 17 presumed additions to the avifauna of the island. However, one of the species collected by Kannegieter, which de Schauensee believed made a new record, *Eurylaimus javanicus,* had in fact been recorded previously, leaving 14 species. A peculiar and unexpected point in this collection is that a majority of these 14 species show an affinity to Java rather than to Sumatra; indeed, of the 14 species, no less than 11 are not known from Sumatra.

	Not Sumatra
Megalaima haemacephala rosea	x
Dendrocopos m. moluccensis	
Pitta guajana bangkae n. subsp.	x
Mirafra j. javanica	x
Lalage n. nigra	
Pericrocotus cinnamomeus cf. *saturatus*	x
Criniger b. bres	x
Malacocincla sepiaria bangkae n. subsp.	x
Parus major	
Dicaeum t. trochileum	x
Sturnus contra jalla	x
Aethiopsar fuscus javanicus	x
Padda oryzivora	x
Lonchura leucogastroides	x

With a cross I have indicated in this list the species which either do not occur at all in Sumatra, or of which, even more surprisingly, the subspecies reported from Bangka is closer to that of Java than to that of Sumatra.

Previous to de Schauensee's publication, the occurrence of a distinctive Javanese element in the avifauna of Bangka was entirely unknown and also on general geographical grounds was not expected. Very peculiar, seen in the light of the fact that Kannegieter is known to have collected in the neighbourhood of Batavia (now Djakarta) and elsewhere in West Java, is the fact that the 14 species listed above are just about the most common species of the cultivated land around that town. Note that de Schauensee refers to several specimens as having been collected in Omstreken, Java, but Omstreken by itself is not a place name, but is the Dutch word for Surroundings so that the word Omstreken not followed by a place name is meaningless. Dr. Gill has checked the labels of these specimens, and has informed me that actually they read: Omstreken Batavia. All this gave me a strong suspicion that part of Kannegieter's material supposedly from Bangka was mislabelled and originates from the surroundings of Batavia (or perhaps elsewhere in West Java). Further evidence I found in de Schauensee's paper under *Arachnothera longirostra:* Java and Sumatra have well-differentiated subspecies. The four specimens from Bangka are listed under the formula *longirostris* > *prillwitzi,* suggesting that they would be intermediate between these two subspecies, but in the discussion it is stated that: "Of the above specimens two, in having deep yellow underparts and long bills (42, 44 mm.), are inseparable from *prillwitzi* of Java, while the other two are entirely typical of *longirostris* in their lemon-yellow underparts and smaller bills (35, 37 mm.)". In other words, these birds are not intermediate, and the logical inference is that the first two specimens are from Java and only the other two have actually been taken on Bangka. Vosmaer obtained specimens of *Pericrocotus cinnamomeus igneus* on Bangka, a subspecies also known from Sumatra and Billiton, but the specimen of this same species collected by Kannegieter allegedly at Soengailiat was found to be close to the very different Javanese subspecies *P. c. saturatus.* De Schauensee suspected that it might represent a new subspecies characterized by deeper colours and a larger bill, compared with *saturatus,* but fortunately he refrained from naming it. I have examined this bird (ANSP no. 56455) and found it to fit well into a large series of *P. c. saturatus* from Java.

The subspecies *Pitta guajana bangkae* and *Malacocincla sepiaria bangkae* were described as much closer to birds from Java than to birds from Sumatra. The type-specimens have been compared by Dr. Gill with series of their respective species from Java and he has informed me (in litt., 20.XII.1982) that they

are very similar. The ventral barring of the *Pitta* specimen is less heavy than on birds from Java (as mentioned in de Schauensee's description), but there is a fair amount of individual variation in the degree of barring in females from Java, so that there is no reason to assume that the type of *P. g. bangkae* would be outside their range of variation.

I consider the examples given above as providing very strong evidence, but there is more. De Schauensee increased the number of 109 species for Bangka listed by Chasen, to 126 on the basis of Kannegieter's small collection consisting of only 60 specimens in 34 species. On the basis of material in Leiden and Washington I have been able, in this paper, to increase the number of species known from Bangka to over 170 (excluding de Schauensee's records), yet, amongst this considerably increased number only two of the Schauensee's 14 additions are included: *Dendrocopos moluccensis* and *Lalage nigra.* Significantly, these two species occur in both Java and Sumatra, in the same subspecies. In a few instances, where conspicuous species like *Sturnus contra* and *Padda oryzivora* are concerned, one might think of recent introductions from Java, as, indeed, de Schauensee has suggested for the last-mentioned species, but in this connexion it must be remembered that Kannegieter's collection is not a recent one; it was made in 1898, whereas Abbott, Kloss and Hagen collected on Bangka in 1904 and 1905. All this leaves me with the conclusion, about which I feel completely certain, that a part of Kannegieter's material was mislabelled and must be rejected.

On two previous occasions I have tried to prevent these erroneous records from slipping into the world literature. In my comment on the manuscript of the family Dicaeidae for Peters's Check-List of Birds of the World 12, I wrote to the editor (on 8.VIII.1966):

"Delete Bangka from the range of *D. t. trochileum.* I have strong suspicions that de Schauensee (Proc. Acad. Phila. 110, 1958) included mislabelled Java specimens in his collection from Bangka. I am working on a revised list of birds from the island, and it would be cautious to omit mention of Bangka".

As a result, the reference to de Schauensee, accompanying the locality Bangka in the original manuscript, was deleted, but the locality Banka itself was left in (cf. Salomonsen, 1967: 200).

The second case concerns *Pitta guajana bangkae,* about which I wrote as follows to the editor of volume 8 of the Check-List (on 10.II.1978):

"Ever since I received the paper in which this alleged subspecies was described, I have been convinced that de Schauensee has been a victim of mislabelling and that in fact a considerable part of the collection presumed to be from Bangka originated from 'Omstreken van Buitenzorg', West Java,

which in my opinion should be given as the corrected type locality of *bangkae.* It is a synonym of *affinis* of course. Over ten years ago in the MS Dicaeidae, I pointed out the same for *Dicaeum trochileum,* which was included with a reference to de Schauensee. Unfortunately the editors appear not to have understood me: they eliminated the ref. to de Schauensee, but retained the locality Bangka. If you want the full explanation I can supply it; if required I would be happy to take responsibility for an explanatory footnote".

Notwithstanding this, *Pitta guajana bangkae* appeared in the Check-List without comment as a subspecies endemic to Bangka (cf. Mayr, 1979: 315).

ZOOGEOGRAPHY

In spite of Bangka being no more than a piece of eastern Sumatran lowlands, that has only recently become separated from the main island by the shallow Strait Bangka, a number of new or supposedly new subspecies have been described from the island. The list of these is as follows:

Bubo orientalis minor Schlegel, 1862.
Noctua hirsuta minor Schlegel, 1873
Phaenicophaeus chlorophaeus bangkanus de Schauensee, 1958.
Pitta bangkana Schlegel, 1863.
Pitta megarhyncha Schlegel, 1863.
Aegithina tiphia micromelaena Oberholser, 1923.
Copsychus saularis nesiotes Oberholser, 1923.
Kittacincla malabarica abbotti Oberholser, 1923.
Drymocataphus capistratus nyctilampis Oberholser, 1922.
Anuropsis malaccensis docima Oberholser, 1922.
Erythrocichla bicolor bankana Riley, 1938.
Mixornis bornensis ruficoma Oberholser, 1922.
Macronus ptilosus minor Riley, 1937.
Cyanoderma erythroptera apega Oberholser, 1922.
Orthotomus atrogularis eumelas Oberholser, 1923.
Cyornis banyumas calocephala Oberholser, 1920.
Sitta frontalis hageni Parrot, 1907.
Cinnyris ornata heliozeteta Oberholser, 1923.

Of these 18 forms which have Bangka as type-locality, only the two pittas described by Schlegel are valid; *Pitta megarhyncha,* however, is a more widely-distributed species, now known to range coastally from East Bengal and Burma to Sumatra and Bangka (there is a doubtful record from Borneo). *Pitta*

sordida bangkana is, indeed, endemic to Bangka and Billiton; it is intermediate between the subspecies *cucullata* and *muelleri*. It is probably a more or less stabilized hybrid between the two subspecies mentioned and therefore could be of fairly recent origin. Just the same, it is an interesting element in the avifauna of Bangka.

In a few instances, when Sumatra and Borneo have different subspecies of the same species, it is the Bornean subspecies and not the Sumatran one which is found on Bangka (and Billiton):

Lophura ignita ignita
Phaenicophaeus curvirostris microrhinus
Harpactes diardii diardii
Lacedo pulchella melanops
Trichastoma malaccense poliogene
Pomatorhinus montanus bornensis
Macronous gularis bornensis
Macronous ptilosus reclusus

This should be compared with about 25 instances, where the Bangka subspecies differs from the Bornean one and agrees with that from Sumatra. One species of land bird, occurring on Bangka, is not known from Borneo; it is *Lonchura striata*. The same may be true for *Pitta megarhyncha,* as mentioned above.

Three species are a little larger on Bangka (and Billiton) than on Sumatra and Borneo:

Psittacula longicauda longicauda
Megalaima rafflesii
Picus puniceus observandus

In two of these species, the birds from Bangka agree with specimens from the Malay Peninsula. Therefore it is doubtful whether even this minor tendency towards larger size on Bangka is an example of incipient geographical variation. This leaves only *Psittacula longicauda* as a species which actually seems to have differentiated on Bangka and on the smaller islands between Malaya, Sumatra, and Borneo.

Although it has sometimes been claimed that Bangka (and Billiton) have forms intermediate between subspecies from Sumatra and Borneo, there is little evidence for this. In some instances, currently recognized subspecies from Sumatra and Borneo are so close, that an intermediate bird would fit into either (for example *Pomatorhinus montanus*). *Lophura ignita* is a special case, as the border between the subspecies is in eastern Sumatra. The other

six "Bornean" subspecies inhabiting Bangka are reasonably well-differentiated and they show no approach to the subspecies from Sumatra, which is at present so much nearer. How exactly the "Bornean influence" came about, remains a problem to be solved, but as I have mentioned in a preceding section, the fact that, through the connecting link of Billiton, the higher ground of Bangka is not farther from Borneo than from the higher ground of Sumatra, would certainly have been of influence. Even though five of the eight species are not (yet) known from Billiton.

The avifaunal affinity between Bangka and Billiton has always been recognized as being particularly close. A comprehensive treatment of the avifauna of Billiton is outside the scope of this paper, but for comparison it is of interest to mention that nine subspecies have been described from it as supposed endemics. These are:

Turnix suscitator kuiperi Chasen, 1937.
Phodilus badius parvus Chasen, 1937.
Strix leptogrammica chaseni Hoogerwerf & de Boer, 1947.
Chotorhea rafflesii billitonis Chasen, 1935.
Eurylaimus javanicus billitonis Kloss, 1931.
Pycnonotus plumosus billitonis Chasen, 1935.
Chloropsis cochinchinensis billitonis Chasen, 1937.
Malacocincla abbotti eritora Oberholser, 1922.
Macronus ptilosus sordidus Chasen, 1937.

According to Deignan (1964: 256), *Malacocincla abbotti eritora* is not a valid subspecies, and in the present paper I shall give arguments for not recognizing another six of the above-mentioned subspecies. This leaves the two owls, *Phodilus badius parvus* and *Strix leptogrammica chaseni,* and I am not quite convinced of the validity of either of them. If Ripley (1977a) is right that the populations of *Strix leptogrammica* inhabiting Sumatra and Borneo are consubspecific, the occurrence of a different subspecies on Billiton would be rather unlikely. The type-specimen of *Phodilus badius parvus* is the only specimen from Billiton available in our collection, and it is rather small (wing 176 mm). As Chasen had a good series, this subspecies may be valid. As neither of these owls has been recorded from Bangka (although they are quite likely to occur), the question may rest for the moment.

In view of the close affinity postulated above, it may cause wonder that (on the basis of Chasen's, 1937a, list) 43 species known from Billiton, fully 25% of the total number, have not been recorded from Bangka. Over half of this number are, however, migrant visitors and widely distributed marine and shore birds. It is likely that most or all of the remaining species (land and

freshwater birds) occur also on Bangka. A further discussion of the two islands in relation to each other is of little value until both are ornithologically much better known.

Future study of the zoogeography of the region must also include field-work on Karimata, an island which, although much smaller than Bangka and Billiton, reaches an elevation of over 1000 m. There ought to be many more species than the miserable 21 that Chasen & Kloss (1933) could list for it, not to mention seabird colonies that are to be expected on at least some of the numerous smaller islands of the Karimata group.

In the first half of this century, when the concept was new, students of the Malaysian avifauna were mesmerized by the notion of geographical variation, and even the slightest difference was thought worthy of expression in nomenclature. The protagonist of these ideas was Oberholser, but Kloss, Chasen, Riley, Deignan and Hoogerwerf have added names for populations which, in the worst cases, do not appear to be differentiated at all, in other cases are based on average differences so variable that only a small proportion of individuals can be identified without reading first the localities on the labels. It has been my sad duty to re-evaluate and in many instances to reject, the subspecies described by my predecessors. Nevertheless, I believe that this task ought to be done, for by accepting many doubtful subspecies as valid, the true pattern of geographic variation and evolution in the region is blurred.

INTRODUCTION TO THE SYSTEMATIC LIST

In the systematic list, I have enumerated all bird specimens known to me from Bangka, with the museum where they are lodged and, where available, their registered or catalogue numbers. The institutions, with their abbreviations as used in the list are: Academy of Natural Sciences of Philadelphia (ANSP), Rijksmuseum van Natuurlijke Historie, Leiden (RMNH), United States National Museum, Washington (USNM), Zoölogisch Museum, Amsterdam (ZMA) and Zoologische Staatssammlung, München (ZSM). All ANSP and USNM specimens have registered numbers, and most of the RMNH specimens have catalogue numbers, but of the ZSM specimens only a minority has a registration number.

I have personally examined all RMNH, ZMA and ZSM specimens, and a selection of ANSP and USNM specimens (those specimens of which the specific or subspecific identification appeared to require verification), altogether about 600 out of the ca. 750 specimens from Bangka that were traced.

In the discussions, further abbreviations for specimens from institutions not yet mentioned have been used: American Museum of Natural History, New York (AMNH), Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel (KBIN), Zoologisches Museum, Berlin (ZMB), Zoological Reference Collection, Singapore (ZRC).

As has been explained on a preceding page, the specimens collected by v. d. Bossche were not individually labelled, but as from his letters it is clear that they have all been collected in the period 1859/1861, I have provided them with those years. In species with an obvious sexual dimorphism in plumage or in size, I have also added the sex, if there was some doubt in brackets. I have done the same with Teysmann's specimens.

Of the ANSP specimens, I have for obvious reasons listed only those of which it is certain that they are from Bangka (as they belong to species or subspecies not found in Java). This has reduced Kannegieter's collection from Soengailiat to only 20 specimens in 12 species.

Parrot (1907) has published measurements of wing and tail of all Hagen's specimens. I have re-measured a number of these and found that the wing-lengths taken by me are consistently one or two mm greater than those provided by Parrot. His tail-lengths, on the other hand, exceed mine, sometimes considerably. As an example, I give the measurements of the type-specimen of *Sitta frontalis hageni,* for which Parrot recorded wing 77.5 mm, tail 55 mm, whereas I measured wing 79 mm, tail 43 mm. In this connexion it is perhaps useful to mention that in measuring wings, I flatten them against a ruler, but do not apply excessive pressure in doing so, and that I measure tails from the middle of the base to the tip of the longest rectrix.

The total number of species here recorded from Bangka is 172. Two species, *Amaurornis phoenicurus* and *Cuculus fugax,* are represented by two subspecies, and one, *Pitta sordida,* by three, making a total of 176 forms. Of one species, however, *Pycnonotus brunneus,* the identification is tentative.

SYSTEMATIC LIST

Sula leucogaster plotus (Forster)

Pelecanus plotus Forster, 1844, Descr. Anim. (ed. Lichtenstein): 366. — Ternate.

Material. — ♂, Strait Bangka, XI.1904 (Buitendijk, RMNH cat. no. 30).

Fregata andrewsi Mathews

Fregata andrewsi Mathews, 1914, Austral Av. Rec. 2: 120. — Christmas Island, Indian Ocean.

Material. — ♂, 20.VII.1872 (Vosmaer, RMNH cat. no. 1); ♀, not dated (Vosmaer, received in 1874, RMNH cat. no. 2).

De Schauensee (1958: 281): "saw several of these frigate-birds sailing over the Bangka Strait on November 24, 1932. Not previously recorded from Bangka". I regret the absence of any kind of description with this record, for when thirty years later, in February 1962, I passed through Strait Sunda and Strait Bangka on my way from Fremantle to Singapore, the common frigate-bird to be seen was *Fregata ariel.* The matter is not really important as both species, *F. ariel* and *F. andrewsi,* have been known from Bangka for over a century.

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).

Material. — ♀, 1.VIII.1872 (Vosmaer, RMNH cat. no. 11).

Butorides striatus javanicus (Horsfield)

Ardea Javanica Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 190. — Java.

Material. — 2ϕ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 27, 28); ♀, 12.VI.1872 (Vosmaer, RMNH cat. no. 25); ϕ ad., not dated (Vosmaer, received in 1874, RMNH cat. no. 26).

Nycticorax nycticorax nycticorax (Linnaeus)

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

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 35).

Gorsachius melanolophus (Raffles)

Ardea melanolopha Raffles, 1822, Trans. Linn. Soc. Lond. 13: 326. — Sumatra.

Material. — ϕ juv., 1859/1861 (v. d. Bossche, RMNH cat. no. 7); ♂, 8.IV.1873 (Vosmaer, RMNH cat. no. 8).

Egretta sacra sacra (Gmelin)

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

Material. — ♂, 10.VI.1873 (Vosmaer, RMNH cat. no. 11).

This is an individual of the grey morph, which over most of the range of the species is commoner than the white morph (Mayr & Amadon, 1941; Hoogerwerf, 1967: 55). The material in the RMNH collection shows also a preponderance of grey specimens:

Western part of the range: Andamans (4 G), Nicobars (1G), Simalur (10 G, 2 W), Nias (2 G), Batoe Islands (3 G), Engano (1 G, 2 W), Sumatra (2 G), Bangka (1 G), Java (12 G, 8 W), Bali (2 G), Flores (1 G).

Celebes and surrounding islands: Celebes (6 G), Sanghir Islands (2 G), Muna (1 G).

Moluccas, etc.: Raoe near Morotai (1 G), Morotai (1 G, 1 W), Halmahera (2 G), Ternate (4 G, 2 W), Obi (1 G), Buru (1 W), Ambelau near Buru (1 G), Ceram (1 G), Ambon (9 G, 3 W), Groot Kai (1 G), Klein Kai (3 G), Leti (1 W), Kisar (1 G, 1 W), Babar (1 G, 1 W).

New Guinea and surrounding islands: Aru Islands (1 G, 1 W), Gebe (1 G, 1 W), Gagi (3 G), Waigeo (5 G), Gemien near Waigeo (1 G), Biak (1 G, 2 W), mainland of western New Guinea from Sorong to Etna Bay (5 G), Duke of York (1 G).

Other localities: Japan (2 G), Palau Islands (1 G), Queensland (1 W), New Zealand (2 G, 1 W), Fiji (1 G), Tongataboe (one pied specimen).

In the area between the Andamans and the Bismarck Archipelago, this gives a total of 92 specimens (78%) of the grey morph and 26 specimens (22%) of the white morph.

Leptoptilos javanicus (Horsfield)

Ciconia Javanica Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 188. — Java.

Material. — ♂, 6.VI. 1873 (Vosmaer, RMNH cat. no. 4); ♀ skull, 1864 (Vosmaer, received in 1874, RMNH cat. no. g, cf. v. Oort, 1907: 25).

Besides Bangka, *Leptoptilos javanicus* has also been recorded from Billiton, first by Vorderman (1890: 518) and subsequently by Chasen (1937a: 213). A clutch of two eggs in our collection provides proof that the species is a resident on that island, as, undoubtedly, it is on Bangka. The eggs were taken at the mouth of the Sei Brang, west Billiton, on 15.V.1936 (F. J. Kuiper, RMNH no. 60296), they measure 71.1 × 52.7 and 72.1 × 53.6 mm.

Dendrocygna javanica (Horsfield)

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

Material. — ♂, 24.XII.1872 (Vosmaer, RMNH cat. no. 16); ♀, 19.II.1873 (Vosmaer, RMNH cat. no. 17).

Accipiter gularis gularis (Temminck & Schlegel)

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

Material. — ♀, 1869/1872 (Teysmann, RMNH cat. no. 15a); ♂, 20.X.1872 (Vosmaer, RMNH cat. no. 11); ♀, 1.XI.1872 (Vosmaer, RMNH cat. no. 12).

Haliastur indus intermedius Blyth

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

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 12); ♂, XI.1866 (Buddingh', RMNH cat. no. 14); ♀, 13.X.1872 (Vosmaer, RMNH cat. no. 28).

Spizaetus cirrhatus limnaeetus (Horsfield)

Falco Limnaeetus Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 138. — Java, in the southern part of the island.

Material. — ♂, 17.VIII.1872 (Vosmaer, RMNH cat. no. 20).

Spizaetus nanus nanus Wallace

Spizaetus nanus Wallace, 1868, Ibis (n. s.) 4: 14, pl. I. — Borneo = Sarawak (cf. Warren, 1966: 198).

Material. — ♂, 19.VI.1904, Tanjong Pamuga (Abbott & Kloss, USNM no. 180439); ♀, 28.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180440).

I have examined specimen no. 180440, an adult bird, and took the following measurements: wing 310, tail 220, tarsus 74, culmen from skull 30½, culmen from cere 23, middle toe without claw from feathers 29 mm. Unfortunately, so few sexed specimens of this species appear to be known that on the basis of these measurements it is impossible to make a guess at its sex (cf. Stresemann, 1938a: 426).

Haliaeetus leucogaster (Gmelin)

[Falco] leucogaster Gmelin, 1788, Syst. Nat., (ed. 13) 1: 257. — no locality, ex Latham, 1781, Gen. Syn. Birds 1: 33: Its native place unknown.

Material. — ♀, 12.XI.1872 (Vosmaer, RMNH cat. no. 11). On its socle the year of collecting is given as 1873, but that must be an error.

Machaerhamphus alcinus alcinus Westerman

Machaerhamphus alcinus Westerman, 1851, Bijdr. Dierk. 1 (2): 29, pl. 12. — het schiereiland Malacca.

Material. — ♀, 1873 (Vosmaer, RMNH cat. no. 2).

Falco peregrinus calidus Latham

Falco calidus Latham, 1790, Index Orn. 1: 41. — India.

Material. — ♂, II.1865 (Buddingh', RMNH cat. no. 37).

Coturnix chinensis palmeri (Riley)

Excalfactoria chinensis palmeri Riley, 1919, Proc. Biol. Soc. Wash. 32: 93. — Daroe, Java.

Material. — ♂, middle V.1905, Simpang (Hagen, ZSM).

The geographical variation of *Coturnix chinensis* requires further study. Chasen (1935b: 5) believed that Sumatra was inhabited by two subspecies: the

nominate one in north and east Sumatra, and *palmeri* in south and west Sumatra. He assigned specimens from Billiton to *palmeri* (cf. also Chasen, 1937a: 208), and assumed that birds from Bangka, which evidently he had not personally examined, would belong to the same subspecies. In my opinion the validity of *palmeri* is questionable, but lacking good comparative material from China and from the Philippines, I have been forced to accept it. The position in Borneo also requires further study (Thompson, 1966: 392-393).

Rollulus rouloul (Scopoli)

Phasianus (Rouloul) Scopoli, 1786, Del. Flor. Faun. Insubr. (2): 93. — no locality = Malacca.

Material. — ♂, 1859/1861 (v. d. Bossche, RMNH cat. no. 8); ♂, not dated, ca. 1865 (Buddingh', RMNH cat. no. 9); ♀, 1869/1872 (Teysmann, received in 1877, RMNH cat. no. 12); ♂, 9.VII.1872 (Vosmaer, RMNH cat. no. 10); ♂, 9.X.1872 (Vosmaer, RMNH cat. no. 11); ♂, Tanjong Pamuga, 19.VI.1904 (Abbott & Kloss, USNM no. 180426); ♀, 21.VI.1904, Tanjong Pamuga (Abbott & Kloss, USNM no. 180425); 4♂, 2♀, V-VI.1905, Simpang (Hagen, ZSM).

Lophura ignita ignita (Shaw)

Phasianus ignitus Shaw, 1797, Nat. Hist. Misc. 9, text to pl. 321. — Java (errore!) = Borneo (reference not verified).

Material. — ♂, 1869/1872 (Teysmann, RMNH cat. no. 4); ♂, 1869/1872 (Teysmann, ZMA without number); ♀, 1869/1872 (Teysmann, ZMA no. 25809); ♀, 18.VII.1872 (Vosmaer, RMNH cat. no. 5); ♂, 5.XII.1872 (Vosmaer, RMNH cat. no. 6); ♂, 30.V.1905, Simpang (Hagen, ZSM, missing); ♀, VI.1905, Simpang (Hagen, ZSM, missing).

Büttikofer (1896a, s. n. *Lophura nobilis*) discussed the RMNH specimens and remarked that they cannot be distinguished in any respect from those of Borneo.

Although de Schauensee (1958: 281) is perfectly right in stating that Teysmann already found this species on Bangka, the reference he gives (to Teysmann, 1873: 50) cannot be correct, for the only ornithological matter appearing on the page indicated, concerns the market price of domestic fowls.

Turnix suscitator suscitator (Gmelin)

[Tetrao] Suscitator Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 763. — Java.
Hemipodius pugnax Temminck, 1815, Hist. Nat. Gén. Pigeons et Gallinacés 3: 612, 754. — Java.
Turnix suscitator kuiperi Chasen, 1937, Treubia 16: 208. — Billiton Island.

Turnix suscitator baweanus Hoogerwerf, 1962, Ardea 50: 199. — Muara, South Bawean.

Material. — ♂ = ♀, 1869/1872 (Teysmann, RMNH cat. no. 10); ♀, X.1872 (Vosmaer, RMNH cat. no. 9); 4 ♂, middle V.1905, Simpang (Hagen, ZSM).

When Chasen (1937a) described *T. s. kuiperi,* he was not aware of the fantastic amount of individual variation that can exist in the colours of the upperparts. Our two Billiton specimens, one of which is the type of *kuiperi* (RMNH no. 14029), agree with the grey extreme of birds from Java and Sumatra, and there is no proof that they fall outside the range of variation of the nominate race.

Our collection contains two paratypes of *T. s. baweanus* Hoogerwerf (♂, RMNH no. 27865; ♀, RMNH no. 27866), a supposedly endemic form of Bawean Island. Unlike Hoogerwerf (1962a), I found that as regards plumage, these specimens fit well into a large series of nominate *T. s. suscitator* from Java. Hoogerwerf further stressed as an important character the slender bills of specimens from Bawean, but the bill of the female does not differ from the average bill of females from Java. As regards the male, the bill has become distorted in preparation, the mandible having been pulled backwards some two or three millimetres from its natural position, with the result that the maxilla protrudes, slender and hook-like; farther backwards, the distal portion of the mandible is partly pushed into the hollow inside of the maxilla, giving the whole bill an appearance of slenderness, that is entirely artificial. I have no hesitation in placing *T. s. baweanus* into the synonymy of *T. s. suscitator.*

Amaurornis phoenicurus chinensis (Boddaert)
(table 1)

Fulica chinensis Boddaert, 1783, Table Pl. Enlum.: 54. — no locality = China.

Material. — ♀ im., XI.1904, Strait Bangka (Buitendijk, RMNH cat. no. 39).

It has long been known that in the northern part of its range *A. phoenicurus* is migratory, and that such migrants occur in winter in Malaya and Sumatra, together with the resident populations (cf. Chasen, 1935b: 27 footnote 3). More recently, Medway & Wells (1976: 131) have summarized evidence from the Malay Peninsula. The conditions under which Buitendijk's specimen was captured (it flew on board of a ship), and its wing-length of 158 mm (very large for a resident female), point to its being a migrant.

Resident birds have been called *javanicus,* the long-winged migrants *chinen-*

Table 1. Measurements of *Amaurornis phoenicurus*.

number/sex	wing	av. wing	tail	av. tail	tarsus	av. tarsus	culmen	av. culmen
Formosa (*chinensis*)								
22 ♂	160-181	171.9	63-76	69.0	48, 51-61	56.4	34-42	39.3 [1]
18 ♀	154-176	164.2	60-75	65.6	50½-57	53.3	33-41	36.0
Sumatra (*chinensis*)								
2 ♀	157, 162		62, 64		54, 54		33½, 36	
Bangka (*chinensis*)								
♀	158		62		63½		34	
Sumatra (*javanicus*)								
8 ♂	142-152	149.3	48-61	55.8	54-56	55.0	35½-38½	36.9
8 ♀	135-146	139.1	49-58	53.3	47-54	49.9	31-37	32.5
Java (*javanicus*)								
19 ♂	137-154	147.0	51-62	54.9	48-57	53.5	34½-39½	36.9
16 ♀	134-148	140.1	47-57	52.2	49-55	50.8	31-37½	34.1
Bali (*javanicus*)								
2 ♂	151, 152		57, 59		52, 54½		37, 37	
♀	143		52½		50		31½	
Ceylon (*phoenicurus* and subsp.?)								
11 ♂	151-158, 165, 166, 169		58-68		53-60		34-40	
11 ♀	140, 143, 147-159		57-65		49-56		32½-37	

[1] An adult specimen labelled as a ♂, with a wing-length of 152 mm, has been excluded as it has almost certainly been missexed.

sis. According to Ripley (1977b: 264), however, these time-honoured names are both synonyms of the nominate race, the type-locality of which is Ceylon. The variation in wing-length of particularly the males, given by Ripley (144-187 mm, perhaps copied from Stresemann, 1913a: 303-305), is much in excess of what one would reasonably expect in a more or less homogeneous population, and suggests that careful measuring of large series might lead to a better understanding of geographical variation. Junge (1936: 5) has presented measurements of material in our collection from several islands. Since then, however, more material has been received, so that I am able to provide measurements of much larger series. The first question to be solved was, whether large-winged birds like the one from Strait Bangka can be proven to be migrants, or might possibly fall within the range of variation of resident birds from the Sunda Islands. The measurements are summarized in table 1. Note that the variation in wing-length of 25♀ from Sumatra, Java and Bali is 134-148 mm, the maximum for 29♂ 154 mm. Two specimens from Sumatra (♀, 5.XII.1913, Kalung, Padang, RMNH cat. no. 50, and ♀, 20.XI.1914, Medan, RMNH cat. no. 134) measure 157 and 162 mm respectively; they and the bird from Strait Bangka are so much larger than other members of their sex, that they may safely be regarded as migrants*).

There is little doubt that the series from Ceylon includes a resident and a migrant population, the migrants being larger. Individual wing-measurements are: 11♂ 151, 153, 154, 156, 157, 157, 157, 158, 165, 166, 169 mm; 11♀ 140, 143, 147, 147, 150, 150, 151, 152, 153, 155, 159 mm. The dates of collecting of the three large males are 14.I.1922, 16.III.1889 and 4.XII.1915. The December specimen, a juvenile male (wing 169 mm) was obtained by Buitendijk at Colombo. All Buitendijk's collecting was done on board of ships, which supports the opinion that this specimen was a migrant. In the females it is not so clear that two populations are involved, but the largest specimen, collected on 22.I.1922, could have been a migrant.

Contrary to Ripley, I consider it useful to recognize the subspecies *chinensis* and *javanicus,* as in the Malaysian region they are easily distinguished. I realize, however, that on the mainland of south and east Asia the intergradation between the nominate race, *chinensis,* and *javanicus* may be so complete

*) From Java, only resident *A. p. javanicus* has been recorded, although Dupond (1942: 15) has listed under that name a specimen from Java for which he gave a wing-length of 165.5 mm, a tail-length of 68 mm: measurements which are impossibly large for a resident. I have examined this specimen (ad., not sexed, "Java", received on 23.VII.1847, KBIN no. 3775γ) and measured: wing 137, tail 53, tarsus 49 mm, quite normal for *A. p. javanicus.* Dupond must have made an error.

that Ripley's opinion could be the more logical one and ultimately perhaps the only tenable one.

Amaurornis phoenicurus javanicus (Horsfield)

Gallinula Javanica Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 196. — Java.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 6); ϕ, 1869/1872 (Teysmann, RMNH cat. no. 7); ♀, 25.I.1873 (Vosmaer, RMNH cat. no. 8); ♂, 20.II.1873 (Vosmaer, RMNH cat. no. 9); ♀, 11.III.1873 (Vosmaer, RMNH cat. no. 10); ♀, 12.III.1873 (Vosmaer, RMNH cat. no. 11).

The wing-lengths of these specimens are: ♂ 136 mm, 3♀ 136, 137, 149 mm, 2ϕ 139, 146 mm. It is almost certain that the male and the largest of the females (cat. no. 10) are missexed, and that actually the former is a female, the latter a male.

A discussion of these specimens, which on the basis of their rather small size may be assigned with some confidence to the resident subspecies *javanicus,* has been given under the preceding subspecies.

Rallina fasciata (Raffles)

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

Material. — ♂, V.1905, Simpang (Hagen, ZSM); ♂, early VI.1905, Simpang (Hagen, ZSM).

Pluvialis dominica fulva (Gmelin)

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

Material. — 4ϕ, 1859/1861 (v. d. Bossche, RMNH cat. nos. 21-24); ♀, 25.VIII.1872 (Vosmaer, RMNH cat. no. 81); ♂, 26.VIII.1872 (Vosmaer, RMNH cat. no. 82).

Pluvialis squatarola (Linnaeus)

[Tringa] Squatarola Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 149. — Europa.

Material. — ϕ, 8.IX.1872 (Vosmaer, RMNH cat. no. 26); ♀, 13.X.1872 (Vosmaer, RMNH cat. no. 27).

Charadrius leschenaultii Lesson

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

Material. — ♂, 6.VII.1872 (Vosmaer, RMNH cat. no. 49); ♂, 15.III.1873 (Vosmaer, RMNH cat. no. 50).

The date of collecting of no. 49 is interesting, but not exceptional, as in Malaya there are records from throughout the northern summer (cf. Medway & Nisbet, 1965: 178).

Charadrius peronii Schlegel

Charadrius peronii Schlegel, 1865, Mus. Hist. Nat. Pays-Bas 4 (mon. 29: Cursores): 33. — Banjer à Borneo, Tabena à Borneo, Papattan à Borneo, Borneo, Borneo, Java, île de Semao près de Timor; restricted to Semao (Samau) by Meise (1930: 191) and Junge (1936: 17).

Material. — ♂, 28.IX.1872 (Vosmaer, RMNH cat. no. 15); 2♂, 1.VII.1904, Klabat Bay (Abbott & Kloss, USNM nos. 180423, 180424).

Numenius arquata orientalis C. L. Brehm

Numenius orientalis C. L. Brehm, 1831, Handb. Naturg. Vög. Deutschl.: 610. — Ostindien.

Material. — ♂, 28.IX.1872 (Vosmaer, RMNH cat. no. 23); ♀, 5.I.1873 (Vosmaer, RMNH cat. no. 24); ♦, not dated (Vosmaer, received in 1874, RMNH cat. no. 25).

Numenius phaeopus variegatus (Scopoli)

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

Material. — ♂, 2.VII.1872 (Vosmaer, RMNH cat. no. 67); ♂, 8.IX.1872 (Vosmaer, RMNH cat. no. 68).

Tringa hypoleucos Linnaeus

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

Material. — 2♦, 1859/1861 (v. d. Bossche, RMNH cat. nos. 38, 39); ♀, 17.IX.1872 (Vosmaer, RMNH cat. no. 99).

Tringa glareola Linnaeus

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

Material. — ♀, 12.X.1872 (Vosmaer, RMNH cat. no. 57).

Tringa totanus subsp.

Material. — ♂, 28.IX.1872 (Vosmaer, RMNH cat. no. 16); ♀, 2.X.1872 (Vosmaer, RMNH cat. no. 17); ♂, 20.X.1872 (Vosmaer, RMNH cat. no. 18).

The measurements of these specimens are (in mm):

cat. no.	wing	tail	tarsus	exposed culmen
16 (♂)	155	54	48	46
17 (♀)	148	59	50	44
18 (♂)	160	58	51	46

It has become a tradition to refer Redshanks wintering in the Indo-Australian Archipelago to *T. t. eurhinus* Oberholser (cf. Hartert, 1921: 1612; Vaurie, 1965: 412), but in two substantial papers, Hale (1971, 1973) has provided an entirely new classification, in which the breeding range of *eurhinus* is restricted to Tibet, Kashmir and Ladakh, and the Asiatic Far East is inhabited by different subspecies. It is now, on geographical grounds, no longer likely that *eurhinus* reaches Malaysia at all, unless as a casual straggler. The birds wintering in this area would more likely belong to the subspecies *ussuriensis* and *terrignotae*. The rather small measurements of the specimens from Bangka would give some support to the opinion that they are *ussuriensis*, but Hale has failed to make clear how these should be recognized in their winter plumage; indeed, he has not discussed any material from east of Malaya and south of the Philippines, apart from the inclusion of "adult females" from "Nias Islands" as paratypes in the description of his new subspecies *craggi* (cf. Hale, 1971: 259); in both quotations, the plural appears to be due to a misprint. Evidently, *craggi* may also be expected in Sumatra and Bangka. In the circumstances, I refrain from applying a subspecific name to the birds from Bangka.

Xenus cinereus (Güldenstaedt)

Scolopax cinerea Güldenstaedt, 1774, Novi Comm. Sci. Petropol. 19: 473, pl. 19. — shores of the Caspian Sea about the mouth of the Terek River (reference not verified).

Material. — ♀, 6.X.1872 (Vosmaer, RMNH cat. no. 18); ♂, 25.III.1873 (Vosmaer, RMNH cat. no. 19).

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.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 10); ♀, 26.I.1872 (Vosmaer, RMNH cat. no. 23); ♂, 23.XII.1872 (Vosmaer, RMNH cat. no. 24).

The type-locality of *G. stenura* is usually merely given as "Sunda Islands" (cf. Peters, 1934: 275; Chasen, 1935b: 38), but from the original description it could already be almost said to be Java. Although Bonaparte (1830) refers to *Scolopax stenura* Kuhl, a few lines farther down he calls it *Scolopax stenura Temm. in litt.* and the short description was obviously based on information received from Temminck. Four specimens from Buitenzorg in our collection, all obtained by H. Boie in November and December 1826, must have been in Temminck's hands before 1830. They are the only certain syntypes present (RMNH cat. nos. 11-14; cf. Schlegel, 1864b: 13). Therefore the type-locality may safely be restricted to Buitenzorg, West Java. Although the name was apparently first given by Kuhl, he does not appear to have published it. There is no material collected by Kuhl, nor is there evidence that ever there was any (the name may have been given in a letter).

Calidris canutus subsp.

Material. — ♀, middle V.1905, Bangka without exact locality (Hagen, ZSM, missing).

It is a pity that Hagen's specimen can no longer be found, for *Calidris canutus* appears to be an uncommon visitor to Malaysia. Medway & Wells (1976: 151) could list only two records from the Malay Peninsula and I know of no records from Sumatra. Our collection contains no material from Borneo either, but there are ten specimens from Java. The specimen from Bangka would probably have belonged to the subspecies *C. canutus rogersi,* the validity of which has been denied by some authors (Vaurie, 1965: 403), but according to Roselaar (1983), the most recent reviser, it is recognizable. In the original description, Mathews (1913: 270) is confused about the type-locality of *rogersi;* he begins with the words: *"Canutus canutus rogersi,* subsp. n.;

Japan", but on the next page he tells us that the type-specimen is from Shanghai, a fact confirmed by Greenway (1978: 21). The only explanation I can offer for this strange contradiction is that Mathews must have believed that Shanghai is in Japan. On previous occasions I have noted that he (or his ghost writer Tom Iredale?) was weak in geography.

Calidris ruficollis (Pallas)

Trynga ruficollis Pallas, 1776, Reise d. versch. Prov. Russ. Reichs 3: 700. — Circa Lacus salsos Davuriae campestris (reference not verified).

Material. — ♂, 30.VI.1872 (Vosmaer, RMNH, cat. no. 34).

Calidris subminuta (Middendorff)

Tringa subminuta Middendorff, 1853, Reise Nord. u. Ost. Siberien 2, Th. 2: 222, pl. 19 fig. 6. — auf den Höhen des Westabhanges vom *S'tanowój*-Gebirge (Bach Kökan) . . . (und) . . . in der Nähe des Ausflusses der *Udá*.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 1).

Calidris ferruginea (Pontoppidan)

Tringa Ferrugineus Pontoppidan, 1763, Danske Atlas 1: 624. — no locality but equals Christionsø off Bornholm, Denmark (reference not verified).

Material. — ♀, 9.X.1872 (Vosmaer, RMNH cat. no. 24); ♂, 10.X.1872 (Vosmaer, RMNH cat. no. 25); ♂, 12.XII.1872 (Vosmaer, RMNH cat. no. 26).

Arenaria interpres interpres (Linnaeus)

[Tringa] Interpres Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 148. — Europa & America septentrionali, restricted type-locality the island of Gotland, Sweden (Hartert).

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 18); 2♀, 26.VIII.1872 (Vosmaer, RMNH cat. nos. 58, 59).

Esacus magnirostris (Vieillot)

Oedicnemus magnirostris Vieillot, 1818. Nouv. Dict. Hist. Nat. 23: 231. — no locality.

Material. — ♦ ad., 1859/1861 (v. d. Bossche, RMNH cat. no. 1).

Glareola maldivarum J. R. Forster

Glareola (Pratincola) Maldivarum J. R. Forster, 1795, Faunula Indica (ed. 2): 11. — no locality but ex Latham, 1785, Gen. Syn. Birds 3: 224: Maldivia Isles.

Material. — 8♦, 1859/1861 (v. d. Bossche, RMNH cat. nos. 4-11); ♂, III.1865 (Buddingh', RMNH cat. no. 21).

Sterna sumatrana sumatrana Raffles

Sterna Sumatrana Raffles, 1822, Trans. Linn. Soc. Lond. 13: 329. — Sumatra.

Material. — 2♦, 1869/1872 (Teysmann, received in 1877, RMNH cat. nos. 47, 48); ♂, 11.X.1872 (Vosmaer, RMNH cat. no. 29).

Treron curvirostra curvirostra (Gmelin)

[Columba] curvirostra Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 777. — Tanna (errore!) = Malay Peninsula (designated type-locality).
Treron nasica Schlegel, 1863, Ned. Tijdschr. Dierk. 1: 67. — district de Bandjermassing dans le Bornéo méridional.
Treron nipalensis harterti Parrot, 1907, Abh. K. Bayer. Akad. Wiss. (2) 24 (1): 261. — Deli.
Treron curvirostra chaseni Stresemann, 1950, Auk 67: 82, 86. — Selangor: Rawang (nomen novum for *Treron curvirostra curvirostra* apud Peters, 1937: 14).

Material. — ♂, 1869/1872 (Teysmann, RMNH cat. no. 4); ♂, not dated (Vosmaer, received in 1874, RMNH cat. no. 10); ♀, 11.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180436); ♂,♀, 1.VI.1905, Simpang (Hagen, ZSM); ♂, early VI.1905, Simpang (Hagen, ZSM).

In view of Hoogerwerf's (1962c: 31) convincing criticism, I have not accepted the suggested change of the designated type-locality of this species, and the substitution of the name *T. curvirostra chaseni* for the populations traditionally referred to the nominate race (cf. Stresemann, 1950). Even if Stresemann was right, at least two older names would have to be considered, as listed above.

Treron fulvicollis fulvicollis (Wagler)

C[olumba] fulvicollis Wagler, 1827, Syst. Av., Columba, sp. 8. — Java (errore!, based on Temminck, 1808, Hist. Nat. Pigeons, Colombars: 30, pl. 6, *Columba aromatica,* var.) = Sumatra.

Material. — 2♂, 1859/1861 (v. d. Bossche, RMNH cat. nos. 1, 2); ♂, 2.VII.1872 (Vosmaer, RMNH cat. no. 8); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180435); ♂, early V.1905, Simpang (Hagen, ZSM); ♀, late V.1905, Simpang (Hagen, ZSM); ♂, early VI.1905, Simpang (Hagen, ZSM).

Treron vernans griseicapilla Schlegel

[Treron vernans] griseicapilla Schlegel, 1863, Ned. Tijdschr. Dierk. 1: 71. — de Sumatra et de Bangka.

Material. — 9♂, 4♀, 2♂ juv., 1♂ pull., 1859/1861 (v. d. Bossche, RMNH cat. nos. 2-17, syntypes of *T. v. griseicapilla*); ♂, 15.II.1872 (Vosmaer, RMNH cat. no. 27); ♂, 9.VI.1872 (Vosmaer, RMNH cat. no. 28); ♂,♀, 1.VIII.1872 (Vosmaer, RMNH cat. nos. 29, 31); ♀, 29.IX.1872 (Vosmaer, RMNH cat. no. 30); ♂, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180434); ♂,♀, middle V. 1905, Simpang (Hagen, ZSM); ♂,♀, early VI.1905, Simpang (Hagen, ZSM).

Ptilinopus jambu (Gmelin)

[Columba] Jambu Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 784. — Java (errore!) = Sumatra.

Material. — 2♂, 1859/1861 (v. d. Bossche, RMNH cat. nos. 9, 10).

Ducula aenea polia (Oberholser)

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

Material. — 2♂, 1859/1861 (v. d. Bossche, RMNH cat. nos. 3, 4); ♂, III.1865 (Buddingh', RMNH cat. no. 5); ♂, 11.VIII.1872 (Vosmaer, RMNH cat. no. 14); ♂, 4.III.1873 (Vosmaer, RMNH cat. no. 15); ♂,♀, late V.1905, Simpang (Hagen, ZSM).

Ducula bicolor (Scopoli)

Columba (bicolor) Scopoli, 1786, Del. Flor. Faun. Insubr. (2): 94. — In nova Guiana = New Guinea.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 1); ♂, 29.I.1872 (Vosmaer, RMNH cat. no. 21); ♂, 30.IX.1872 (Vosmaer, RMNH cat. no. 22).

Geopelia striata striata (Linnaeus)

[Columba] striata Linnaeus, 1766, Syst. Nat. (ed. 12) 1: 282. — in India orientali.

Material. — 3ϕ, 1859/1861 (v. d. Bossche, RMNH cat. nos. 5-7).

Chalcophaps indica indica (Linnaeus)

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

Material. — ♂, XI.1865 (Buddingh', RMNH cat. no. 10); 5♂, 2♀, late V — early VI.1905, Simpang (Hagen, ZSM, one specimen now missing).

Caloenas nicobarica nicobarica (Linnaeus)

[Columba] nicobarica Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 164. — in insula Nicomber prope Pegu indicum.

Material. — ♂, ♀, 25.V.1872 (Vosmaer, RMNH cat. nos. 26, 27); ♂, 15.I.1873 (Vosmaer, RMNH cat. no. 28).

Teysmann (1873: 77) recorded the occurrence of this species (s. n. *Columba Nicobarica*) on the smaller islands of the Lepar-group. Vosmaer's specimens are most likely to have been taken on small islands in Klabat Bay, near Blinjoe where he lived: one would expect *C. nicobarica* to occur on these islands, or to have occurred there in Vosmaer's time.

Streptopelia chinensis tigrina (Temminck)

Columba Tigrina Temminck, 1809, Hist. Nat. Pigeons, Colombes: 94, pl. 43. — Timor; Batavia.
Turtur tigrinus minor Parrot, 1907, Abh. K. Bayer. Akad. Wiss (2) 24 (1): 275. — Deli.

Material. — 2ϕ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 2, 3); ♂, 9.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180437); ♀ juv., middle V.1905, Simpang (Hagen, ZSM).

The name *minor* has generally been considered a synonym of *tigrina,* lastly by Junge (1948), and as I agree, there would be no need to discuss it again.

My only reason for doing so is to mention that I have examined the holotype (ZSM no. 04.56, the only specimen from Deli that was available to Parrot), and that it shows very heavy moult in the primaries, quite enough to explain its fairly small size. Even so, I measured a wing-length of 137 mm against Parrot's 135 mm.

Psittacula longicauda longicauda (Boddaert)

Psittacus longicauda Boddaert, 1783, Table Pl. Enlum.: 53. — Malacca.

Material. — 5♂, 5♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 7-16); ♀, 1869/1872 (Teysmann, received at Koloniaal Museum in 1876, now ZMA no. 23699); 2♂, 18.IX.1872 (Vosmaer, RMNH cat. nos. 24, 25); ♀, 26.IX.1872 (Vosmaer, RMNH cat. no. 26); ♀, 21.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180444); ♂, 22.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180443); ♂, 2♀, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM nos. 180445-180447); ♀, 20.VI.1904, Tanjong Pamuja (Abbott & Kloss, USNM no. 180448); ♀, 11.V.1905, Simpang (Hagen, ZSM, missing); 2♂, late V.1905, Simpang (Hagen, ZSM); ♂, early VI.1905, Simpang (Hagen, ZSM).

The tendency for populations of this species and its vicariant *P. alexandri* to show an increase in size on smaller islands, is well known, and has resulted in the description of a number of subspecies. *P. longicauda defontainei* was described from the North Natuna Islands, on the basis of having a wing-length of: 8♂ 157-168 mm, 5♀ 149-156 mm, as opposed to nominate *P. l. longicauda* from Malaya having a wing-length of: 9♂ 143-152 mm, 6♀ 135-149 mm (Chasen, 1934). In the original description, Chasen already included Bintang Island in the Riouw Archipelago in this large subspecies, as he found in an unstated number of specimens from there: wing-length ♂ 154-165 mm, ♀ 152-156 mm. A few years later, Chasen (1937a: 216) added Billiton to the range of *P. l. defontainei,* on the basis of the wing-lengths of 4♂: 155, 162, 164, 165 mm. Chasen left Bangka, from where he had not seen material, in the range of the nominate race, and this classification has become generally accepted (cf. Forshaw, 1973: 343). In view of the interest of the case — I know of no other instance in which Bangka and Billiton are inhabited by different subspecies — I took wing-measurements of all the material in our collection, with the following results:

Bangka	♂	150, 153, 157, 161, 162, 162, 164.
	♀	141, 144, 149, 150, 150, 150.
Billiton	♂	156, 158, 160, 163.
	♀	147, 157.
Sumatra	♂	143, 146, 148, 148, 148, 148, 150, 151, 151, 151, 151, 153, 155.
	♀	137, 138, 142, 143, 147, 148, 149, 150.
Borneo	♂	147, 148, 151, 151, 152, 153.
	♀	140, 144, 145, 151, 155.
Malaya	♂	152.
	♀	145.

Much of the old material is unreliably sexed and Chasen has warned that juvenile males, resembling females, may be larger than females. I have excluded from the measurements birds with greenish cheeks and undeveloped central tail-feathers, but it is possible that amongst the females a few juvenile males have been measured. Adult males, of course, give no problem.

The measurements suggest that there is little difference between birds from Bangka and Billiton, and that birds from both of these islands range larger than specimens from Sumatra, Borneo and Malaya. This fact being established, the secondary problem, of how to express this difference in nomenclature, remains. On the basis of my measurements, it would evidently not be justified to separate the populations from Bangka and Billiton under different subspecific names. On the other hand, Bangka cannot very well be included in the subspecies *defontainei,* which would suggest a separation from the Borneo and Sumatra populations of the nominate race, when actually all females and at least a large proportion of the males from Bangka are within the range of variation of that race. *P. l. defontainei* is probably a polytopic subspecies and my personal preference would be not to recognize it at all. For the moment, however, I do not want to go so far, but I believe that Bangka and Billiton should be included in the range of the nominate race.

Loriculus galgulus (Linnaeus)

[Psittacus] Galgulus Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 103. — India.

Material. — 2♂ ad., 1♀ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 4-6); 3♂, IV-VII. 1898, Soengailiat (Kannegieter, ANSP nos. 56107, 56108, 56109); ♀,♂, 1.VII.1904, Klabat Bay (Abbott & Kloss, USNM nos. 180449, 180450); ♂, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180451); ♀? ad., not dated but presumably V-VI.1905, Muntok (Hagen, ZSM no. 06.117).

Psittinus cyanurus cyanurus (Forster)

Psittacus cyanurus Forster, 1795, Faunula Indiaca (ed. 2): 6. — no locality, but ex Latham, 1781, Suppl. Gen. Syn. Birds 7: Malacca.

Material. — ♂, 1859/1861 (v. d. Bossche, RMNH cat. no. 3); ♂, not dated (Buddingh', received in 1865, RMNH cat. no. 10).

Clamator coromandus (Linnaeus)

[Cuculus] coromandus Linnaeus, 1766, Syst. Nat. (ed. 12) 1: 171. — Coromandel.

Material. — ♀, 1869/1872 (Teysmann, RMNH cat. no. 5); ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 7).

Cuculus fugax fugax Horsfield

Cuculus fugax Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 178. — Java.

Material. — ♂, 28.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180514); ♂, 6.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180513).

These specimens belong to the resident nominate race, as was to be expected from their dates of collecting (cf. Mayr, 1938: 21; Ripley, 1942).

Cuculus fugax nisicolor Blyth

C[uculus] nisicolor Blyth, 1843, J. As. Soc. Bengal 12: 943. — Nepal.

Material. — ♂, 1859/1861 (v. d. Bossche, RMNH cat. no. 4).

This specimen is, on the basis of its tail pattern and its small bill, clearly referable to the migrant subspecies. It was listed by Schlegel (1864a: 15) as *Cuculus varius,* a name under which he confused several species and subspecies.

Cuculus micropterus micropterus Gould

Cuculus micropterus Gould, 1838, Proc. Zool. Soc. Lond. 5 (1837): 137. — Himalaya Mountains.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 6).

This specimen was already recorded under its correct name by Schlegel (1864a: 12).

Surniculus lugubris brachyurus Stresemann
(tabs. 2-4)

Surniculus lugubris brachyurus Stresemann, 1913, Novit. Zool. 20: 340. — Bentong, Pahang.

Material. — ♀ ad., 1861 (v. d. Bossche, RMNH cat. no. 9); ♀ ad., V.1873 (Vosmaer, RMNH cat. no. 10).

The geographical variation of *S. lugubris* requires further study; the present specimens have wing 123, 124 mm, tail 112, 110 mm, agreeing with specimens from Sumatra and Borneo. I cannot explain why Finsch (1900: 77) found such different measurements for these same specimens (wing 120, 125, tail 108, 117 mm). Since Riley (1938: 132), who did so without explanation, the name *S. l. brachyurus* has usually been synonymized with *S. l. barussarum* Oberholser, described from the Batu Islands west of Sumatra, amongst others by de Schauensee (1940: 30) and Peters (1940: 35), but it was revived by Voous (1961: 139) on the basis of a difference in size (*brachyurus* is smaller). Voous added that therefore he would not follow Ripley (1944: 346) in considering *brachyurus* a younger synonym of *barussarum,* but the reference should rather have been to Riley, for Ripley actually recognized both subspecies although, having very inadequate material, he cautiously suggested that the size-difference required confirmation.

As a first step to elucidate matters, I have measured all the material of *S. lugubris* in the RMNH collection (table 2). The nominate race is fairly large and has a long tail: it does not require further discussion, as evidently it is a resident in Java and Bali. The majority of birds from Sumatra, and all specimens from Borneo and Bangka, are small and have short tails. The range of variation is very moderate in this material: 46 specimens (the sexes combined) have a wing-length of 116-127 mm, a tail-length of 105-123 mm. As the type-specimen (♂) of *S. l. brachyurus* from Bentong, Pahang, has a wing-length of 127 mm, a tail-length of 117 mm (measured by Mrs. LeCroy, in litt., 29.XII.1983), this name is available for these birds.

In addition, there are larger birds from Sumatra, Nias and Malaya (but not from Borneo). The variation in this group is of sufficient interest for individual measurements to be presented (table 3), from which it looks as if it

Table 2. Measurements of *Surniculus lugubris* (residents).

number/sex	wing	av. wing	tail	av. tail	entire culmen	av. entire culmen	culmen fr. nostril	av. culmen fr. nostril
Java (*lugubris*)								
32 ♂	124-135	128.6	121-143	131.0	21¼-27¼	24.0	13½-16½	15.35
16 ♀	124-135	128.9	123-139	128.3	23-26½	24.5	14-17½	15.3
Sumatra (*brachyurus*)								
15 ♂	118-127	123.4	105-120	112.6	23-26	24.5	14¾-17	15.8
15 ♀	118-125	121.7	104-116	109.4	22½-26	24.2	14-17	15.5
Bangka (*brachyurus*)								
2 ø	123, 124	123.5	110, 112	111.0	23½, 24¼		15, 15	
Borneo (*brachyurus*)								
4 ♂	118-123	121.3	108-113	109.5	23-24	23.4	14-15	14.6
7 ♀	119-127	123.5	106-123	113.1	22½-25¾	24.6	14-17	16.0
3 ø	116, 123, 124		111, 112, 120	114.3	23¾-25¼		15-15½	
Palawan (*minimus*)								
♂ im.	118		105		22¼		14	
♀ ad.	123		110		24¾		15½	

Table 3. Measurements of *Surniculus lugubris* (migrants).

sex	locality	date	wing	tail	entire culmen	culmen from nostril
♂	Palembang, Sumatra	12.VIII.1918	129	132½	23½	15½
♂	"	20.VIII.1918	128	135	24	15½
♂	Doekoe, Sumatra	ca. 1835	131	134	24½	15¼
♀	Palembang, Sumatra	10.VIII.1918	130	137	23+	15+
♀	Deli, Sumatra	3.III.1887	131	120	24	15¼
♀	Doekoe, Sumatra	ca. 1835	136	114	25	15¼
♀	Palembang, Sumatra	6.IX.1918	131	117	26	17
♀	Nias	11.VIII.1896	135	119	24½	15
♀	Tapah, Perak	31.X.1910	134	114	25	15½
♂	Timbang-Serdang, Sumatra	2.I.1935	141	139	-	- [1]
♂	"	3.I.1935	146	136	-	- [1]
♂	"	10.III.1935	140	131½	-	- [1]

[1] ZRC, measured by Dr. Wells.

Table 4. Measurements of *Surniculus lugubris* (USNM).

reg. no.	sex	locality	date	identification on label	wing	tail	culmen from nostril	
180815	♀	Nias	15.III.1905	*dicruroides*	143	128	16.0	
181213	♀	Siak R., Sumatra	2.XI.1906	"	141	128	16.6	
181212	♀	"	3.I.1907	*massorhinus*	143	131	16.8	1)
179679	♀	Tana Bala, Batu Isl.	10.II.1903	*barussarum*	135	120	16.0	2)
179680	♀	"	11.II.1903	"	134	118	16.2	
449989	♀	Prachuap Khiri Khan	11.XII.1952	"	132	123	15.7	
449990	♀	"	13.XII.1952	"	136	125	15.9	
449991	♀	"	19.XII.1952	"	132	115	15.6	
169742	♀	Trang	29.I.1899	"	133	115	15.7	
178920	♀	Singkep	18.V.1901	*brachyurus*	124	106	15.4	
153803	♂	Trang	1.VII.1896	"	127	108	15.7	

1) Type of *S.l. massorhinus*

2) Type of *S.l. barussarum*

can be divided in two: moderately large birds with long tails (wing of 4 specimens 128-131 mm, tail 132½-137 mm), and large birds with much shorter tails (wing of 5 specimens 131-136 mm, tail 114-120 mm). These must be migrants from continental south-east Asia, and the measurements suggest that two different populations are involved.

Now about the name *barussarum*. At my request Dr. Zusi has measured the type and certain other specimens in the USNM; these measurements are presented in table 4. As regards the question of whether the type is a migrant, or represents a resident large subspecies on the Batu Islands (as suggested by Ripley, 1944: 346), I note that de Schauensee (1940) gives for specimens from Tana Massa and Tello, Batu Islands, small measurements, agreeing with *brachyurus*. As *brachyurus* is not known to migrate, and as it is unlikely that two subspecies would be residents on the Batu Islands, it is obvious that the type-specimens of *barussarum* are migrants. Their month of collecting (February) does not contradict this. This being so, the name *barussarum* does not need to be considered further in relation to the nomenclature of the resident insular subspecies.

The Washington series seems to bring in another element: very large birds with moderately long tails, apparently the true *S. l. dicruroides* (Hodgson). I hesitate to identify any of the RMNH migrant specimens with this subspecies.

Finally, three Sumatran specimens in the Zoological Reference Collection, Singapore, measured by Dr. Wells, are very large with long tails (table 3); these I would also assign to *dicruroides*.

It is evident that both Stresemann (1913b) and Baker (1919) included migrants in their series of *brachyurus*. Actually, the RMNH specimen from Perak is one collected by Stresemann, and presumably is the bird for which he gives a wing-length of 134 mm, a tail-length of 117 mm. Baker claims for *brachyurus* a variation of wing 117-143 mm, tail 103-132 mm, and makes it worse by adding: "The two smallest birds in the British Museum series and one in the Tring Museum seem to belong to the Javan form, with which they agree both in their short, square tails and the wing formula". As I have already mentioned, birds from Java are rather large and have long tails.

As far as measurements are concerned, Baker's diagnosis of *S. l. minimus* (wing 117-126 mm, tail 105-115 mm) perfectly fits *brachyurus,* as do the measurements supplied by Salomonsen (1953: 236): wing 118-125 mm, tail 112-117 mm. It is true that both these authors (and previously Stresemann) believed Palawan birds to have a "distinctly blacker" under surface than "*S. l. lugubris*" (whatever that may have been in Baker's view!). My two specimens from Palawan do not show this difference when compared with

birds from Borneo and Sumatra, and other authors have queried its validity (cf. Peters, 1940: 36). In deference to Salomonsen, who had eight specimens on which to base his opinion, as against my two, I do not want to go so far as to reject the subspecies *minimus* definitely.

The migrations of the various populations of *S. lugubris* are poorly known. In China it is a summer visitor (Caldwell & Caldwell, 1931: 242) and the same pertains to northern Thailand, where it is present from March to September (Deignan, 1945: 166). In more westerly regions its status, whether resident or migratory, appears to be in doubt (cf. Ali, 1977: 51). It is of interest to note that migrants are already well-represented in the winter quarters before the middle of August, the whole period of their stay ranging from 10 August to 15 March. These winter visitors would come mainly from southern China, Indo-China, Thailand, and southern and eastern Burma; it is less likely that birds from Assam, Bengal and Nepal would migrate as far as Sumatra, although some very large birds (wing over 140 mm) might conceivably originate from there.

The current classification, in which birds ranging from the Punjab to eastern China and Hainan, and southwards to Peninsular Thailand, are all referred to a single subspecies *dicruroides,* may represent an oversimplification. If birds from the northern part of the Malay Peninsula have shortish tails, but retain the long wings of *dicruroides,* they cannot really be considered mere intermediates between *dicruroides* and *brachyurus,* especially not if their wings average longer than those of the more northerly populations. The name *barussarum* will be available for these birds.

I am indebted to Dr. Wells for sending me copious notes on *S. lugubris* in Malaya, from which it is evident that there, besides residents, at least two groups of migrants can be distinguished. I hope that Dr. Wells will continue his researches and publish them separately.

Eudynamys scolopacea malayana Cabanis & Heine

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

Material. — ϕ, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 18); δ, 6.XII.1872 (Vosmaer, RMNH cat. no. 17); ♀, 7.XII.1872 (Vosmaer, RMNH cat. no. 16).

Phaenicophaeus sumatranus (Raffles)
(tab. 5)

Cuculus Sumatranus Raffles, 1822, Trans. Linn. Soc. Lond. 13: 287. — Sumatra and the adjacent islands.
Rhopodytes sumatranus minor Riley, 1938, Proc. Biol. Soc. Wash. 51: 96. — Tanjong Batoe, Dutch East Borneo.

Material. — 5♂ ad., ♂ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 2-6, and *"diardi"* cat. no. 4); ♀, IV-VIII.1898, Soengailiat (Kannegieter, ANSP no. 56254); ♀, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180510).

The subspecies *minor* was described just a few months prior to the publication of Mayr's (1938: 27) paper in which it was stated that, although there is an average difference in size between birds from Borneo and birds from Malaya: "There is too much overlap to separate these populations by name". Significantly, neither Riley, the author of *minor,* nor Mayr had studied material from Sumatra, the type locality of the species (Riley mentioned that he had examined material from Sumatra, Bangka, Billiton and Lingga, but he only gave measurements of birds from the Malay Peninsula). The subspecies *minor* was accepted by Peters (1940: 52), Delacour (1947: 121) and Deignan (1961: 135), but was dismissed by Smythies (1957: 640) with the short remark: "Amadon (in press) does not recognize *minor* Riley". Amadon's paper has never been published and therefore I consider it useful to present a list of measurements of specimens in our collection, from which it is clear that *P. sumatranus* shows no significant geographical variation in size (table 5).

Phaenicophaeus chlorophaeus chlorophaeus (Raffles)

Cuculus chlorophaeus Raffles, 1822, Trans. Linn. Soc. Lond. 13: 288. — the forests of Sumatra.
[Phaenicophaeus chlorophaeus] mayri Delacour, 1947, Birds Malaysia: 120. — southern Borneo.
Phaenicophaeus chlorophaeus bangkanus de Schauensee, 1958, Proc. Acad. Nat. Sci. Philad. 110: 283. — Soengailiat, Bangka I.

Material. — 3♂, 4♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 7-13); ♂, ♀, 1869/1872 (Teysmann, received in 1877, RMNH cat. nos. 17, 18); ♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. no.19); ♂, 20.IX.1872 (Vosmaer, RMNH cat. no. 15); ♂, not dated (Vosmaer, received in 1874, RMNH cat. no. 16); ♂, IV-VIII.1898, Soengailiat (Kannegieter, ANSP no. 56257, type of *P. c. bangkanus*); ♀, IV-VII.1898, Soengailiat (Kannegieter, ANSP no. 56258); ♀?, middle V. 1905, Simpang (Hagen, ZSM).

The subspecies *bangkana* was based on two specimens only, one male and one female. In my larger material, the characters claimed as distinguishing this

Table 5. Individual measurements of *Phaenicophaeus sumatranus*.

	wing	tail	tarsus	exposed culmen	
Sumatra					
♀	136, 139, 146	-, 208, 234	33, 34, 33	31, 30, 32	1)
ø	143, 148	218, 218	33, 34	33½, 31½	
Bangka					
ø	142, 147, 152, 154	223, 218, 232, 225	33, 34, 33, 34	33, 34, 34, 30½	
ø im.	147	198	33	29	
ø juv.	143	179	29	25	
Billiton					
ø	137, 139, 150	220, 211, 209	33½, 32, 32	30, 32, 34	
Borneo					
♂	132, 137, 139, 141, 141, 141, 143	193, 197, 198, 208, 219, 219, 221	32½, 32, 33, 33, 31, 32, 32½	32½, 32, 31½, 33, 33, 32, 30	
♀	127, 134, 135, 141, 142, 144	190, 193, 205, 187, 209, 218	33, 33, 31, 33, 31, 33	32½, 31, 31½, 30, 32½, 32½	
ø	141, 144	195, 215	32, 32	30, 30½	

1) Sequence of measurements the same in all columns.

subspecies are not apparent. The central rectrices are very worn in most specimens, but in such specimens as could be reasonably measured I found for the width of the white terminal band to the central rectrices: ♂ 15, 15, 16, 16 mm, and ♀ 12, 13 mm. These measurements do not differ significantly from those of Sumatran birds: 10♂ 14-22 mm, 10♀ 13-20 mm. It should be noted that I had a larger choice of Sumatran birds, so that specimens with less worn tails could be selected for measuring; otherwise these figures only show that there is a fairly large individual variation.

The geographical variation of this species in Borneo was studied by Mayr (1938: 28-29). He concluded that birds from southern Borneo agree in plumage with birds from Sumatra, but differ by smaller size; as the material studied was modest, he refrained from naming the Bornean birds. Ripley (1943) examined a larger series and found: "that the differences between these birds and *c. chlorophaea* are too small to be distinguishable". Ripley's note was apparently overlooked by Delacour, who, in a casual way, introduced the name *mayri* as cited above.

Phaenicophaeus curvirostris microrhinus Berlepsch

Phoenicophaes microrhinus Berlepsch, 1895, Novit. Zool. 2: 70. — Borneo = Sarawak.
Rhamphococcyx erythrognathus var. *borneensis* Blasius & Nehrkorn, 1881, Jahresber. Ver. Naturw. Braunschweig 1880/1881: 125. — Jambusan, Sarawak, Borneo.

Material. — 4ϕ, 1859/1861 (v. d. Bossche, RMNH cat. nos. 6-9); ♂, 4.VI.1872 (Vosmaer, RMNH cat. no. 12); ♀, 4.VII.1872 (Vosmaer, RMNH cat. no. 13); ♂, 6.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180507); ♂, 11.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180509); ♀, 12.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180508); ♂?, ♀, 11.V.1905, Simpang (Parrot, ZSM); ♂, middle VI.1905, Simpang (Hagen, ZSM).

Hitherto Bangka was thought to be inhabited by the Sumatran race *P. c. erythrognathus* Bonaparte, but our specimens belong clearly to the subspecies *microrhinus*: the nostrils are elongated, wider than deep, and the beige colour (presumed to be red in life) extends well forward along the cutting edge of the maxilla. I cannot confirm Delacour's (1947: 122) statement that *erythrognathus* has the chin and cheeks grey, whereas these parts would be rufous in *microrhinus*. In both subspecies, there is much individual variation in the amount of grey on cheeks and throat, a variation apparently unrelated to age and sex. In my fairly large material, the percentage of grey-throated birds of *microrhinus* is greater than that of *erythrognathus*.

Thompson (1966: 398) has re-instated the name *P. c. borneensis* for this subspecies, apparently without realizing that it had been correctly rejected (by

Delacour, 1946: 1-2) as a secondary homonym of *P. diardi borneensis* (Salvadori), although he used both names on the same page. He has been followed by Cranbrook in Smythies (1981: 164) and therefore I consider it necessary to draw renewed attention to the homonymy.

Centropus bengalensis javanensis Dumont

centropus javanensis Dumont, 1818, Dict. Sci. Nat. (éd. Levrault) 11: 144. — Java.
C[entropus] pusillus Brüggemann, 1876, Abh. Naturwiss. Ver. Bremen 5: 61. — Borneo.

Material. — 3♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 14-16); "♂" = ♀, 27.I.1873 (Vosmaer, RMNH cat. no. 28); "♀" = ♂, 11.IV.1873 (Vosmaer, RMNH cat. no. 29); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180512).

Chasen (1935b: 130) cited the original description of this subspecies as *Cuculus javanicus*. Peters (1940: 72) changed this to *Cuculus javanensis*, adding in a footnote: "The specific name has been almost universally written *javanicus*". As this certainly suggests that Peters had personally consulted the original publication, I was surprised to note, on checking the reference, that the binomen as originally published is *centropus javanensis*. The name was based on a specimen collected by Leschenault.

I have considered it useful to list the synonym *C. pusillus*, as it was overlooked by Chasen (1935b).

Otus rufescens rufescens (Horsfield)

Strix rufescens Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 140. — Java.

Material. — ♀, 13.VI.1905, Simpang (Hagen, ZSM).

Otus bakkamoena hypnodes Deignan

Otus bakkamoena hypnodes Deignan, 1950, Auk 67: 196. — Pulau Padang, an island off the mouth of the Siak River, eastern Sumatra.

Material. — ♂ juv., 10.VII.1866, Muntok (Buddingh', RMNH cat. no. 17); ♂ pull., not dated (Vosmaer, received in 1874, RMNH cat. no. 21); ♀, early VI.1905, Simpang (Hagen, ZSM).

Apparently, Parrot (1907: 165-166) convinced himself that Hagen's specimen was missexed by its collector. His arguments are far from clear, but

he seems to have believed that there is a difference in the length of the ear-tufts, those of the males being longer than those of the females. As in my much larger material no such difference is evident, I have listed the specimen with the sex recorded by Hagen.

When Deignan (1950c) described this subspecies, he stated that it was: "From *O. b. lempiji* (Java) distinguishable in series by having the upper parts a deep brown, slightly washed with rufescent, instead of a nigrescent gray-brown". Although Deignan did not refer to differences in size, the measurements given by him suggest that Sumatran birds are larger than birds from Java, thus: ***hypnodes,*** wing of 10 specimens 142-159 mm; ***lempiji,*** wing of 11 specimens 136-150 mm.

A few years later, Deignan (1957) once more discussed the geographical variation of *Otus bakkamoena* in the Sunda Islands. Now he claimed that *O. b. lempiji* occurs in three "phases", viz.: "1) a 'gray' one, with the upper parts gray-brown, marked with grayish white or buffy gray, and the under parts gray or buffy gray; 2) an 'intermediate' one, with the upper parts similar but more nigrescent, and the under parts grayish buff; 3) a 'red' one, with the upper parts dull rufescent brown, marked with pale buff, and the under parts dull ferruginous buff".

Note that in his earlier paper, Deignan (1950c) made no mention of the existence of "phases" in birds from Java, although he did mention it for Bornean birds.

I have put our whole series of adult birds from Java and Sumatra on the table, and can comment as follows: Unlike Deignan, I am quite unable to distinguish "phases" (or morphs). Although the presence of different morphs is not unusual in nocturnal birds, such variation does not exist in specimens of *O. bakkamoena* from Java and Sumatra. There is certainly some variation, which will be described below, but surely, to qualify as morphs, there ought to be two or more distinct colour types, with only a minority of intermediate birds. In the specimens examined by me, there is no such discontinuity; on the contrary, there is a smooth gradient from one extreme to the other, with the great majority of specimens somewhere near the middle of the range, and few at each end. Actually, Deignan himself weakens his whole classification, by accepting an "intermediate phase" — as he does not mention numbers of birds of each "phase" examined, he leaves us to guess how his specimens were divided over the three "phases", so that his material may also have consisted mainly of intermediate birds. Unfortunately, I must exclude Borneo from this discussion, as I have seen too few specimens from that island.

Now about the variation found by me. Java: The sexes were separated. The three our four extreme (least brown, coldest in colour) males are a little

blacker on the upper parts, and less buff on the under parts than the extreme specimen in the female series. Otherwise the sexes are alike. There is in both series a very smooth gradient from one extreme to the other, to less black, more brown on the upper parts and more strongly tinged with buffy on the under parts. Of the females from Sumatra, three are deeper buff on the under surface than any female from Java, the other three are about similar to the buffy end of the gradient from Java. Of the males from Sumatra, three agree with the buffy end of the Javanese series, two are a little lighter. This looks pretty convincing, but unfortunately two unsexed birds from Sumatra (Deli, there cannot be any doubt about their provenance) agree with average Javan birds.

Wing-length of the material examined by me is as follows:

Sumatra	6♂	143-150,	average	146.0 mm
,,	6♀	143-155,	,,	149.5 ,,
,,	17♂♀	139-155,	,,	146.9 ,,
Bangka	1♂ juv.	143		
,,	1♀	151		
Java	18♂	135-149,	average	142.7 mm
,,	21♀	136-151,	,,	144.3 ,,
Bali	2♂	138,140		
,,	1♀	143		

Apparently birds from Sumatra average a little larger than birds from Java, and in both populations females average a trifle larger than males.

In summary: the material available to me confirms that *in series* Sumatran birds are more buffy in colour than specimens from Java. Deignan considered it likely that in southern Sumatra *lempiji* would occur, but some specimens from Telok Betong in the extreme south are as buffy as any other Sumatra bird; and the two specimens from Bangka also fit in here. On the other hand, two birds from Deli show very little buff and agree perfectly with the majority of the birds from Java. Conversely, some birds from Java are buffy like the average Sumatran ones.

On the basis of these average differences, I have accepted the subspecies *hypnodes,* but with great reluctance, as I doubt that more than 50% (if that) of Sumatran birds can be distinguished from all Javanese birds, a percentage that is usually regarded as too low for recognition in nomenclature.

In accepting *O. b. hypnodes* as the valid name for birds from Sumatra, I have not considered *O. b. cnephaeus,* described from Malaya in the same publication. The last-mentioned name has page priority and the fact that Deignan has included Singapore in the range of *hypnodes,* the rest of Malaya

in that of *cnephaeus,* makes the whole concept of two different subspecies suspect. Deignan's statement that *hypnodes* is separable from *cnephaeus* in series only, does nothing to alleviate my doubts. Lacking material from Malaya, I must, however, leave this question to a future reviser. For the same reason I cannot say much about the Bornean birds, described as *O. asio lemurum* by Deignan (1957), but it strikes me that he has compared them only with topotypical *O. b. lempiji* from Java, and makes no mention of *O. b. hypnodes,* to which (for zoogeographical reasons) one might expect them to be closer.

Bubo sumatranus sumatranus (Raffles)

Strix Sumatrana Raffles, 1822, Trans. Linn. Soc. Lond. 13: 279. — Sumatra.
Bubo orientalis minor Schlegel, 1862, Mus. Hist. Nat. Pays-Bas 2 (mon. 11: Oti): 13. — Bangka.

Material. — ♂, ♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 1, 2, syntypes of *B. o. minor*).

Ketupa ketupu ketupu (Horsfield)

Strix Ketupu Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 141. — Java.

Material. — ♂, 25.VII.1873 (Vosmaer, RMNH cat. no. 21).

Ninox scutulata scutulata (Raffles)

Strix scutulata Raffles, 1822, Trans. Linn. Soc. Lond. 13: 280. — Sumatra.
Noctua hirsuta minor Schlegel, 1873, Mus. His. Nat. Pays-Bas 2 (mon. 36: Revue Ois. de Proie): 24. — Bornéo, Bangka, Malacca.

Material. — 2♀, 1869/1872 (Teysmann, RMNH cat. nos. 1, 2, formerly nos. 5, 6, syntypes of *N. h. minor*); ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 5); ♀, 29.IX.1872 (Vosmaer, RMNH cat. no. 4).

Batrachostomus cornutus cornutus (Temminck)

Podargus cornutus Temminck, 1822, Recueil d'Ois. 4 (livr. 27): pl. 159. — Bencoule, dans l'île de Sumatra.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 7).

For over a century *P. cornutus* had been regarded as a synonym of *Batrachostomus javensis* (Horsfield), until Stresemann (1937) demonstrated that specimens from Sumatra, Bangka and Borneo, which had been placed under the name *javensis,* are larger than birds from Java and also show some colour differences. He regarded these differences as being of subspecific value and revived for them Temminck's name, in the combination *B. javensis cornutus.* The next step was taken by Wells & Medway (1976), who showed that *B. affinis* is the geographical representative of *javensis* in Borneo and Sumatra and that, therefore, *B. cornutus* had to be a separate species. Marshall (1978: 28) supported their findings.

A point that, perhaps fortunately, has not been raised by any of these authors, is that of the applicability of the name *cornutus.* Although Temminck described and figured a specimen from Sumatra, the name *cornutus* was expressly stated to be only a replacement name for *P. javensis,* and Temminck did not have any intention of describing a new species. Thus, under art. 72d of the Code (Stoll et al., 1961: 75), *P. cornutus* Temminck is an objective synonym of *P. javensis* Horsfield.

Batrachostomus stellatus (Gould)

Podargus Stellatus Gould, 1837, Proc. Zool. Soc. Lond. 5: 43. — Java (errore!) = Malacca.

Material. — ϕ, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 6).

Podargus parvulus, a manuscript name written by Temminck on the labels of three specimens, was validated twice. The first, and therefore the valid description was by Bonaparte (1850: 57); the second was by Schlegel (1857). By a peculiar co-incidence two authors almost simultaneously discussed the name *parvulus.* Neither of these authors appears to have been aware of Bonaparte's prior description, both ascribed the name to Schlegel.

The three specimens are: a male and a female from Kapoeas, Borneo (leg. Schwaner) and a male from Malakka (which equals the Malay Peninsula, but quite likely from near the town of Malacca, which was Dutch until 1824) without any further particulars as to date and collector. Stresemann studied the two specimens from Borneo and correctly identified the female as *B. stellatus,* the male as *B. affinis.* As the type-material consisted of two species

he designated the male specimen as lectotype, thus making *Podargus parvulus* Schlegel, 1857, a synonym of *B. affinis* Blyth, 1847*).

Mayr (1938: 15-16), on the other hand, was apparently informed by Junge of the existence of two syntypes only, the female from Borneo and the male from Malakka. As he considered these to belong to different subspecies of *B. stellatus,* he chose the Kapoeas female as lectotype of *P. parvulus* Schlegel, thereby making that name available for birds from Borneo, in the combination *Batrachostomus stellatus parvulus* (Schlegel).

Most subsequent authors have completely ignored Mayr's opinion that *B. stellatus* shows geographical variation (cf. Peters, 1940: 178; Delacour, 1947: 134; Smythies, 1957: 648 and 1981: 180), but Voous (1961: 143) discussed it and expressed doubt: "as long as the considerable individual and sexual variation in this species is not understood, we would do well to refrain from subspecific splitting".

As Stresemann's publication antedates that of Mayr, it is clear that his restriction of the name *P. parvulus* Schlegel has priority over that by Mayr. However, both authors only designated a lectotype for *P. parvulus* Schlegel, which is no more than a junior secondary homonym as well as an objective synonym of *Batrachostomus parvulus* Bonaparte. For the last-mentioned name no lectotype has ever been indicated so that the question of its identity is still undecided.

Eurostopodus temminckii (Gould)

Lyncornis Temminckii Gould, 1838, Icones Av. (pt. 2): pl. 16 and text. — Borneo (reference not verified).

Material. — 2♀ nestlings, 1869/1872 (Teysmann, received in 1872, RMNH cat. nos. 6, 7); 2♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. nos. 10, 11); 2♂, 16.III.1873 (Vosmaer, RMNH cat. nos. 8, 9); ♂, 6.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180461); ♀, 6.VI.1905, Simpang (Hagen, ZSM).

The occurrence of *E. temminckii* on Bangka has long been known. Sody (1928) recorded an egg from Bangka which he mistakenly believed constituted the first evidence for the occurrence of this species on the island. He was corrected by Snouckaert (1928). Sody's private collection was incorporated in our

*) In Stresemann's (1937: 317) table, the words: "Cotyp von *Podargus parvulus* Temm." have mistakenly been placed behind the specimen from Bangka instead of behind the Kapoeas specimen.

collection long ago, but we do not have the egg and I can find no evidence that it was ever received here.

E. temminckii has not yet been recorded from Billiton, but that it occurs also on that island is proven by two eggs in our collection (each constituting a complete clutch), taken on 24 and 28.III.1936 near Kampong Ajer Mali, west Billiton (F. J. Kuiper, RMNH nos. 60305, 60306).

Caprimulgus affinis affinis Horsfield

Caprimulgus affinis Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 142. — Java.

Material. — 2♂, ♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 6-8).

Harvey's (1976) note deserves mention here, not because it says anything new about the habitat of *C. affinis* (its occurrence in towns has been recorded in ornithological literature for well over a century), but because his observation of this species in Muntok is the only recent ornithological observation made on Bangka. I have tried to contact the author of the note, in the hope that he would be able to supply more information on the present state of birdlife on Bangka, but I have been unsuccessful.

Chaetura leucopygialis (Blyth)

Acanthylis leucopygialis Blyth, 1849, J. As. Soc. Bengal 18: 809. — Pinang.

Material. — ♂,♀, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180465, 180464).

Hemiprocne comata comata (Temminck)

Cypselus comatus Temminck, 1824, Recueil d'Ois. 4 (livr. 45): pl. 268. — Sumatra.

Material. — ♀, early VI.1905, Simpang (Hagen, ZSM).

Hemiprocne longipennis harterti Stresemann

Hemiprocne longipennis harterti Stresemann, 1913, Novit. Zool. 20: 339. — Deli (N. O. Sumatra).

Material. — 2♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 23, 24); ♂, ♀, 1.VII.1904, Klabat Bay (Abbott & Kloss, USNM nos. 180463, 180462).

This subspecies is very close to the nominate race from Java, but on throat and breast it is a very slightly darker grey.

Harpactes diardii diardii (Temminck)

Trogon diardii Temminck, 1832, Recueil d'Ois. 3 (livr. 91); pl. 541. — Bornéo . . . district du Pontianak, et . . . Sumatra dans la province de Padang. The figured specimen is from Pontianak, Borneo.

Material. — ♂, 26.IX.1872 (Vosmaer, RMNH cat. no. 3); ♀, 21.I.1873 (Vosmaer, RMNH cat. no. 4); ♂, 22.I.1873 (Vosmaer, RMNH cat. no. 5); ♂, 22.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180457); ♀, 24.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180458); ♂, early VI.1905, Simpang (Hagen, ZSM).

As noted by Parrot (1907: 182), specimens from Bangka have the crown tinged with pinkish red, as in birds from Borneo, rather than almost black as in the Sumatran subspecies *T. d. sumatranus* Blasius.

Harpactes duvaucelii (Temminck)

Trogon duvaucelii Temminck, 1824, Recueil d'Ois. 3 (livr. 49): pl. 291 and text. — Sumatra.

Material. — ♂, 23.VII.1872 (Vosmaer, RMNH cat. no. 5); ♂, 10.I.1873 (Vosmaer, RMNH cat. no. 6); ♂, 12.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180460); ♂, 24.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180459); ♂, middle V.1905, Simpang (Hagen, ZSM); ♂, 31.V.1905, Simpang (Hagen, ZSM).

Lacedo pulchella melanops (Bonaparte)

[Halcyon] melanops Bonaparte, 1850, Consp. Gen. Av. 1: 154. — Borneo. The type is from Bandjermasin.

Material. — ♂, 12.V.1905 (Hagen, ZSM no. A. 924).

As previously mentioned by Parrot (1907: 209) and Laubmann (1924: 138-139), the above specimen is a thoroughly typical representative of the subspecies *melanops*.

Halcyon concreta concreta (Temminck)

Dacelo concreta Temminck, 1825, Recueil d'Ois. 4 (livr. 58): pl. 346 and text. — Sumatra.
Halcyon concreta borneana Chasen & Kloss, 1930, Bull. Raffles Mus. 4: 24. — Bettotan near Sandakan, North Borneo.

Material. — ♂ juv., middle V.1905 (Hagen, ZSM no. A. 975); ♂ ad., late V.1905, Simpang (Hagen, ZSM no. A. 974); ♂ ad., 15.VI.1905 (Hagen, ZSM, missing).

The wing-length of the adult males, as published by Parrot, places these specimens in the nominate race. Actually, the retention of *borneana* is scarcely justified, as the Borneo subspecies differs only from the nominate race of Sumatra and Malaya by its average larger measurements. Specimens in our collection have the following wing measurements. Sumatra: ♂ 106, 107, 108, 110, 110, 113 (type!), 117 mm, ♀ 105, 106, 109, 110, 114 mm. Malaya: ♂ 110, 110 mm. Borneo (*H. c. borneana*): ♂ 114, 115, 118 mm, ♀ 113, 117 mm. There are also two specimens from Billiton in our collection, but one is a juvenile and the other is a young certainly not yet fledged, so that measurements cannot be taken. The authors of *borneana* supplied measurements as follows. Borneo: ♂ 111-117 (once 108) mm, ♀ max. 122 mm. Sumatra and Malaya: ♂ 102-111 mm, ♀ max. 114 mm. Only a few years later, Mayr (1938: 16) found that the difference could be less than that. As Chasen & Kloss failed to mention on how many females they based their statement that females are larger than males, it is difficult to comment on it, but the measurements taken by me rather suggest that in size the sexes are identical. Therefore I agree with Voous (1961: 145-146) that it is better not to recognize *borneana*. The reason why, contrary to Voous, I retain a trinomial, is that I have not examined specimens from peninsular Thailand, which have been separated under the name *H. c. peristephes* Deignan. This subspecies was accepted as valid by Medway & Wells (1976: 221).

Halcyon chloris subsp.

Material. — 4ϕ, 1859/1861 (v. d. Bossche, RMNH cat. nos. 4-7); ♂, 2.II.1873 (Vosmaer, RMNH cat. no. 8); ♂,♀, 20.VIII.1873 (Vosmaer, RMNH cat. nos. 9, 10); ♀?, 20.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180517); ♀, 21.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180518).

As Hoogerwerf (1965c: 240) has remarked: "it seems justified to suppose that the species *chloris* which has about 50 subspecies, has been seriously oversplit". A revision is required to separate chaff from wheat, and therefore I refrain from applying a subspecific name to the specimens from Bangka.

Halcyon coromanda minor (Temminck & Schlegel)

Alcedo (Halcyon) coromanda minor Temminck & Schlegel, 1848, Fauna Japonica, Aves: 76. — les îles de Bornéo et de Sumatra.

Material. — ♂ juv., 11.VII.1872 (Vosmaer, RMNH cat. no. 7); ♂, 30.I.1873 (Vosmaer, RMNH cat. no. 5); ♂, 18.II.1873 (Vosmaer, RMNH cat. no. 6).

Halcyon sancta sancta Vigors & Horsfield

[Halcyon] Sanctus Vigors & Horsfield, 1827, Trans. Linn. Soc. Lond. 15: 206. — New Holland.

Material. — ♂, 5.VII.1873 (Vosmaer, RMNH cat. no. 6).

On present evidence, Bangka constitutes the north-western limit of the winter distribution of this migrant from Australia. It is also known from Billiton (cf. Mees, 1982: 93-94).

Pelargopsis capensis cyanopteryx (Oberholser)

Ramphalcyon capensis cyanopteryx Oberholser, 1909, Proc. U. S. Nat. Mus. 35: 676. — Tapanuli Bay, northwestern Sumatra.

Material. — 2♂, VII.1872 (Vosmaer, RMNH cat. nos. 7, 8); ♀, 10.XII.1872 (Vosmaer, RMNH cat. no. 9); ♂ juv., middle V. 1905, Simpang (Hagen, ZSM no. A. 963).

Oberholser (1909: 664) expressed the opinion that birds from south-eastern Sumatra and Billiton do not belong to the subspecies *cyanopteryx* (described in the same paper), but agree with birds from Java. Later, Oberholser (1924), having received more material from Java, noted that specimens from south-eastern Sumatra and Billiton differ from Javanese birds, and therefore he described the former as a new subspecies under the name of *Ramphalcyon capensis arignota,* with type locality "Indrigiri River, southeastern Sumatra" (recte: Indragiri or Inderagiri, and actually not so very far south but almost half way up the east coast). Oberholser described the differences between *arignota* and birds from Java very well, but he omitted to discuss his new subspecies in relation to *cyanopteryx.* Oberholser had no material from Bangka, but it is evident that in his earlier view birds from this island would have belonged to the Javanese subspecies, in his later view to *arignota.* Laubmann (1924: 76-78) agreed with Oberholser (1909) — Oberholser's 1924 paper

would not yet have been available to him — and added Bangka to the range of the Javanese subspecies (at that time known as *Ramphalcyon capensis capensis*) on the basis of the specimen collected by Hagen: "Die Exemplare von Süd-Sumatra, der Insel Bangka und von Billiton, zeigen gegenüber der Stammform von Java keinerlei Abweichungen". Chasen (1935b: 98) did not agree and referred all birds from Sumatra, Bangka and Billiton to *cyanopteryx*. In this he was followed by Laubmann (1941: 113) and Peters (1945: 187).

As it is unlikely that Chasen and Peters have actually examined specimens from Bangka, and Laubmann had only a single juvenile bird, I have compared our material with specimens from various parts of Sumatra, and I agree that they are referable to *cyanopteryx,* and that the whole of Sumatra is inhabited by this subspecies. In series, *cyanopteryx* differs from *P. c. javana* of Java (for the use of this name, cf. Mees, 1971: 233-236) by having the wings and tail a little clearer blue, less greenish blue, the pileum darker and browner, less greyish, and the collar and under surface a deeper cinnamon. The existence of a considerable amount of individual variation in plumage, largely caused by wear, has been acknowledged by previous authors (Junge, 1936: 32-33; Ripley, 1944: 356) and not all three colour characters given above hold equally well in all specimens, but in spite of this, *cyanopteryx* and *javana* are reasonably well-marked races, so that I have had no difficulty assigning the Bangka birds to the former.

Alcedo meninting meninting Horsfield
(tab. 6)

Alcedo Meninting Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 172. — Java.
Alcedo verreauxii de la Berge, 1851, Rev. Mag. Zool. (2) 3: 305, pl. 9. — Borneo.

Material. — ♀,♦ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 10, 11; the juvenile is the specimen described and illustrated by Schlegel, 1864c: 6, 44, pl. 3 fig. 3); ♀,♦, middle V.1905, Simpang (Hagen, ZSM nos. A. 906, 27.692); 3♂, early VI.1905, Simpang (Hagen, ZSM nos. A. 907, A. 908, one missing).

The geographical variation of *A. meninting* has repeatedly been discussed. I need refer only to the papers by Chasen & Kloss (1930), Junge (1936: 34-35), Ripley (1944: 358-359), Junge (1948: 320) and Hoogerwerf (1965b: 231-236). The question that has to be answered in connexion with Bangka, is whether the subspecies *verreauxii* is valid, or is a synonym of the nominate race. Chasen & Kloss (1930), Chasen (1935b: 100), Junge (1936), Peters (1945: 174), Delacour (1947: 156), Smythies (1957: 662 and subsequent publications) and

Hoogerwerf (1965b) all recognized it. Junge (1948), on the other hand, having received additional material since his publication of twelve years earlier, changed his former opinion and concluded that: "there is no essential difference between birds from SE and W Sumatra and those from Java. The small difference in the average can be no reason to separate them". Junge did not include birds from Borneo, topotypical of *verreauxii,* in his discussion.

Hoogerwerf's (1965b) paper is not only the most recent one, but also the

Table 6. Measurements of *Alcedo meninting meninting.*

number/sex	wing	av. wing	tail	av. tail	exposed culmen	av. exposed culmen
Java						
40 ♂	63–69	65.7	23–31	26.7	37–42, once 44	40.0
32 ♀	64–70	66.5	24–30	27.6	35–40½	38.0
Sumatra						
11 ♂	62–67	63.8	24–28	26.1	35–40½	37.9
8 ♀	62–66	64.4	26–28	27.1	36–38	37.1
Simalur						
3 ♂	63–68	65.7	25–28	26.7	37–41	39.3
2 ♀	64, 65		27, 28		36, 37	
Nias						
♂	63		25		38	
Bangka						
♀	63		25		36	
Billiton						
♂	63		27		41	
Borneo						
8 ♂	61–65	63.3	24–29	25.8	37–41½	39.1
♀	63		25		34½	
Celebes						
2 ♂	65, 65		25, 27½		37, 38	
♀	67		25		37½	
Lombok						
♀	70		27		40½	

most comprehensive. As his conclusion is opposed to that of Junge, I considered that the problem of the validity of *verreauxii* required a renewed investigation. The material that was available to me includes that used by Junge, but is considerably larger.

As all authors have stressed smaller size as the main character of *verreauxii,* I have measured the greater part of our collection (table 6). Although it is apparent that birds from Sumatra and Borneo are smaller than birds from Java, the average difference in wing-length of ca. 2 mm between birds from Sumatra and Java, and of ca. 2½ mm between birds from Borneo and Java surely is much too small for expression in nomenclature. Hoogerwerf relied in particular on the difference in length of the bill, but here again, the difference in my larger material seems negligible. An average difference of 1-2 mm would be significant in short-billed birds, but hardly in birds with a culmen-length of 38-40 mm and an individual variation of ca. 5 mm. Incidentally, the minimum culmen-lengths recorded by Hoogerwerf for females (*meninting* 32 mm, *verreauxii* 28.8 mm) are so much below the minima found by me, that I am convinced he has measured immature specimens, in which the bill was not yet fully grown. More about this will be said below.

Previous authors have rejected the colour of the back and of the whitish patches above the lores and on the sides of the neck as subspecific characters and my material confirms this: the individual variation in the large series from Java encompasses in its range the variation found in specimens from the other islands. The variation in dorsal colour is from almost azureous blue to deep violet; it is not related to sex or age.

Hoogerwerf has also discussed the presence of brown on the cheeks and correctly concluded that this is a sexual character: in females the anterior part of the ear-coverts (and also the feathers immediately below them) are brown, in males the ear-coverts are entirely blue. In the females, the brown may be invaded or overlaid with blue to a certain extent, causing a fairly large individual variation, but in general it is reliable. In a very few instances, however, it seems to break down as a sexual character. In my series of males from Java, one adult bird (leg. Bartels, 11.XI.1905, Bandjar, RMNH no. 42919) has much brown on the sides of the face, exactly like a female. Hoogerwerf mentioned two blue-cheeked females, which he thought might have been wrongly sexed. In the present case, erroneous sexing is very unlikely; not only is the material in the Bartels collection very reliably sexed, but in addition, the specimen has an entirely black bill. In this connexion, it is surprising that Hoogerwerf did not observe (or at least did not refer to) another conspicuous sexual difference: males have black bills (in life at most with some red at the base), females have the entire mandible and usually also the sides of the maxilla bright red in life, pale yellowish in skins.

Juvenile birds have the same plumage as adults of their sex, but they can easily be recognized by their short bills. Apparently the bills take some time to attain their full size. In birds with growing bills, the tip of the bill (the distal 2 mm or so) is pale, not pigmented. Especially males, with their black bills, can be easily aged by this character, as adults have the bill black right to its tip.

Ceyx rufidorsus rufidorsus Strickland

Ceyx rufidorsa Strickland, 1847, Proc. Zool. Soc. Lond. 14 (1846): 99. — Malacca.

Material. — ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180522); ♂, 12.V.1905, Simpang (Hagen, ZSM no. A. 883); ♂,♀, 14.V.1905, Simpang (Hagen, ZSM nos. A. 885, A. 884); ♂, early VI.1905, Simpang (Hagen, ZSM no. A. 886).

Peters (1945: 185) cites the type-locality of *Ceyx rufidorsa robusta* Parrot (1907: 208) as "Banka?", but the bird was from Sumatra, 1893, leg. Martin. Martin has only collected in Sumatra, not on Bangka (cf. Parrot, 1907: 151).

Merops viridis Linnaeus

[Merops] viridis Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 117. — Java, Benghala = Java.

Material. — 3♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 3-5); ♂, ♀, 6.VII.1872 (Vosmaer, RMNH cat. no. 10); ♀, early V.1905, Muntok (Hagen, ZSM no. A. 652); ♂, early VI.1905, Simpang (Hagen, ZSM no. A. 653); 3♀ juv., middle VI.1905, Simpang (Hagen, ZSM nos. A. 654, A. 655, A. 656).

The juvenile birds collected by Hagen are easily distinguishable as such by their green heads.

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.
Merops Javanicus Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 171. — Java.
Merops philippinus (Linn.) var. nov. *celebensis* W. Blasius, 1885, Zeitschr. Ges. Orn. 2: 239. — Celebes.
Merops salvadorii Meyer, 1891, Ibis (6) 3: 294. — the north coast of New Britain = Kurakakaul.

Material. — ♂, 23.X.1872 (Vosmaer, RMNH cat. no. 19).

The occurrence of *M. philippinus* on Bangka is not unexpected, as this species is common throughout the Sunda Islands. What is surprising is that so far in this region it has only been found breeding in southern and central Celebes (Heinrich in Stresemann, 1940: 404; Coomans de Ruiter, 1948: 176; Watling, 1983) and Flores (Mees, 1982: 105).

Following remarks made previously (Mees, 1982: 105), I have compared our large series from Sumatra, Java and Celebes (and a few specimens from the Philippines), with our six specimens from New Guinea (*salvadorii*). Contrary to Deignan (1955), I have not only been unable to find any difference between birds from Sumatra, Java, and Celebes, but I have reluctantly concluded that even *salvadorii* is not a valid subspecies. The New Guinea birds differ merely in having crown, mantle and under parts a little more clearly tinged with brown, but there is so much individual variation, that this cannot be regarded as a useful character, even though Meyer already mentioned it in the original description. The characters by which other authors, like Madarász (1901), believed that *salvadorii* could be distinguished, are also invalid. See Fry (1984: 132).

Nyctyornis amictus (Temminck)

Merops amictus Temminck, 1824, Recueil d'Ois. 4 (livr. 52): pl. 310 and text. — Sumatra.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 7); ϕ, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 8); ϕ 5.VII.1872 (Vosmaer, RMNH cat. no. 5); ♂, 27.VII.1872 (Vosmaer, RMNH cat. no. 6); ♂, ♀, ♀ im., 8.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM nos. 180453, 180452, 180454); ♂ im., 20.VI.1904, Tanjong Pamuja (Abbott & Kloss, USNM no. 180455); ϕ, late V.1905, Simpang (Hagen, ZSM no. A. 677).

I do not know why Parrot (1907: 199) felt confident that Hagen's specimen was a female, as the collector did not record its sex.

Eurystomus orientalis orientalis (Linnaeus)

[Coracias] orientalis Linnaeus, 1766, Syst. Nat. (ed. 12) 1: 159. — India orientali.

Material. — ϕ, 1869/1872 (Teysmann, received in January 1876, ZMA no. 7636); ♀, 8.VI.1872 (Vosmaer, RMNH cat. no. 103); ♀, 7.X.1872 (Vosmaer, RMNH cat. no. 104); ♂, 10.II.1873 (Vosmaer, RMNH cat. no. 105).

Anthracoceros malayanus (Raffles)

Buceros Malayanus Raffles, 1822, Trans. Linn. Soc. Lond. 13: 292. — the neighbourhood of Malacca.
Anthracoceros malayanus deminutus Sanft, 1960, Tierreich 76: 85. — Mt. Mulu, Sarawak, in 600 m.

Material. — ♂ im., ♀, 6.VI.1873 (Vosmaer, RMNH cat. nos. 8, 9).

These specimens are large (wing ♂ 335 mm, ♀ 310 mm), and therefore agree with the Sumatran population and not with the Bornean population, which averages somewhat smaller (cf. Sanft, 1960). I share the opinion of Voous (1961: 148) that recognition of a separate subspecies *deminutus* from Borneo is inadvisable.

Megalaima rafflesii (Lesson)

Bucco Rafflesii Lesson, 1839, Rev. Zool. 2: 137. — Sumatra.
Bucco versicolor Raffles, 1822, Trans. Linn. Soc. Lond. 13: 284. — at Singapore and in Sumatra, preoccupied by *Bucco versicolor* P. L. Statius Müller, 1776.
Chotorea versicolor (Raffl.) v. n. *borneensis* W. Blasius, 1883, Verh. k. k. zool. – bot. Ges. Wien 33: 27. — Tumbang Hiang, Borneo.
Chotorhea rafflesii malayensis Chasen, 1935, Orn. Mber. 43: 147. — Insel Ubin nahe Singapore.
Chotorhea rafflesii billitonis Chasen, 1935, Orn. Mber. 43: 147. — Insel Billiton.

Material. — ♂, 2♦, ♦ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 3-6); ♀, IX.1865 (Buddingh', RMNH cat. no. 7); ♂, 15.VI.1872 (Vosmaer, RMNH cat. no. 8); ♀, 22.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180504); ♂, 24.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180502); ♂,♀, 27.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM nos. 180503, 180505); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180497); ♀, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180496); ♂, 10.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180501); ♀, 24.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180499); ♂,♀, 25.VI.1904, Klabat Bay (Abbott & Kloss, USNM nos. 180498, 180500); 2♂, 2♀, 2♦, middle V.1905, Simpang (Hagen, ZSM, one specimen missing); ♂, late V.1905, Simpang (Hagen, ZSM); ♂,♀, 15.VI.1905, Simpang (Hagen, ZSM).

The number of specimens taken by several collectors indicates that this is the common barbet of Bangka. Up to four subspecies have been recognized on the basis of plumage characters and measurements. The first of these was *borneensis,* which was described as having the red of head and sides of the neck less extensive: a difference that was evidently entirely due to the make-up of the skins.

By describing two new subspecies, from Malaya and from Billiton, Chasen (1935a) increased the number of forms to four. He claimed of *borneensis* and

billitonis that: "Bei diesen beiden Formen ist das Blau am Kopf durchschnittlich etwas blasser als bei typischen *rafflesii* und bei *malayensis*" (see also Chasen & Kloss, 1932: 14). My material of the species does not bear out that difference. Young birds differ from adults in that the blue of the throat is azureous blue rather than violet blue, and the number of immature birds in a series would influence the average tone of the blue. Chasen further drew attention to the large size of birds from Billiton, on the basis of which he ventured to describe them as a new subspecies, *billitonis*. This subspecies was accepted by Peters (1948: 34), but not by Ripley (1945: 554), who recognized but two subspecies: the nominate race (including *borneensis*) from Sumatra and Borneo, and the slightly larger *malayensis* (including *billitonis*) from peninsular Thailand, Malaya, Bangka, Billiton and Mendanau.

Wing-lengths of material in our collection are as given below. As there does not appear to be any difference between the sexes, and sexing is unreliable in some cases, I have united the sexes, but birds which are clearly immature have been excluded. Malaya (1) 119 mm, Sumatra (13) 111-120 (av. 116.6) mm, Borneo (25) 104, 108, 112-124 (116.2) mm, Bangka (5) 120-124 (121.6) mm. Unfortunately our three specimens from Billiton (leg. Vorderman) are juvenile, but even so their wings measure 119, 122, 123 mm, which is large. I re-measured Hagen's specimens, for which I found: ♂ 117, 122, 123, ♀ 116, 122, 123, ♁ 120, 121 mm. Further I measured some USNM specimens, which provided the following additional wing-measurements: Billiton ♂ 119, 126, ♀ 127 mm; Bangka ♂ 121, 123, 123, ♀ 118, 119, 123, 125 mm. Combination of the measurements of birds from Bangka gives (20) 116-125 (121.2) mm, from Billiton (6, including three juveniles) 119-127 (122.7) mm.

Chasen (1935a) recorded for a large series from Malaya (33 specimens) a wing-length of 117-130 (122) mm, which agrees well with the birds from Bangka and Billiton. Therefore my findings are in complete agreement with those of Ripley (1945). Whether the difference in size, real as it is, deserves expression in nomenclature is another question. Voous (1961: 149): "would even suggest that probably a binomial treatment of the species is more practicable". The largest wing-measurement I found in Borneo is 124 mm. In smaller series, Stresemann (1938b: 122) and Voous (1961: 149) found a maximum of 123 mm. Of the twenty specimens from Bangka only one exceeds the maximum measurement found in Bornean birds, although the average of the Bangka series is 5 mm larger. Billiton scores a little better (two out of six exceed the Borneo maximum). By any current standard, these differences are below the threshold of acceptance in nomenclature, so that I follow the suggestion made by Voous and do not recognize subspecies.

Megalaima australis duvaucelii (Lesson)

Bucco Duvaucelii Lesson, 1830, Traité d'Orn.: 164. — Sumatra.

Material. — ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180506); presumed ♀, middle V.1905, Simpang (Hagen, ZSM).

Picus puniceus observandus (Hartert)

Gecinus puniceus observandus Hartert, 1896, Novit. Zool. 3: 542. — Sumatra.
Brachylophus puniceus continentis Robinson & Kloss, 1921, J. Fed. Malay St. Mus. 10: 204. — Tapli, Pakchan Estuary, Renong, North Malay Peninsula.

Material. — ♂, 5.IV.1873 (Vosmaer, RMNH cat. no. 6); ♀, 25.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180475); ♀, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180474); ♀, 24.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180476); ♀, middle V.1905, Simpang (Hagen, ZSM).

Ripley (1944: 367) measured the three specimens collected by Abbott & Kloss, and noted that they are large. Vosmaer's specimen has a wing-length of 136 mm, whereas in 28♂♀ from Sumatra the maximum wing-length I measured is only 131 mm. I also re-measured the specimen from Simpang, for which Parrot recorded a wing-length of 127.5 mm, and found for one wing a length of 128 mm, the other 130 mm. Vosmaer's specimen lacks the red malar stripe and may be missexed. For further measurements, see Mayr (1938: 30) and Voous (1961: 150); there can be little doubt that birds from Bangka average larger than those of Sumatra and Borneo.

In their large measurements, birds from Bangka agree with birds from the Malay Peninsula, which, on the basis of size only, have been separated from *P. p. observandus* under the name of *continentis.* The wing measurements published by the authors of this subspecies are: Malay Peninsula 123-136 mm, Sumatra 115-123 mm, Borneo 118-126 mm. The wing-lengths of the larger series from Sumatra measured by me range, as stated above, to 131 mm, suggesting such considerable overlap with Malayan birds, that there seems little point in retaining the name *continentis,* as previously noted by Mayr (1938: 30), but if it is recognized, Bangka should be included in its range.

Picus mentalis humii (Hargitt)

Chrysophlegma humii Hargitt, 1889, Ibis (6) 1: 231. — Malacca and Klang, Salangore (= Selangor).

Material. — ♂, 28.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180467); ♂?, ♀?, middle V.1905, Simpang (Hagen, ZSM).

Picus miniaceus malaccensis Latham

[Picus] malaccensis Latham, 1790, Index Orn. 1: 241. — Malacca.

Material. — ♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 13); ♂, 18.II.1873 (Vosmaer, RMNH cat. no. 12); ♂, ♀, ♂ im., not dated (Vosmaer, received in 1874, RMNH cat. nos. 9, 10, 11); ♀, IV-VII. 1898, Soengailiat (Kannegieter, ANSP no. 56323); ♀, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180480); ♂, ♀, 7.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM nos. 180482, 180483); ♀, 8.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180481); ♂, early V.1905, Muntok (Hagen, ZSM).

Far be it from me to clutter this paper with all kind of irrelevant detail, but as Short (1973: 293; 1982: 454) has expressly stated that this species is not known to drum, I should like to mention that it does. I provide here a free translation of my diary-notes on the subject: Continuously I heard a loud, somewhat melancholy call in the forest and after a while I located the caller. Of a dead *Albizzia* tree, nothing but a huge piece of unbranched trunk remained, and against that an individual of *Picus miniaceus* was clamped, continuously uttering a drawn-out call: "khùw khùw khùw khùw", etc.; every now and then this was interrupted by drumming against the trunk (not very loud). A second bird, which I glimpsed only later, called also, but did not drum (Gobang, West Java, 26.XI.1947). In my notes there follows a description of the bird, which was observed at close range for a considerable time, showing that there could be no question of misidentification.

Micropternus brachyurus badius (Raffles)

Picus badius Raffles, 1822, Trans. Linn. Soc. Lond. 13: 289. — Sumatra.
Picus squamigularis Sundevall, 1866, Consp. Av. Picin.: 89. — Malacca . . . in oppido Singapore emta.

Material. — 2♂, 3♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 6-10); ♂, 26.IX.1872 (Vosmaer, RMNH cat. no. 13); "♀" = ♂, 9.III.1873 (Vosmaer, RMNH cat. no. 14); ♂ 11.III.1873 (Vosmaer, RMNH cat. no. 15); ♀, ♂, 20.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM nos. 180488, 180489); ♀, middle V.1905, Simpang (Hagen, ZSM); "♀" = ♂, late V.1905, Simpang (Hagen, ZSM).

According to Short (1982: 393), birds from Malaya and birds from Sumatra, since the revision by Robinson & Kloss (1921-1924: 181-184) regard-

ed as different subspecies under the names *M. b. squamigularis* and *M. b. badius* respectively, do not differ. As a consequence he has included Sumatra in the range of *squamigularis,* treating *badius* as a synonym. I have no reason to doubt Short's conclusion, but *M. b. badius* (Raffles, 1822) has 44 years priority over *M. b. squamigularis* (Sundevall, 1866), so that when the two are united, it is the former, not the latter, which becomes the valid name.

The generic classification of the woodpeckers is not yet final. Short (1973, 1982) has introduced a number of changes, one of them being that he has referred *Micropternus brachyurus* to the otherwise Neotropical genus *Celeus.* I am not quite convinced by the arguments Short (1982: 389, 392) has published, and which evidently have a very preliminary nature. Zoogeographically it would make more sense to link *Micropternus* with other south-east Asian genera of unclear affinities, like *Hemicircus, Blythipicus* and *Reinwardtipicus,* and pending a more comprehensive treatment of the genera, I am in no hurry to change the classical nomenclature.

Meiglyptes tristis micropterus Hesse

Miglyptes tristis micropterus Hesse, 1911, Orn. Mber. 19: 182. — Borneo, Gt. Natuna. Type said to be from Mt. Dulit, 1000 feet (cf. Peters, 1948: 182).
Meiglyptes grammithorax microterus Oberholser, 1912, Smiths. Misc. Coll. 60 (7): 6. — Telok Bluku, Nias Island.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 10); ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 11).

Meiglyptes tukki tukki (Lesson)

Picus tukki Lesson, 1839, Rev. Zool. 2: 167. — Sumatra.

Material. — ♂, 20.VI. 1904, Tanjong Pamuja (Abbott & Kloss, USNM no. 180490).

Hemicircus concretus sordidus (Eyton)

Dendrocopus sordidus Eyton, 1845, Ann. Mag. Nat. Hist. 16: 229. — the Malay Peninsula.
Hemicercus coccometopus Reichenbach, 1854, Handb. spec. Orn. (XII), Scansoriae, C. Picinae: 401, pl. DCLVI fig. 4364-65. — Sumatra and Celebes = Sumatra.

Material. — ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 11); ♂, 12.IV.1872 (Vosmaer, RMNH cat. no. 8); ♀, 13.IV.1872 (Vosmaer, RMNH cat. no. 9); ♂, 7.VII.1872 (Vosmaer, RMNH cat. no. 10).

Lacking material from Malaya, I have accepted Short's (1982: 528) statement that *coccometopus* is a synonym of *sordidus* without personal investigation.

Dinopium rafflesii rafflesii (Vigors & Horsfield)

Picus Rafflesii Anon. = Vigors & Horsfield, 1830, in Lady Sophia Raffles, Mem. Life Sir T. S. Raffles: 669. — Sumatra.

Material. — ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 3); ♂, 1.VI. 1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180479); ♀, middle V.1905, Simpang (Hagen, ZSM); ♂, late V.1905, Simpang (Hagen, ZSM); ♂, 15.VI.1905, Simpang (Hagen, ZSM).

The female collected by Teysmann has a wing-length of 146 mm; for Hagen's birds I measured ♂ 141, 144 mm, ♀ 141 mm. These measurements are large, and place the birds definitely in the nominate race. Birds from Borneo, *D. r. dulitense* Delacour, average a little smaller.

Dryocopus javensis javensis (Horsfield)

Picus Javensis Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 175. — Java.

Material. — ♀, not dated (Buddingh', received in 1866, RMNH cat. no. 7); ♂, 12.VI.1873 (Vosmaer, RMNH cat. no. 8); 2♀, 21.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM, nos. 180472, 180473); ♂, ♀, 31.V.1905, Simpang (Hagen, ZSM); 2♀, 1.VI.1905, Simpang (Hagen, ZSM).

Chrysocolaptes lucidus indomalayicus Hesse
(fig. 3; table 7)

Chrysocolaptes guttacristatus indo-malayicus Hesse, 1911, Orn. Mber. 19: 182. — Südliches Vorderindien, Insel Salanga. The type is from Salanga.
Chrysocolaptes strictus chersonesus Kloss, 1918, Ibis (10) 6: 113. — Singapore Island . . . and . . . the coast of Johore opposite.

Material. — ♂, 23.X.1872 (Vosmaer, RMNH cat. no. 6).

Although this specimen has been in our collection for well over a century, the occurrence of *C. lucidus* on Bangka had not yet been recorded in literature. It bridges the large gap in known distribution of the several popula-

tions assigned to the subspecies *chersonesus* (previously known from Johore and Singapore, Riouw, northern Sumatra and the north coast of West Java).

The specimen induced me to make a closer study of the subspecies *chersonesus* and of the subspecies *strictus,* both of which inhabit Java. First about the validity of *chersonesus:* as predicted by Robinson (1917: 162), this form was separated from *C. l. guttacristatus* on the basis of smaller size: "An adult male from Singapore Island has a wing of 143 mm., and another from the coast of Johore opposite measures in wing 146, while its bill is also considerably shorter than those of northern examples — in fact, these are altogether smaller birds" (Kloss, 1918). In the same article, Kloss dismissed as invalid *C. guttacristatus indo-malayicus* Hesse (1911) which had been diagnosed as differing from *guttacristatus*: "durch kleinere Flügel . . . 151-160 mm, bei der typischen Form 165 bis 177 mm". The type-specimen of *indomalayicus* is from Salanga Island, Malay Peninsula. Kloss has been generally followed, but the measurements I took from our specimens from Java are larger than those reported by Kloss for the two type-specimens of *chersonesus,* and agree perfectly with the measurements provided by Hesse for *indomalayicus,* viz., wing of 7♂ 152-165 mm, of 4♀ 150-161 mm. The specimen from Bangka has a wing-length of 152 mm. Birds from the Deli coast may be a trifle smaller and more in agreement with Kloss's specimens: 5♂ 146-154 mm, ♀ 147 mm. The largest male has very worn wing-tips and in fresh condition its wings would have been several mm longer than 154 mm. According to Chasen (1931), 3♂ from Bintang, very near Singapore, measured 153, 154, 156 mm. For specimens from Salanga or Phuket, the type locality of *indomalayicus,* Müller (1882: 61) gave a wing-length of 150-160 mm, and Kloss himself mentioned for birds from the northern Malay Peninsula 148-157 mm.

Not all subsequent authors have followed Kloss in regarding *indomalayicus* as a synonym of *guttacristatus.* Deignan (1963: 94), unfortunately without giving reasons, listed birds from peninsular Thailand under this name. Apparently, and unlike his predecessor in Washington, Riley (1938: 235-236), he considered them to be sufficiently different from birds of the other parts of Thailand (which he called *guttacristatus*) to be regarded as a separate subspecies. I do not believe, however, that either he or anybody else has ever questioned the validity of *chersonesus.*

When Kloss named the subspecies *chersonesus,* he believed that there was a large distributional gap, as well as an ecological gap, between *guttacristatus* (south to Langkawi, mainly an inland species) and *chersonesus* (south coast of Johore and Singapore Island, confined to mangrove forest). In recent years it has become apparent that this whole concept is erroneous: in the northern Malay Peninsula the species also inhabits mainly mangroves and islands (Koh

Samui, Phuket, Terutao, Langkawi)*), and records from Tanjong Belanak (Perak), Kuala Selangor, and Rantau Panjang (Selangor), suggest that along the west coast of Malaya it occurs wherever suitable habitat in the form of mature mangrove forest is available. An early record from Selangor is provided by a female from Batu, Selangor coast, collected in November 1906 by H.C. Robinson (or one of his collectors). This bird went to Tring and is now AMNH no. 552423; apparently it was forgotten by Robinson (1927: 157) himself, so that Kloss's erroneous idea of a large distributional gap could go unchallenged for another forty years.

In summary: there are neither morphological, nor ecological, nor geographical grounds for maintaining *chersonesus* as distinct from *indomalayicus,* and quite conceivably both ought to be united with *guttacristatus.* I have not been able to study adequate continental material, but mainly on the basis of the measurements supplied by Abdulali (1975) it seems to me that *indomalayicus* should at least provisionally be retained on the basis of slightly smaller size than *guttacristatus.* Short (1982: 504) added that "*chersonesus*" is more olive backed than *guttacristatus,* a character not borne out by the admittedly insufficient material available to me.

Short (1973: 330-332 and 1982: 504) has recorded a difference in voice between birds from Malaya and birds from Thailand, an interesting matter requiring further investigation, especially now that it has become clear that "*chersonesus*" is not an isolate. A difference in voice alone is not, of course, a reason to separate subspecies, at most it may be used as an additional character to strengthen a case based on morphology.

In general, Short's opinion and mine do not diverge much: we agree that the smaller birds from Malaya and the Sunda Islands deserve nomenclatural separation from the large birds inhabiting the Himalayas. We only differ in that I do not believe the smaller south-easterly population to be an isolate, and that I would extend its range up into the Malay Peninsula, and perhaps farther, so that it encompasses the type-locality of *indomalayicus* which therefore must replace *chersonesus* as its valid name.

The only specimen from continental south-east Asia examined by me, an adult male from Nikhe, Thailand, does not exceed material of *indomalayicus* in wing-length, but has a rather large bill. This specimen is unusual in that its crest is of a lighter red than in both *indomalayicus* and the few available specimens from Nepal and the Himalayas (which are in this respect identical with *indomalayicus*). Moreover, its wing-coverts and the feathers of its upper

*) Also Ko Libong (Eve & Guigue, 1983) and even Ko Surin Tai, over 50 km out from the mainland (Brockelman & Nadee, 1977).

back are edged with red, something not shown by any other specimen and presumably an individual peculiarity. Riley (1938: 236) mentioned a similar individual from Sumatra, whereas none of the Sumatran specimens examined by me has it (one has a few red margins). In the specimen from Nikhe I measured a wing-length of 157 mm (Junge & Kooiman, 1951: 21, gave it as 159 mm), well within the range of *indomalayicus*.

As I mentioned above, the difference in measurements between *indomalayicus* and *guttacristatus* is slight, and it is likely that there is complete intergradation. I would hesitate, however, to follow Short, who synonymized *sultaneus* with *guttacristatus*, as the former is quite conspicuously larger (table 7).

Most authors have only a hazy idea about the distribution of "*chersonesus*". Even Short (1982: 501) describes its range in the following words: "Also isolated geographically from *guttacristatus* is *chersonesus* of Malaya, Singapore, Sumatra and associated islands, and central and western Java". Therefore I have considered it useful to supply a map of its distribution, to show that it is not isolated from *guttacristatus*, and in Java is confined to the extreme west.

In Java, all published records are from the coastal mangroves and the subspecies was believed to be confined to that habitat. Therefore it is worth recording that in 1948, when I lived in Gobang, on the rubber estate Land Tjibodas, I found *C. l. indomalayicus* a not uncommon permanent resident in the hills north-west of the village (150-450 m). They were usually seen in large *Albizzia*-trees. A male was collected and sent to the Museum Zoologicum Bogoriense, where Dr. van Bemmel identified it.

Besides *C. l. indomalayicus*, a very different form, *C. l. strictus*, inhabits Java. It is not a common species and much about its distribution and possible interaction with *C. l. indomalayicus* remains to be elucidated. Chasen (1935b: 150 footnote) summarized the position as then known to him in the following words: "There is broadly speaking a large overlap in the range of *gutticristatus* [meant is *chersonesus*] and *strictus* in Java but at present we prefer to retain both forms as subspecies of *lucidus: strictus* seems to be found only in the mountains; commonly in East Java and very rarely in West Java. *C. l. gutticristatus* is rare in Java and according to the information at our disposal seems to occur only on the coastland in the western half of the island: it is perhaps a recent arrival from Sumatra". Commenting on this, Bartels Jr (1939: 18) remarked that *C. l. strictus* does occur in the lowlands of West Java, although not in the mangroves of the north coast. He also mentioned that, whereas admittedly this form is uncommon in West Java, it is not as rare as Chasen surmised. It seems to me that the evidence now available is in

Table 7. Measurements of *Chrysocolaptes lucidus (guttacristatus* group).

sex	locality	date	wing	tail	tarsus	exposed culmen
C.l. sultaneus						
♂	Nepal	old coll.	179	103	33	52½
♀	"	"	183	92	34	51
♂	Himalaya	"	182	106	34	52
♀	"	"	186	99	34	48+ (tip damaged)
C.l. indomalayicus						
♂	Nikhe, Thailand	25. V.1946	157	79	31	44½
♂	Saentis, Deli, Sumatra	12. V.1912	154+	77	31	42
♂	Poeloe Sitjanang, Deli	12. X.1915	152	76	30	42
♂	"	26. XI.1915	152	76	29	40
♂	"	16. XII.1916	146	78	28½	37
♀	"	14. X.1915	147	73	29	37½
♂	Bangka	23. X.1872	152	75	31	38
♂	Java	old coll.	155	78	31	43¾
♂	"Sumatra" = Java	"	155	78	31	44½
♂	near Poerwakarta	ca. 1865	152	78	29½	43
♂	Moeara Gembong	30. III.1923	157	79	31	43¾
♂	"	31. III.1923	157	75	32½	44
♂	Tandjong Pasir	25. VI.1924	165	83	32	43
♂	near Batavia	22. II.1927	155	75	30	41½
♀	Moeara Boengin	16.VIII.1908	150	75	32	42¼
♀	Kali Tjiseloeng	15. VI.1915	157	88	33	45
♀	Moeara Gembong	31. III.1923	157	78	30	40
♀	"	"	161	72	31	40

Note: The five specimens from Sumatra are ZMA nos. 3769-3772 and 10261; all other specimens RMNH.

favour of *strictus* being not conspecific with *C. l. indomalayicus*. As, however, proof either way is not yet available, the form may for the moment stand as *C. l. strictus*.

Hoogerwerf (1963b) has separated specimens from the Kangean Islands under the name *kangeanensis*. Enigmatic is his statement that: "Some birds from East Java are in plumage somewhat intermediate between representatives of *strictus* from West Java and the Kangean population but they seem closer to the latter race". I read in this that birds from East Java are closer to birds from Kangean (*kangeanensis*) than to birds from West Java, and that is also the interpretation Short (1982: 501) has given it: "Eastern Java forms the range of *strictus* that grades into *kangeanensis* (coastal eastern Java), a form found mainly in adjacent Kangean Islands and Bali". Note that Short restricts the range of *strictus* to eastern Java and ignores its occurrence in the western part of the island. Hoogerwerf mentioned that he had examined "about 15" specimens of *strictus* in the Bogor and Leiden museums. As our collection alone has 17 specimens, Hoogerwerf's comparison must have been based mainly on our material, which includes specimens from western Java and from eastern Java, both coastal (Bandialit Bay, sea level) and inland (Ngadiwono, 2300 m). Contrary to Hoogerwerf and Short, I am unable to discern any significant variation in this material. Moreover, if eastern Java is believed to be inhabited by a subspecies different from that of western Java, Horsfield's type specimens (in the British Museum) ought to have been studied as they are more likely to originate from eastern than from western Java. I have also examined the specimen from Bali assigned to *kangeanensis* by Short, the only specimen known from Bali (♂, ZMB no. 26.131) and found it to agree perfectly with *strictus*, except that its wing is rather short (140 mm). The bird seems subadult or perhaps even immature and that would explain its somewhat small wing-length. Actually I suspect that Hoogerwerf made an error and intended to say that birds from eastern Java are closer to *strictus* than to *kangeanensis;* otherwise, the fact that in the table of measurements he included all birds from Java in *strictus* does not make sense. I have not examined material from the Kangean Islands, and therefore I cannot have an opinion on the validity of *kangeanensis*, but specimens from East Java and Bali are evidently *strictus* and not *kangeanensis*.

In Borneo, the species is represented by the little-known *C. l. andrewsi*, which is very similar to *C. l. indomalayicus* but is browner on the under parts, as stated by Amadon (1943) in its description. Short (1982: 504) also claims it to be "larger then adjacent *chersonesus*", but the one specimen examined by me (♀, 4.I.1910, Sebattik Is., AMNH no. 110983) has wing 157, tail 81, tarsus 29¾, bill 42 mm, which agrees with specimens of *indomalayicus* from

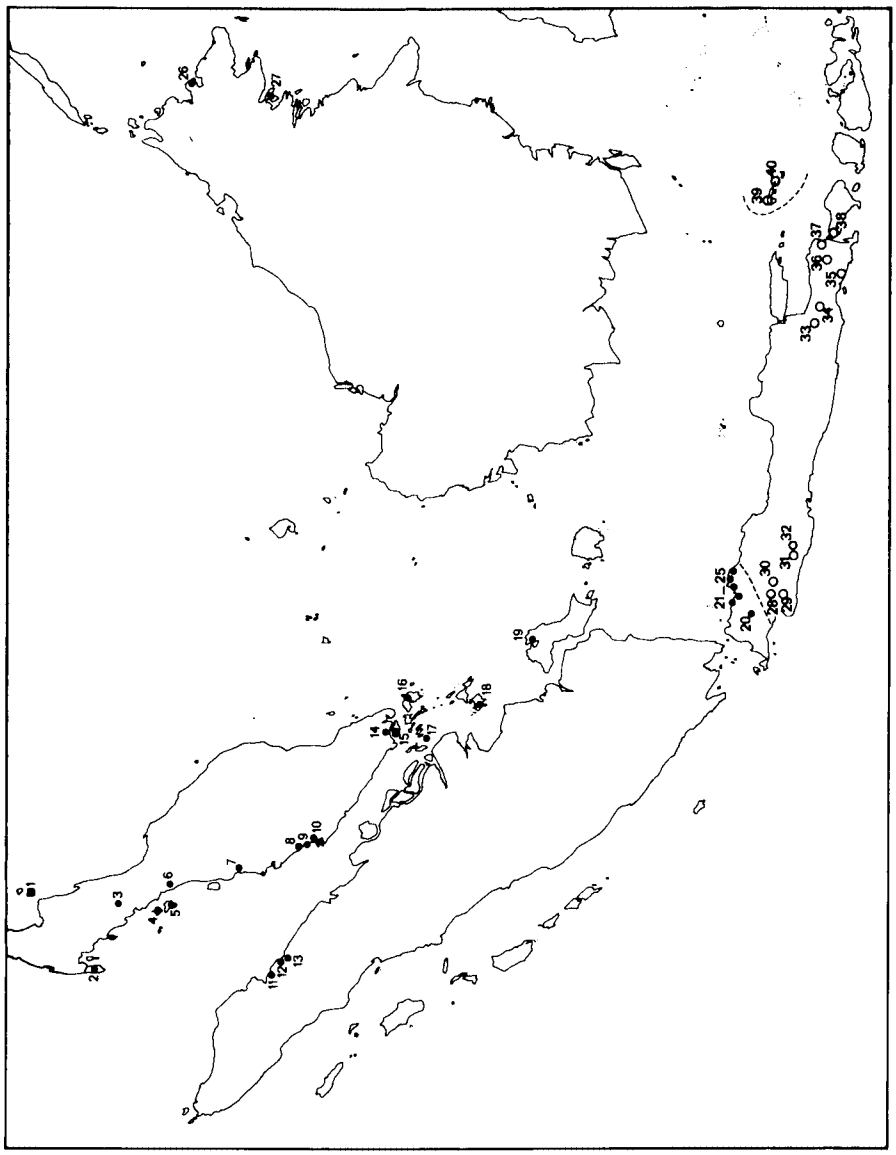

Fig. 3. — The Malaysian distribution of *Chrysocolaptes lucidus. C. l. indomalayicus:* 1, Ko Samui; 2, Phuket = Salanga; 3, Chong; 4, Terutao; 5, Langkawi; 6, Perlis; 7, Tanjong Belanak; 8, Kuala Selangor; 9, Batu; 10, Rantau Panjang; 11, Saëntis; 12, Poeloe Sitjanang; 13, Pangkalanbrandan (Stresemann, 1921a); 14, Si Karang (Robinson, 1919); 15, Singapore (records from Woodlands and Changi); 16, Bintang (Chasen, 1931); 17, Doerian (Siebers in Dammerman, 1926: 307); 18, Singkep (c/2 eggs, RMNH no. 73389); 19, Blinjoe; 20, Gobang; 21, Tandjong Pasir; 22, Djakarta = Batavia; 23, Moeara Gembong; 24, Moeara Boengin; 25, Kali Tjiseloeng.
C. l. andrewsi: 26, Sandakan; 27, Sebattik (Amadon, 1943).
C. l. strictus: 28, Pangerango; 29, Pasir Kananga; 30, Tjihea; 31, Tjisaroeni; 32, Tjikoeraj (AMNH no. 552361); 33, Ardjoeno (AMNH nos. 552355, 552356, 552357); 34, Ngadiwono; 35, Bandialit-Baai; 36, Soember Wringin (this dot would also cover Tamansari and Sodong Jerok, listed by Robinson & Kloss, 1924: 278); 37, Badjoelmati (Robinson & Kloss, 1924, 278); 38, N. W. Bali.
C. l. kangeanensis: 39, Ardjasa; 40, Paliath (Hoogerwerf, 1963b).
Note: Most Malayan localities after Medway & Wells (1976: 247); localities in Sumatra and Java, when no reference is given, from specimens examined or discussed in the text.

Java and Sumatra. As *andrewsi* is only known from the extreme north-east of Borneo, 1500 km away from the nearest locality whence *indomalayicus* has been recorded, Short's word "adjacent" was not well-chosen. Admittedly one almost expects *andrewsi* to be much more widely distributed in Borneo.

Addendum on the identity of *Picus Peralaimus* Wagler. In a discussion of Sumatran *C. lucidus chersonesus,* Stresemann (1921b: 96) mentioned in a footnote: "Die javanische Rasse (*strictus*) scheint größere Dimensionen zu erreichen, denn ein ♂ des Münchener Museums — der Typus von *Picus Peralaimus* Wagler 1827 — mißt am Flügel 158 mm". However, the measurements I took from our material show that *strictus* is smaller, not larger (wing of 8♂ 140-149 mm, 8♀ 141-149 mm). On the other hand, the wing-length given by Stresemann is within the range of variation of *"chersonesus"*, and it was an obvious guess that the type had been misidentified and would belong to the latter form. In order to obtain certainty concerning this point, I wrote to Dr. Reichholf, who replied as follows: "Der Balg ist in der Sammlung von meinem Vorgänger Dr. G. Diesselhorst als *chersonesus* eingeordnet! Es scheint daher außer Zweifel, daß der Typus falsch bestimmt worden ist und das Belegstück zu *chersonesus* gehört".

The identity of this specimen leads to interesting complications: the name *peralaimus* has priority over *chersonesus* and *indomalayicus,* and also over *guttacristatus* (which dates from 1833). There is some temptation, now that the current name *chersonesus* has to be changed anyway, to go all the way, and substitute *peralaimus* for it. However, Wagler (1827: no. 93) mentions both *Picus goensis* Auct. and *Picus strictus* Horsfield in the synonymy of *P. peralaimus.* In addition, the description of the female: "Pileo aurantio", is taken from Horsfield and refers to *strictus.* Therefore *P. peralaimus* is a composite name and all three components are available for lectotype selection: *P. goensis* = *Chrysocolaptes festivus, P. strictus* = *Chrysocolaptes lucidus strictus,* and Wagler's own specimen from Java (and a second male in Paris). Having not made up my mind what would be the wisest course to follow, I refrain for the moment from lectotype-selection. The attractiveness of the last- mentioned option (to accept Wagler's specimen as type) is that, whatever the consequences for the nomenclature on the Asiatic mainland, it would firmly end any discussion about the subspecific position of the populations of the Malay Peninsula and the islands, which concern me primarily.

Chrysocolaptes validus xanthopygius Finsch

Chrysocolaptes xanthopygius Finsch, 1905, Notes Leyden Mus. 26: 34. — vom oberen Mahakam (Blu-u).

Material. — ♂?, 25.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180478).

The occurrence of this species on Bangka was mentioned by Riley (1938: 237).

Dendrocopos moluccensis moluccensis (Gmelin)

[Picus] moluccensis Gmelin, 1788, Syst. Nat. (ed. 13) 1: 439. — insulis Moluccis (errore!) = Malacca.

Material. — [♀], not dated (Vosmaer, received in 1874, RMNH cat. no. 53).

Eurylaimus javanicus harterti van Oort

Eurylaimus javanicus harterti van Oort, 1909, Notes Leyden Mus. 31: 209. — Deli, N. Sumatra.
Eurylaimus javanicus billitonis Kloss, 1931, Treubia 13: 295. — Billiton Island.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 6); ♂, ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. nos. 9, 34); ♀, 28.V.1872 (Vosmaer, RMNH cat. no. 7); ♂, 29.V.1872 (Vosmaer, RMNH cat. no. 8); ♂, ♀, IV-VII.1898, Soengailiat (Kannegieter, ANSP nos. 56355, 56356).

De Schauensee (1958: 286) observed that this species had not been recorded from Bangka before, but he overlooked van Oort's paper, in which Bangka is already mentioned.

It is quite apparent that at least the "two older" specimens with yellow under tail-coverts, supposedly from Padang, West Sumatra (♂ subad., ♀ ad.), and included by van Oort (1909) in *E. j. harterti,* are mislabelled and belong to the nominate race. Of the "two young specimens" I am not sure, lacking sufficient comparative material in the same plumage. It is a remarkable feat that van Oort, in spite of this misleading material, arrived at the correct conclusion and as, fortunately, he has indicated a holotype, the fact that his description is partly a composite does not affect the availability of *E. j. harterti.*

The subspecies *E. j. billitonis* was described as being intermediate between *E. j. harterti* from Sumatra and *E. j. brookei* from Borneo (cf. Kloss, 1931).

I have examined the type-specimen of *billitonis* (♂, RMNH no. 14037), and an adult female from Billiton collected by Vorderman. The male has the black pectoral band rather narrow, but not narrower than in several of our Sumatran males, and more distinct than in our two males from Borneo. The amount of plumbeous suffusion on forehead and throat is quite variable in birds from Sumatra and Borneo and does not appear to constitute a useful subspecific character. I consider that *E. j. billitonis* may safely be placed in the synonymy of *E. j. harterti.* Chasen (1937a: 221) already noted that "one or two skins from Sumatra" were exactly like Billiton birds, implying that *billitonis* was at most a very poorly-differentiated subspecies.

Eurylaimus ochromalus Raffles

Eurylaimus ochromalus Raffles, 1822, Trans. Linn. Soc. Lond. 13: 297. — Singapore and the interior of Sumatra, restricted to Singapore by Robinson & Kloss (1919: 15).
Eurylaimus ochromalus kalamantan Robinson & Kloss, 1919, Bull. Brit. Orn. Cl. 40: 15. — Saribas District, Sarawak.

Material. — ♂, 1859/1861 (v. d. Bossche, RMNH cat. no. 6); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180471); ♂, 7.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180470).

My findings about the supposedly smaller subspecies *kalamantan* agree entirely with those of Mayr (1938: 33) and Voous (1961: 154), so that a discussion is unnecessary.

Cymbirhynchus macrorhynchos macrorhynchos (Gmelin)

[Todus] macrorhynchos Gmelin, 1788, Syst. Nat. (ed. 13) 1: 446. — no locality; Borneo designated by Salvadori (1874: 425).
Eurylaimus lemniscatus Raffles, 1822, Trans. Linn. Soc. Lond. 13: 296. — the interior of Sumatra.
Cymbirhynchus macrorhynchos tenebrosus de Schauensee & Ripley, 1940, Proc. Acad. Nat. Sci. Philad. 91: 338. — Goenoeng Soegi, Lampongs.

Material. — 2♀ ad., ♀ im., 1859/1861 (v. d. Bossche, RMNH cat. nos. 7, 8, 9); ♀, 1869/1872 (Teysmann, received in 1877, RMNH cat. no. 13); ♂, 23.XII.1872 (Vosmaer, RMNH cat. no. 11); ♂, 10.III.1873 (Vosmaer, RMNH cat. no. 12); ♂, 11.III.1873 (Vosmaer, RMNH cat. no. 3); ♀, not dated (Vosmaer, received in 1874, RMNH cat. no. 10); ♂, 4.VII.1904, Tanjong Meng Kudu (Abbott & Kloss, USNM no. 180469); ♂, ♀, 2♀, middle V.1905, Simpang (Hagen, ZSM); ♂, late V.1905, Simpang (Hagen, ZSM).

De Schauensee & Ripley (1940: 337) mentioned that a Bangka bird examined by them was very large (wing 108 mm) — this would have been USNM no.

180469. Wings of the RMNH specimens are: ♂ 101, 102, ♀ 101, 102, 103, 104, 104, 105 mm. The same size-range was found by Parrot (1907: 218): five specimens, wing 101-105 mm, re-measured by me: 2♂ 102, 105, ♀ 103, 2♀ 103, 106 mm. De Schauensee & Ripley recorded for a series of 39 specimens from Borneo an average wing-length of 103.3 mm, for 5 specimens from the lowlands of south-eastern Sumatra (''*tenebrosus*'') an average wing-length of 103.1 mm. The 13 specimens from Bangka measured by me range from 101-106, average 103.2 mm, which is identical.

Subspecies of *Cymbirhynchus macrorhynchos* have been based mainly on the presence and extent of white spots on the inner webs of the tail-feathers. Birds from Bangka have white on three pairs of rectrices, although the white spot on the inner pair is sometimes very small. Chasen (1937a: 222) found also extensive white in the tails of specimens from Billiton, and therefore he (Chasen, 1935b: 156) included Bangka and Billiton, with eastern Sumatra and Malaya, in the race *malaccensis,* with large white spots, retaining Borneo and western Sumatra in the nominate race, with less white in the tail. Note that in this classification the nominate race has an interrupted range.

Mayr (1938: 33-34) did not agree with Chasen; he recognized one subspecies (*macrorhynchos*) from Borneo, one (*lemniscatus*) from the whole of Sumatra, with more white in the tail and with reduced orange spotting on the abdomen, and one (*malaccensis*) from Malaya.

The most ambitious attempt at subdividing the species was that by de Schauensee & Ripley (1940: 336-339). These authors restricted the range of the nominate race to Borneo and that of *C. m. malaccensis* to the southern part of the Malay Peninsula. In Sumatra, they recognized two subspecies, viz., *C. m. lemniscatus* and *C. m. tenebrosus.* The characters of *lemniscatus* were given in the following words: ''From *macrorhynchos* this race differs by having much more white on the tail and by the red of the under parts being of a somewhat darker shade''. The new subspecies *tenebrosus* was diagnosed as being: ''by the very dark red of the lower throat, ear-coverts and belly, . . . probably the most distinct race, differing from all other forms by this character. It is further distinguishable from birds from the rest of Sumatra by having practically no white in the tail''. As range for *tenebrosus,* the Lampong Districts in southern Sumatra were given, as range of *lemniscatus* the whole remainder of Sumatra. This classification was accepted by Peters (1951: 7).

Even from the descriptions and the table presented by de Schauensee & Ripley, it is evident that there is a considerable individual variation in the extent of white on the tail. In our large material from Sumatra (which includes a series from the south-eastern lowlands) and Borneo, differences in this

character, when viewed in series, are no more than average ones. In the shade of the dark red colour of the under parts I fail to discern any geographic variation at all: as the feathers are darkest at their tips, there is a tendency for birds which have been very well stuffed, to be less dark than lightly stuffed birds.

In my opinion, the range of the nominate race should be extended to include not only Borneo, but also Sumatra, Bangka and Billiton. In taking this decision, I feel supported by Voous (1961: 154), who noted that a series of specimens from Borneo was hardly different from a series from Deli, Sumatra.

Pitta megarhyncha Schlegel

Pitta megarhyncha Schlegel, 1863, Vogels Ned. Ind., Pitta: 11, pl. 4 fig. 2. — Bangka.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 1, type of the species); ♀, 12.IV.1872 (Vosmaer, RMNH cat. no. 2); ♂, 31.XII.1872 (Vosmaer, RMNH cat. no. 3).

In my opinion this is a separate species, not a subspecies of *P. moluccensis* (cf. Mees, 1971: 238).

Pitta sordida cucullata Hartlaub

Pitta cucullata Hartlaub, 1843, Rev. Zool. 6: 65. — Malacca.

Material. — ♀, III.1864 (Buddingh', RMNH cat. no. 9).

This specimen differs from other material of *P. sordida* from Bangka in that its crown is entirely brown, without any admixture of black. As *P. s. cucullata* is known to reach Malaya and Sumatra on migration, it is more likely to be a migrant visitor, than an extreme variant of the resident population.

The date given on the label seems to me suspect: Buddingh's other specimens have been collected between February 1865 and November 1866. The specimen has been mounted and according to the practice of the day the label was thrown away, and the data would have been written underneath the socle. About 1900 it was taken off its stand, which was thrown away, and the data copied on to a new label, by Finsch. Thus, there must have been ample opportunity for making a copying error, although it was in this case not Finsch who made the mistake, as Schlegel (1874: 6) already gave the date of collecting as March 1864. I presume that the date should read March 1865, but there is no definite evidence as to when Buddingh' arrived on Bangka.

Pitta sordida bangkana Schlegel

Pitta bangkana Schlegel, 1863, Vogels Ned. Ind., Pitta: 8, pl. 2 fig. 5. — Bangka.

Material. — 2φ, 1859/1861 (v. d. Bossche, RMNH cat. nos. 12, 13, syntypes of the subspecies); ♂, ♀, 28.V.1872 (Vosmaer, RMNH cat. nos. 10, 11); ♂, ♀, IV-VII.1898, Soengailiat (Kannegieter, ANSP nos. 56367, 56368); ♂, 11.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180467); ♂, ♀, middle V.1905, Simpang (Hagen, ZSM); ♀, late V.1905, Simpang (Hagen, ZSM, missing); ♀ juv., 16.VI.1905, Simpang (Hagen, ZSM).

There is variation in the amount of brown on the crown, suggesting that this subspecies has originated through hybridisation of *P. s. cucullata* and *P. s. mulleri.* The existence of these intermediate birds, geographically confined to Bangka and Billiton, is of particular interest and in my opinion warrants the use of a subspecific name for these populations. The material collected by Hagen was comprehensively treated by Parrot (1907: 219-223), and Chasen (1937a: 222) discussed a small series from Billiton.

Pitta sordida mulleri Bonaparte

Pitta mulleri Bonaparte, 1850, Consp. Gen. Av. 1: 256. — ex Celebes (errore!) = Borneo, nomen novum for *Pitta atricapilla* Müller & Schlegel (1845: 19).

Material. — ♂ 11.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180467).

The specimen has a jet-black head, without any admixture of brown. It agrees perfectly with specimens from Sumatra, also in extent of white on the wings. Whether the specimen actually is a vagrant from Sumatra, or represents an extreme in variation of the local hybrid population, with a morphologically "pure" appearance of one of the parent races, is a question that cannot be answered with certainty without much more material. It must be said, however, that in the complete absence of any suffusion of brown on the head, the specimen differs strikingly from all specimens of *bangkana,* notwithstanding the considerable amount of individual variation in that subspecies, to which I have already drawn attention. That individuals of *mulleri* from Sumatra may leave their forest habitat occasionally and cross water barriers is proved by a skeleton in our collection, prepared from a specimen found dead on the island of Anak Krakatau in Strait Sunda, on 22.VI. 1955. The nearest distance from this island to the Sumatran mainland is 50 km, to Java 60 km. Bukit Permisan, on the other hand, where the Bangka specimen of *mulleri* was collected, is right opposite the Sumatran coast less

than 20 km away. I am therefore inclined to regard the specimen as a genuine visitor from Sumatra.

Motacilla flava simillima Hartert

Motacilla flava simillima Hartert, 1905, Vögel paläarkt. Fauna 1: 289. — Brütet wahrscheinlich nur in Kamtschatka. — Sie zieht . . . und überwintert in China, auf den Molukken und im malayischen Archipel.

Material. — ♂ ad., not dated (Buddingh', received in 1865, RMNH without number).

The wing-length of this specimen is 81 mm. It is surprising that no other collector has obtained this species, which is a common winter visitor to the region (cf. Voous, 1950a). Of course, Abbott, Kloss, and Hagen worked on Bangka in a season when no migrants are to be expected.

Lalage nigra subsp.
(fig. 4)

Material. — ♂, 2♀ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 7, 8, 9); ♂ im., 1.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180554); ♂, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180553).

The nomenclature of this species is confused. Smythies (1957: 693-694 and later publications) refers birds from Borneo to the nominate race, whereas Mayr (in Peters, Mayr & Deignan, 1960: 198) includes Borneo in the range of *L. n. chilensis.* The controversy is only one of nomenclature: whether one accepts Stresemann's (1952: 520) suggestion that the type-locality of *L. nigra* is Manila; the authors mentioned agree that birds from Borneo belong to the Philippine subspecies and not to the subspecies inhabiting Java, Sumatra and Bangka. This classification was based on an article by Kloss (1926), who, however, left the subspecific identity of birds from southern Borneo in doubt. As it is an unusual situation that birds from Java and Sumatra agree, but differ from birds from southern Borneo, which in their turn belong to the Philippine subspecies, I considered that a further investigation was required, for which I believed optimistically that sufficient material was available to me.

As regards the type-locality of *Lalage nigra,* only one line of investigation is not yet exhausted: Brisson mentioned for it the native name "Terat-Boulan". It occurred to me that if Stresemann was right in his claim that the type came from Manila, it would be just possible that the vernacular name

might still mean something in the neighbourhood of Manila. I have tried to obtain information on this subject from the Philippines, but no reply has been received. On the other hand, whereas the name "boulan" is suggestive of Malay, I cannot place the word "terat" as Malay, so that the name does not support the other suggested type-locality, Singapore, either. It is bad practice anyway, to restrict a type-locality to a place that did not yet exist when the specimen was collected, as Bangs (1922: 80) did in this case, claiming: "Singapore, being as likely as anywhere else to have been whence the type actually came".

The few specimens from Borneo I have examined, confirm that birds from that island must be associated with the Philippine subspecies (grey females), rather than with the Java-Sumatra-Bangka one (brown females).

Inevitably I came also to study material from Java, and I was surprised to find that the whole basis for treating *nigra* and *sueurii* as different species (as generally accepted in recent literature) is a remark by Mayr (1940): "as the ranges of *nigra* and *sueurii* seem to overlap without inter-breeding, it will be better to keep them as two species". This was repeated a year later by Mayr & Ripley (1941: 4) in the following words: "The only other place where the two species meet is central Java, but unfortunately, nothing is known about their relations in that region. Do they intergrade imperceptibly, do they hybridize, do they represent each other ecologically, or do they live side by side like good species?". I fail to see that this is a firm basis for treating the two very similar forms as different species. Hoping to be able to shed more light on the relationship, I have mapped the distribution in Java (fig. 4) and found that there is a large gap in eastern Java from which neither species has been recorded, although there is no reason to suppose that both are absent from that region.

In this connexion, it may not generally be appreciated how little is known of *L. sueurii* in East Java. It was only added to the avifauna of Java in 1917, when Bartels obtained a small series at Soember Wringin, Raoeng. He published the record a few years later (Bartels, 1921), with the remark: "Bisher nur vom Berge Raoeng (Ost-Java) erhalten; aber auf der Reise dorthin auch an anderen Oertlichkeiten in Ost-Java beobachtet". As those other localities are not specified, Bartels's remark does not contribute to further knowledge of the distribution. Kuroda (1933: 187) referred to breeding in Kediri and Soerabaja, based on Bartels (1902: 158 and 1906: 392), but Bartels included these records under *Lalage terat* (= *L. nigra*) and clearly Kuroda has placed them under *sueurii* only on geographical grounds, after it had become known that that is "the" form occurring in East Java. He did also misread Bartels's remark on nesting, which pertained to West Java, not to Kediri and

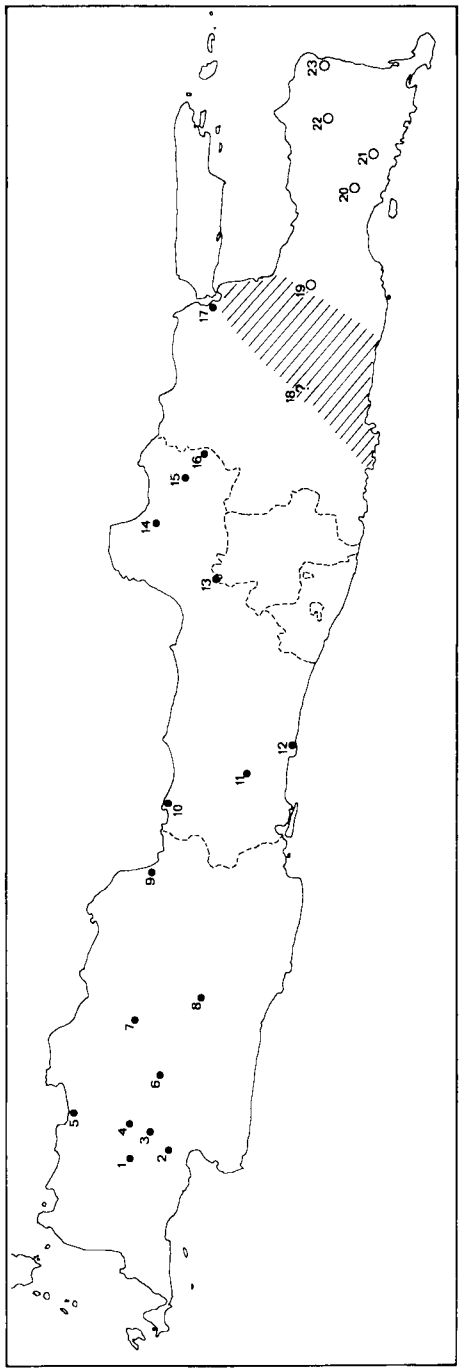

Fig. 4. — The distribution of *Lalage nigra/sueurii* in Java. Hatched is the area, where either co-occurrence or intergradation is to be expected. *L. nigra* (dots):1, Bolang; 2, Halimoen; 3, Gadok; 4, Bogor = Buitenzorg; 5, Djakarta = Batavia; 6, Pangerango; 7, Poerwakarta; 8, Banjaran; 9, Cheribon; 10, Brebes; 11, Poerwokerto; 12, Karangbolong; 13, Gadangan; 14, Pati; 15, Poerworedjo; 16, Tjepoe; 17, Grissee. Species or subspecies uncertain: 18, Kediri.
L. sueurii (circles): 19, Ngadiwono; 20, Klatakan; 21, Dampar; 22, Soember Wringin; 23, Badjoelmati.
Note: In West Java, not all localities from which *L. nigra* has been recorded are shown.

Soerabaja. There is no material from these two localities in the Bartels collection and if Bartels had possessed specimens before 1902, he would scarcely have published a note in 1921, in which he expressly states that *sueurii* was known to him from the Raoeng only.

The material of *L. sueurii* from Java available to me consists of nine specimens collected by Bartels at Soember Wringin, Raoeng, in 1917, and four specimens collected by Kooiman at Klatakan and Dampar, in 1939 and 1941. Additional locality records are Badjoelmati (Robinson & Kloss, 1924: 282) and Tengger (Hoogerwerf, 1948: 129). Specimens of *L. nigra* are available from Gedangan, Pati, Poerworedjo and Tjepoe. A single specimen from Grissee (leg. Vorderman) is little more than a fledgling, but appears also to be *L. nigra.* Of particular interest would be the specimen or specimens from Ngadiwono, on the western slope of the Tengger Mountains, but I have failed in my attempt to borrow it or to receive additional information on it. The distribution of both forms in Java as at present known, contributes nothing to a solution of the question whether *nigra* and *sueurii* are conspecific or not. In this connexion I cannot resist the temptation to draw a parallel with *Chrysocolaptes lucidus*: there also, Java is inhabited by two forms, of which one has a very restricted distribution, whereas the other is widespread. The morphological differences between the two forms of woodpecker are much greater than those between the two forms of *Lalage.* Nevertheless, and for purely subjective reasons, the two forms of woodpecker are regarded as conspecific, the two forms of *Lalage* as different species.

The situation in the Celebes is clearer: there appears to be no doubt that *L. leucopygialis* and *L. sueurii* co-occur in the southern peninsula and therefore are different species. Stresemann (1940: 127) treated *sueurii* as a subspecies of *L. nigra,* and called *L. leucopygialis* "eine rundum abgeschlossene Art", of uncertain origin and relationships. Mayr & Ripley (1941) drew attention to the similarity between *L. leucopygialis* and the Philippine subspecies of *L. nigra,* and suggested that the former had been derived from the latter, and that Stresemann had been led astray: "by some of the specializations (white rump, black cap of female) which this species has evolved during a long period of isolation on Celebes". So far, I agree with Mayr & Ripley, but I hesitate to follow them in their conclusion that therefore *L. leucopygialis* stands in subspecific relationship to *L. nigra.* Judging by plumage characters, *L. sueurii* is closer to *L. nigra* than *L. leucopygialis* is. If *L. sueurii* is accorded specific status, it would be illogical (in the absence of biological evidence) to deny it a priori to *L. leucopygialis.*

Considering the one established fact: that *L. leucopygialis* and *L. sueurii* do not interbreed where they meet, hence are not conspecific, the following possibilities exist:

1) *L. leucopygialis* and *L. nigra* are conspecific, *L. sueurii* is a different species (Mayr & Ripley's solution).
2) *L. sueurii* and *L. nigra* are conspecific, *L. leucopygialis* is a different species (Stresemann's solution).
3) *L. sueurii, L. nigra* and *L. leucopygialis* are three different species.
4) Theoretically there is still a possibility that *L. nigra* is a ring-species, *L. leucopygialis* and *L. sueurii* overlapping at one end of the ring, but connected through *L. nigra.*

For reasons already given, I do not like solution 1, whereas solution 4 is on the basis of the available evidence far-fetched. The choice between solutions 2 and 3 depends on what happens in East Java. Solution 3 may well be the correct one, and in this connexion it is interesting that recently an Australian ornithologist has even further dismembered the group by separating the Australian form *tricolor* from *L. sueurii* (cf. Schodde, 1982: 204, 205, 216). The final step would be to separate specifically the Philippine-Borneo from the Java-Sumatra populations, which have quite a different female plumage; I am sure that, sooner or later, somebody will take it.

Pericrocotus flammeus xanthogaster (Raffles)

Lanius xanthogaster Raffles, 1822, Trans. Linn. Soc. Lond. 13: 309. — Sumatra.

Material. — 2♂, ♂ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 5, 6, 7); ♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 8); ♂, 11.V.1905, Simpang (Hagen, ZSM); ♂, middle V.1905, Simpang (Hagen, ZSM).

Pericrocotus cinnamomeus igneus Blyth

P[ericrocotus] igneus Blyth, J. As. Soc. Bengal 15: 309. — Malacca.

Material. — ♂, 7.VII.1872 (Vosmaer, RMNH cat. no. 10); ♂, 10.X.1872 (Vosmaer, RMNH cat. no. 11); ♀, not dated (Vosmaer, received in 1874, RMNH cat. no. 9).

Hemipus hirundinaceus (Temminck)

Muscicapa hirundinacea Temminck, 1822, Recueil d'Ois. 3 (livr. 20): pl. 119 fig. 1, 2. — Java.

Material. — ♂, 4.IV.1873 (Vosmaer, RMNH cat. no. 9).

Pycnonotus eutilosus (Jardine & Selby)

Brachypus eutilosus Jardine & Selby, 1837, Ill. Orn. (n. s.) 1: pl. 3. — Singapore Island (reference not verified).

Material. — ♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 8); ♀, 6.VII.1872 (Vosmaer, RMNH cat. no. 4).

These specimens have been recorded previously by Büttikofer (1896b: 246, s. n. *Pinarocichla euptilosa*) and Finsch (1905: 94-96, s. n. *Poliolophus euptilosus*).

Pycnonotus atriceps atriceps (Temminck)

Turdus atriceps Temminck, 1822, Recueil d'Ois. 2 (livr. 25): pl. 147. — îles de Java et de Sumatra; the figured bird is from Java.

Material. — ♂, 1859/1861 (v. d. Bossche, RMNH cat. no. 15); ♂, 1861 (v. d. Bossche, RMNH cat. no. 16); ♂, 27.X.1872 (Vosmaer, RMNH cat. no. 17); ♂, 4.II.1873 (Vosmaer, RMNH cat. no. 18); ♂, ♀, 22.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM nos. 180558, 180559).

Pycnonotus goiavier analis (Horsfield)

Turdus analis Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 147. — Java.
Otocompsa personata Hume, 1873, Stray Feathers 1: 457. — Acheen.

Material. — 3♂ ad., ♂ im., 2♂ juv., 1859/1861 (v. d. Bossche, RMNH nos. 7-10, 10a, 10b); ♂, middle V.1905, Simpang (Hagen, ZSM).

On its label, Hagen's specimen is dated middle of May, not middle of June as published by Parrot (1907: 238) and for its wing-length I measured 90 mm, not 87 mm.

The populations of this common species inhabiting Java, Sumatra, Malaya, Borneo, and the surrounding smaller islands, had been regarded as consubspecific until Chasen & Kloss (1930: 66) introduced a division into three subspecies on the basis of the following characters: "Bornean birds never have the superciliaries pure white but always clouded with brown, especially posteriorly; they also have the ear-coverts uniformly pale brown. The Javan race, *analis,* has the superciliaries rather whiter and also has the anterior ear-coverts whitish. Malayan and Sumatran birds, which are *personata* Hume (Acheen, N. Sumatra), are yet much whiter on the superciliaries and ear-

coverts. The squamations on the breast of the Bornean race are especially heavy". Although here it is stated that birds from Sumatra are "much whiter" on the sides of the head than birds from Java, and that birds from Java are "rather whiter" on these parts than birds from Borneo, from which it may be deduced that the difference between birds from Sumatra and from Borneo must be particularly striking, only a few years later Chasen (1937a: 226) remarked: "Birds from Sumatra and Billiton seem alike: those from Borneo are very slightly different (*gourdini*)". About birds from Krakatau, between Java and Sumatra, Chasen (1937b: 251) has also something to say: "When birds from Sumatra (*personatus*) are compared with others from Central and East Java (*analis*) a difference is at once obvious: the former have whiter superciliaries and ear-coverts. The distinction, however, is less noticeable when *personatus* is compared with material from West Java and in a minority of cases I can make no separation. The Krakatau-group series includes some very white-headed birds such as seem never to occur in Java and is therefore referred to the Sumatran race". Discussing bird-colonists from Krakatau, Dammerman (1948: 266-267) remarked that: " . . . in the forms of *Pycnonotus goiavier* and *Leptocoma jugularis* the differences between the Javanese and Sumatran subspecies are so minute that it is doubtful whether the two races can be maintained". Voous (1961: 159) observed that: "Among the Malaysian populations, Bornean birds have the upper parts darkest brown. The superciliary line and the sides of the face are tinged with grey, not pure white, as in Sumatra (*personatus*)". Note that Voous introduced another character, not mentioned by previous authors: the colour of the upper parts.

Material from the three islands (Java, Sumatra, Borneo) is well-represented in our collection. An examination of this material leads me to agree that *gourdini* is a tenable race, on the basis of the pale grey (only rarely white) supercilium, the slightly darker upper surface, and the more pronounced spotting of the breast, compared with birds from Java and Sumatra. In spite of remarks made by Hoogerwerf (1963a), I agree with Dammerman that a majority of specimens from Sumatra is indistinguishable from specimens from Java, so that I regard *personatus* as a synonym of *analis*. Neither does my material support Chasen's contention that there is a difference between birds from West Java and birds from East Java.

Our collection contains two male paratypes of *P. g. karimuniensis* and, as pointed out by Hoogerwerf (1963a), these specimens agree in plumage with *gourdini* and not with *analis* from Java, to which the Karimundjawa Islands are so much nearer. The wings of these two birds measure 88 and 91 mm. Specimens from Borneo in our collection have wings of up to 93 mm (a length attained by four specimens). There seems little reason to retain *karimuniensis*

on the basis of larger size and in my opinion *karimuniensis* must be united with *gourdini*. The validity or otherwise of *karimuniensis* does of course detract in no way from the zoogeographical interest this population has as an outpost of the Bornean subspecies so close to Java; indeed, it adds to it.

In the period between February and July 1946, Mr. de Raadt (in litt., 5.II.1983) lived at Koba on the east coast of Bangka. There was along the beach a dense growth of *Casuarina equisetifolia, Calophyllum inophyllum, Pandanus* sp., and *Scaevola frutescens*. The last-mentioned species is a shrub making particularly dense growth. In this brushwood, each evening, large numbers of *Pycnonotus goiavier* collected, to spend the night communally. Mr. de Raadt made similar observations on communal roosting in Sumatra, at Palembang, where he spent his internment during the Japanese occupation. His observations are as follows: June 1943: Towards the evening, from the moment of sunset to twilight so deep that recognition became difficult, a stream of bulbuls came from a westerly direction into the town, from time to time resting in trees along the route. The groups passing along were normally from 4-7 individuals, but up to between 20 and 30; the whole stream counted at least 126 birds. A few days later, late in June or early July 1943, another evening count was made: 141. Migration took also place in the mornings, but was then much less conspicuous. Nevertheless, on 23.X.1945, Mr. de Raadt made an observation of movements in the morning in the same town, in which numbers exceeded those noted previously: A large stream of bulbuls passed, coming from the NE and moving to the SW. The migration began at 5.55 hrs and at 6.20 only 28 individuals had passed, but at 6.30, 401 had already passed and migration continued with this increased intensity to 6.35; at 6.50, altogether 512 individuals had passed. Mr. de Raadt suspected that the sleeping-place was a swamp with a dense cover of shrubs between the European and native parts of the town, but because of unsettled conditions then prevailing, he was unable to visit the place.

I know of a few records in literature that support Mr. de Raadt's observations. Siccama (in Hoogerwerf & Siccama, 1938: 87) mentioned how, on 9.II.1934, in a strip of forest along the coast near Batavia, Java, he saw numerous small groups of 5-10 individuals of this species, altogether some 80 birds, all fly past in the same direction. He was unable to give an explanation, but Bartels Jr. (1939: 20-21) commented on it, and suggested that Siccama's observation concerned birds that were going to roost, something that he himself had seen in south Bantam. The dormitory in Bantam consisted of dense scrub mixed with reeds (*Saccharum spontaneum*). In the mornings at sunrise they would spend some time singing communally, before leaving for their feeding places. Bartels mentioned somewhat casually that he had ob-

served a similar evening migration in *Pycnonotus bimaculatus barat.* The phenomenon of communal roosting in what one would assume to be sedentary and territorially-living birds, deserves further study.

Pycnonotus plumosus plumosus Blyth
(figs. 5, 6; tab. 8)

P[ycnonotus] plumosus Blyth, 1845, J. As. Soc. Bengal 14: 567. — Singapore.
Pycnonotus plumosus chiroplethis Oberholser, 1917, U. S. Nat. Mus. Bull. 98: 41. — Pulo Siantan, Anamba Islands.
Pycnonotus plumosus billitonis Chasen, 1935, Orn. Mber. 43: 148. — Billiton.
Pycnonotus plumosus sibergi Hoogerwerf, 1965, Bull. Brit. Orn. Cl. 85: 50. — Bawean.

Material. — 2♂, 1859/1861 (v. d. Bossche, RMNH cat. nos. 9, 10); ♀, 2.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180566); ♂, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180565).

Currently, the island of Bangka is included in the range of the nominate race of this bulbul, whereas Billiton is believed to be inhabited by a different subspecies, *billitonis*, which extends to western and southern Borneo*). As it is unusual for Bangka and Billiton to have different subspecies, I considered that a further study of the geographical variation in this region was desirable. In spite of its dull coloration, this species has attracted splitters. Besides colours of the plumage, the colour of the iris and measurements have been used for the discrimination of subspecies. Deignan (in Rand & Deignan, 1960: 248-249) recognized seven subspecies, and one has been added since.

As regards the plumage differences which several authors claimed that exist, it is rather depressing to read that: "specimens that have been stored in a museum for only a few years are useless for critical examination" (Chasen & Kloss, 1929: 115). This almost suggests that museum workers like I am, who have an old collection at their disposal, are per definition unable to contribute anything useful to knowledge of geographical variation, and therefore presumably should accept, without question, the classification introduced by the privileged few who have studied fresh material. I find it difficult to submit to this extreme point of view. Allowing that post-mortem discoloration occurs within a few years of collecting, would it be unreasonable to expect that birds which differ when fresh, would still be different after some years? I would ex-

*) This extension of range is apparently based on one specimen from the coast of S. E. Borneo, which Deignan considered inseparable from topotypical *billitonis* (cf. Smythies, 1957: 704).

pect that there is a difference between fresh specimens and old material, which one must beware of ascribing to geographical variation, but I do not see why old specimens should all become identical. To this can be added that changes occurring with such remarkable speed would also probably happen in life: that there might be a considerable difference between birds in worn plumage, which have been exposed to sunlight for six to eight months, and birds in freshly moulted plumage. Curiously enough, no previous revisor has mentioned this probability. Anyway, not having fresh material, I have been forced to rely on old material and in doing so, strange as it seems, may have taken a fresh approach to an old problem.

The significance of iris-colour was first pointed out by Chasen & Kloss (1926: 290): birds of western Sumatra and its islands have orange or yellow eyes, birds in the remainder of the species' range have brownish red or red eyes. As few of my Sumatran specimens bear an indication of iris-colour on their labels, I am unable to contribute to knowledge of the geographical distribution of the two colour types.

Differences in size between the various populations are slight. Stresemann (1938b) based *P. p. hutzi* exclusively on smaller size, compared with *P. p. insularis,* but Hoogerwerf (1965a) already remarked: "that the difference in wing size between *plumosus, hutzi* and *hachisukae* (= *insularis*) seems not very convincing", and I agree. Measurements of our material are provided in table 8.

Before discussing individual specimens, I want to make a general statement: quite differently from what previous authors had led me to expect, series of skins collected at various times in the past are reasonably uniform. Only specimens from the old collection which have been mounted, and therefore may be assumed to be dirty, look darker. The appearance of the under parts depends also on the make-up of a skin. In well-made skins, the centre of the belly is pale, the flanks are dark; skins which are poorly stuffed, or in which the dark flank-feathers are brushed over the pale centre of the belly, look at first sight considerably darker on the under surface than well-stuffed skins.

As Hoogerwerf's (1965a) paper is not only the most comprehensive one, but also the most recent, I find it convenient to begin with a critical discussion of the subspecies *P. p. sibergi* from Bawean, described by him. The material from Bawean available to me consists of four specimens: two birds collected by Vorderman in 1891, and two paratypes of *sibergi* collected by Hoogerwerf in 1954. This material is not extensive, but it is adequate to show that Hoogerwerf's surmise that birds from Bawean have long tails is not correct. As regards the supposedly slightly smaller bills: both of Hoogerwerf's specimens have the bill damaged and the tip missing, so that no measurements

Table 8. Measurements of *Pycnonotus plumosus*.

number/sex	wing	av. wing	tail	av. tail	tarsus	av. tarsus	entire culmen	av. entire culmen	exposed culmen	av. exposed culmen	
Borneo											
2 ♂	86, 86		68½, 71		19½, 19½		18, 18½		14, 14¾		
4 ♀	80-85	82.3	66-71	69.0	19-20	19.4	17½-19¼	18.2	14¼-15¼	14.7	
ø	78		66½		19		16¾		14		
Bawean											
♂	86		70½		19½		-		-		1)
♀	85		72		19		-		-		1)
2 ø	86, 87		72, 73		20, 20		16, 19	17.5	13, 15¾		
Billiton											
♂	83		69		19½		18		14		2)
2 ø	81+, 83		65¼, 69		18, 19		17½, 19		13½, 15		
Bangka											
2 ø	80, 82		67, 69		20, 20		17¼, 18		13¼, 14		
East Sumatra											
5 ♂	81-86	83.4	65-73	69.2	17½, 20½	19.3	16½-18¼	17.5	13½-15	14.2	
5 ♀	78-83	80.8	67-72	69.8	18-20¼	19.3	17-18½	17.8	13½-15	14.3	
Java											
20 ♂	83-89½	85.0	65-75½	71.8	18-21	19.9	17-19½	18.4	13¼-15½	14.4	
17 ♀	78-86	82.6	65-75	70.4	19-21	20.0	17-19¼	18.5	13½-15½	14.1	
5 ø	77-87		65-71		19¼-21		17-18½		14¼-15		

West Sumatra (presumed to be *porphyreus*)					
2 ♂	84, 87	70, 70	20, 20	18, 18	14, 15
♀	81	69	18½	18	13¾
Batoe Islands (presumed to be *porphyreus*)					
♂	87	71	20½	18	14½
Nias (presumed to be *porphyreus*)					
2 ♂	84, 85	68½, 69	19, 19	17½, 18¾	14¼, 14¾
2 ♀	82, 82	65, 67	18½, 18½	17, 17½	14, 14½

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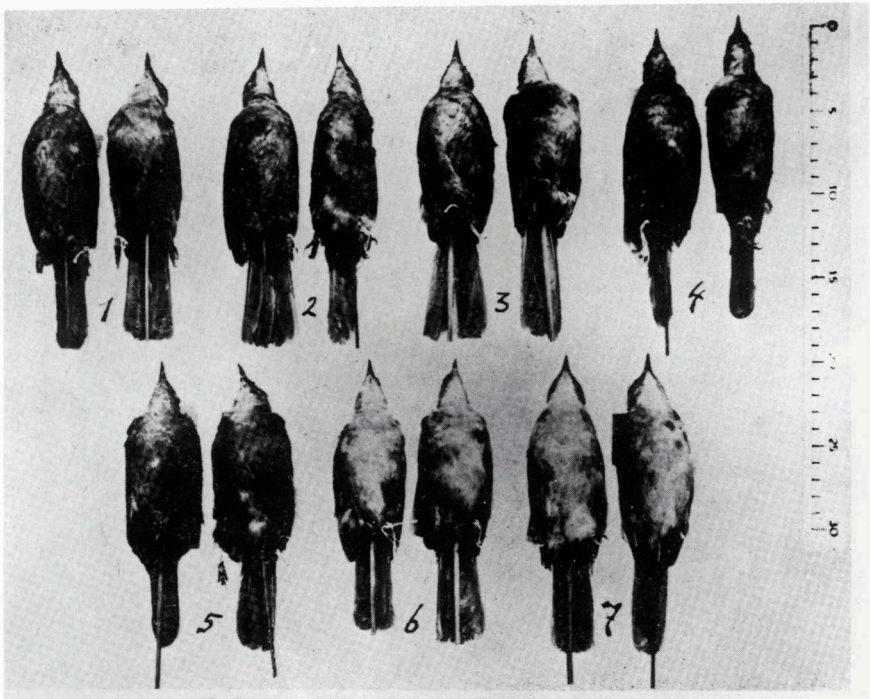
[1]) Paratype of *P. p. sibergi*.

[2]) Type of *P. p. billitonis*.

can be taken. Of Vorderman's specimens, one has a small bill, the other has a large bill, in the upper range of variation of birds from Java and elsewhere. The main character on which ***sibergi*** was based was, however, pale colour. The description is accompanied by a very convincing photograph, which shows that both fresh and old specimens of ***sibergi*** are almost white below, whereas birds from Sumatra are very dark on the under parts. The difference is, on the photograph, obvious at a glance. In contradistinction to this, on comparing our specimens from Bawean with material from other parts of the range of the species, I have been unable to perceive any difference at all. On the under parts, specimens from Java, Sumatra, Billiton, Borneo and Bawean appear to be absolutely identical. As Hoogerwerf figured both fresh and old



♂♀ *Pycnonotus p. plumosus* (freshly collected).
1. Udjung Kulon; 2. Prince's Island (Sunda Strait); 3. Sebesi Island (Sunda Strait); 4. South Sumatra; 6. Bawean Island, *Pycnonotus plumosus sibergi* subsp. nov.
♂♂ *Pycnonotus plumosus* (old material)
5. *Pycnonotus plumosus porphyreus:* West Sumatra; 7. *Pycnonotus plumosus sibergi* subsp. nov.

Fig. 5. — Hoogerwerf's (1965a) photograph of ***Pycnonotus plumosus,*** showing specimens from Java and Sumatra with dark under parts, specimens from Bawean with almost white under parts.

specimens from Bawean, and both groups look conspicuously pale, almost pure white on the photograph, this cannot be a matter of decolourization. I cannot explain what has happened. I would assume the specimens from Bawean to have been overexposed, those from Java and Sumatra underexposed, were it not for the fact that it looks as if all birds are on the one photograph, not on a montage of several.

P. p. billitonis was separated from *P. p. insularis* on the basis of having the: "Ohrdecken bedeutend blasser braun. Im allgemeinen etwas blasser, besonders auf den Brustseiten". No reference was made to the nominate race, to which birds from Billiton had previously been considered to belong.

I have compared our specimens from Java, Sumatra, Bangka, Billiton, Bawean and Borneo, and, allowing for a certain amount of individual variation, mainly due to the external factors already mentioned, they all look very similar. Admittedly, when sorted out geographically, it is possible to make the following observations: birds from Java look lightest, with a little more olive and yellow than the others, but this large series consists mostly of well-prepared and well-stuffed skins, which would account for much of the difference in tone of the under parts. In birds from Sumatra, there is more variation, some being identical with Javanese birds, others showing darker on the sides of the breast and on the flanks; I would dismiss this variation as being due to method of preparation. The four specimens from Nias are uniformly rather grey underneath; partly this is due to the worn state of their plumage, partly to dirt. The few specimens from Borneo do not differ clearly from the Sumatran birds; among this material, there are three specimens from the upper Kajan, topotypical of *P. p. hutzi*. The measurements of these three specimens (wing 2♂ 86, 86 mm, ♀ 85 mm, cf. table 8) agree with those of other populations and are not smaller. They will be further discussed below.

Except for *P. p. porphyreus* from western Sumatra and its islands, which is characterized by orange eyes, birds from this whole region can be assigned to the nominate race.

There is no material from North Borneo in our collection, but I am indebted to Dr. Olson for sending me a series from northern North Borneo (Sabah) and from East Borneo. The material consists of the following specimens: East Borneo: ♀, 23.XI.1912, Segah River (Raven, USNM no. 182014); ♂, 31.VII.1913, Tandjong Seglu (Raven, USNM no. 182498); 3♂, 10, 15 and 17.IV.1914, Laham (Raven, USNM nos. 183024, 183025, 183027); for these localities, see Deignan (1960); North Borneo: ♀, 3.III.1908, Sandakan (Bartsch, USNM no. 211574); 8♦, 27.VIII-20.IX.1960, from Jesselton, Kasigui, Petagas, Tuaran and Ranau (Kuntz, NAMRU 2, USNM nos. 472967, 472969, 472970, 472972, 472975, 472976, 472983, 472985). The

Fig. 6. — Specimens of *Pycnonotus plumosus,* from left to right: ♂, 22.II.1935, Tandjong Binga, Billiton (RMNH no. 14046, type of *P. p. billitonis*); ♀, 27.VI.1919, Tandjong Morawa, Serdang, Sumatra (RMNH no. 61210); ϕ, 1891, Sangkapoera, Bawean (RMNH cat. no. 22); ♂, I.XII.1921, Buitenzorg, Java (RMNH no. 66909). Note the complete absence of the differences suggested by fig. 5.

measurements of these specimens do not require comment (wing East Borneo ♂ 83, 83½, 84, 85 mm, ♀ 79, 82 mm; North Borneo 79-84 mm; all their other measurements are also within the range of variation of nominate *plumosus*), but seen in series, the plumage is slightly different from that of nominate *plumosus* (as Dr. Olson had suggested to me): they are slightly darker, with less olive-green suffusion, on the upper parts, and on the under surface, the ground colour is whiter, not chamois, the sides of the breast and the flanks are a trifle darker, colder brown, and the abdomen is scarcely tinged with yellow. These differences are most evident in the more recent material from northern North Borneo, less so in the East Borneo specimens and in the bird from Sandakan. The latter, although different from the yellower birds from Java and Sumatra, are not clearly distinguishable from the darker Sumatran birds. They agree also with the three Kajan specimens in the RMNH-collection, discussed above. All this is not very convincing, but it is perhaps enough to leave, for the moment, *P. p. hutzi* the benefit of the doubt.

Topotypical material of *P. p. insularis,* renamed *P. p. hachisukae* (why not *hachisukai*?) by Deignan (1952), from small islands off the northern tip of Borneo has not been available to me. The published measurements (wing 5♂ 87-90 mm, 3♀ 86, 88, 88 mm), suggest a slightly larger size than mainland birds, as its describers claimed (Chasen & Kloss, 1929). Although the measurements are so close that in a larger sample overlap with other populations is predictable, *P. p. hachisukae* can be retained for the moment. Anyway, I am not in a position to judge its validity.

This leaves *P. p. chiroplethis* from the Anamba Islands, a subspecies which, since Robinson (1919) thought that he could confirm its validity, has been generally accepted (cf. Deignan, 1960: 248, etc.). This subspecies was diagnosed as being similar to the nominate race, "but much larger". The measurements presented by Oberholser (1917: 43), however, do hardly support this as far as the wing-length is concerned (Oberholser: wing 7♂ 85-90.5, 1♀ 83.5 mm). In material from Java and Sumatra I found: wing 25♂ 81-89½, 22♀ 78-86 mm (table 8). However, Oberholser mentions as tail-length for *chiroplethis:* 7♂ 77-81 mm, 1♀ 75 mm, measurements above the maxima I measured in specimens of the nominate race. Although I measure tails in the usual fashion, as described on a previous page (p. 21), I have found that quite often other people obtain larger tail-measurements than I do. Oberholser himself did not give any comparative measurements. As our collection does not contain any specimens from within the accepted range of *chiroplethis,* I asked Dr. Olson to measure the type-material for me. From his reply (in litt., 19.X.1984) I quote: " . . . there is no justification for regarding this series as being larger than nominate *plumosus,* Oberholser having made

erroneous measurements on specimens in a sorry state of molt in the first place. Nor can I see any other reason to separate *"chiroplethis"* from *plumosus,* so that in my opinion you would be perfectly justified in synonymizing the former".

Although Chasen & Kloss (1928: 57) recognized *P. p. chiroplethis,* their discussion actually condemns it. They reported for a topotypical series the following wing-lengths: 7♂ 86-90, 7♀ 85-90, 6♀ 85-92 mm, and added: "The Raffles Museum series of *plumosus,* mostly from Singapore, measure ♂ 83-91, average of ten 85.9; ♀ 80-89, average of ten 83: a large series from all parts of the Malay Peninsula in the Selangor Museum range 79-87. By dint of rather fine splitting *chiroplethis* can therefore be maintained on larger average size, ♂ 89.1; ♀ 86.6". Of 20 specimens from the Anamba Islands, only two, both unsexed, wing-length 92, 92 mm, exceeded in size a series of 20 Singapore birds (maximum wing-length 91 mm). In other words, only 10% could be distinguished, and 90% not.

Pycnonotus simplex simplex Lesson

Picnonotus simplex Lesson, 1839, Rev. Zool. 2: 167. — Sumatra.
Pycnonotus simplex perplexus Chasen & Kloss, 1929, J. f. Orn. 77, Ergänzungsb. 2: 116. — Balambangan Island, British North Borneo.
Pycnonotus simplex oblitus Deignan, 1954, J. Wash. Acad. Sci. 44: 124. — Pulau Serasan, southern Natuna Islands.

Material. — 3♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 13, 13a, 13b); ♂, IV-VII.1898, Soengailiat (Kannegieter, ANSP no. 56541); ♂, 28.V.1904, Bangka without exact locality (Abbott & Kloss, USNM no. 180571).

Like *P. plumosus, P. simplex* shows geographical variation in iris colour, only in the present species the variation is much more complicated than in *P. plumosus.* Birds from Malaya, Sumatra and the northern Natuna Islands appear to have normally a white or yellowish white iris, whereas in the southern Natuna Islands, Borneo, Billiton and Bangka, a red or orange-red iris dominates. Solely on the basis of iris colour, Chasen & Kloss (1929) separated the red-eyed Bornean birds as *P. s. perplexus.* At the time, these authors were not aware that in many parts of Borneo white-eyed birds occur mixed with the apparently more common red-eyed ones, so that they included the whole of Borneo in their new subspecies. After receiving red-eyed specimens from Billiton, Chasen (1937a: 226) extended the range of *perplexus* to include that island. Deignan (1954) was not satisfied with this classification; he considered that specimens with red eyes from the southern Natuna Islands differ from

perplexus: "by longer and heavier bill, and probably also by other measurements (which can not be given owing to the worn state of plumage shown by my series)". For these birds he proposed the name *P. s. oblitus*. He added: "Only two skins from western Borneo (Sarawak) have been examined; in dimensions of bill they seem to stand nearer *oblitus* than topotypical *perplexus*. The few specimens seen from Bangka and Billiton cannot be separated from *oblitus*". Next, Deignan (1960: 249-250) circumscribed the range of *P. s. oblitus* as: "Bangka; Billiton; southern and western Borneo; southern Natuna Islands" and that of *P. s. perplexus* as: "Northern and eastern Borneo; Balembangan Island". Note that now apparently the (partly) white-eyed populations of eastern Borneo could be included in the "red-eyed" subspecies *perplexus,* and that no attempt was made to define the ranges of the two subspecies inhabiting the Bornean mainland more exactly. The difference in bill-size seems at best a very tenuous character. My specimens from Bangka, a small series from western Borneo (mainly Gng. Kenepai, leg. Büttikofer) with red eyes, and two specimens from eastern Borneo (Boeloengan, leg. Lumholtz), of which one with red, one with white eyes, agree perfectly in size of their bills.

Chasen (1937a) dismissed two specimens from Billiton with white eyes as juveniles, his other material from the island, including both sexes, was red-eyed. On the basis of a not particularly rich material collected by Lomholtz in eastern Borneo, Voous (1961: 160) concluded that there the difference in iris colour is sexual, red in the males, lemon yellow ("white") in females. Whilst it was originally thought that in Borneo white-eyed birds are confined to the East, Fogden (1966: 406) noted that white-eyed birds are widely distributed in Sarawak. As matters now stand, I do not see how it is possible to recognize a subspecies exclusively based on eye colour. In this respect, I am in full agreement with Hoogerwerf (1966), who expressed: "the opinion that it is very dangerous to regard colour differences in irides as racial characters, certainly in a bird of which so little is known, as in this case". The character is certainly worth further study, which in the future may throw new light on the problem. Nevertheless, it is interesting that the one specimen from Bangka of which the iris colour has been recorded, has it orange, and not white as appears to be universal in Sumatra.

When looking up the ANSP specimen, Mr. Robbins noted that on its label the identification had been changed to *P. e. erythropthalmos* by Mr. de Schauensee, a re-identification obviously made after the publication of his 1958 paper. As this would have added a species to the Bangka list, I asked and obtained the specimen on loan and I am satisfied that its original identification as *P. simplex* was correct. I have also taken the opportunity to com-

pare the specimen with material of *P. s. prillwitzi* from Java, and found it to differ from that subspecies by having darker upper parts and less yellow under parts. It belongs clearly to the nominate race, hence must originate from Bangka.

Pycnonotus brunneus brunneus Blyth

[Pycnonotus] brunneus Blyth, 1845, J. As. Soc. Bengal 14: 568. — Malacca.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 12: "*simplex*").

Differences between the very similar species *P. simplex* and *P. brunneus* have been described by de Schauensee (1958: 290). In spite of this, it is with much hesitation that I assign the above specimen to *P. brunneus* rather than to *P. simplex,* as it is old and not in a particularly good condition, having been mounted and been exposed to a combination of light, dust and the public. The specimen has also been examined by Professor Voous, who agrees with its tentative identification as *P. brunneus.*

Note that in a series from northern Sumatra, the iris was: "red in six males and all the adult females, cream-colour in three males, light brown in one male, and light brown with an outside ring of orange in one male . . . in young birds the iris is grey or brownish grey" (Hoogerwerf in Chasen & Hoogerwerf, 1941: 76). In Borneo, Stresemann (1938b: 129) recorded a similar range of variation.

Criniger phaeocephalus phaeocephalus (Hartlaub)

Ixos (Trichixos) phaeocephalus Hartlaub, 1844, Rev. Zool. 7: 401. — Malacca.

Material. — ϕ, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 3); ♂, ♀, 7.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM nos. 180562, 180563); ♂, 9.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180564).

Setornis criniger Lesson

Setornis criniger Lesson, 1839, Rev. Zool. 2: 167. — Sumatra.

Material. — ♂, 1.VII.1904, Klabat Bay (Abbott & Kloss, USNM no. 180561); ♂, middle VI.1905, Simpang (Hagen, ZSM).

Ixos charlottae charlottae (Finsch)

Criniger Charlottae Finsch, 1867, J. f. Orn. 15: 19. — Borneo.
Iole olivacea crypta Oberholser, 1918, Proc. Biol. Soc. Wash. 31: 197. — Pulo Jimaja, Anamba Islands, South China Sea.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 6); ♂, 2.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180557); ♀, early VI.1905, Simpang (Hagen, ZSM).

The geographical variation of this species was studied by Deignan (1948), who recognized the subspecies *crypta* from Malaya, Sumatra, Bangka, etc., as different from the nominate race. He states that Bornean birds (*charlottae*) are: " . . . just separable from *cryptus* in series by the darker olivaceous brown of the upper parts and, possibly, by having the under parts suffused with a deeper, more brownish, olivaceous tinge". The material available to Deignan consisted of five specimens only, so that the characters hesitatingly claimed for the Borneo subspecies appeared to require verification.

Deignan (l. c.) has restricted the type-locality of *I. charlottae* to "Banjermasin, southwestern Borneo", but surely Bandjermasin is situated in the south-east of Borneo. The restriction to Bandjermasin is not very likely to be correct anyway. The type-specimen of *I. charlottae,* merely labelled "Borneo", was presented by Rüppell to the Senckenberg Museum in 1836 (cf. Hartert, 1891: 35, s. n. *Jole olivacea*). In view of the lively relations of exchange existing at the time between the Leiden and Senckenberg Museums, it is more than likely that Rüppell had received his specimen from Leiden. However, up to 1836, the only Borneo material in Leiden was from Pontianak, collected by Diard; the first of our collectors to visit Bandjermasin were S. Müller, Horner and Korthals, who arrived in Borneo in August 1836. Material collected could not have reached Europe before the end of the year. This point of view is supported by the fact that in our collection there remain two specimens from Pontianak (Diard, collected in 1826), whereas the oldest specimens from Bandjermasin were collected in 1843 (Schwaner) and 1852 (Croockewit). The only earlier visitor to Bandjermasin who is known to have collected birds, is A. H. Henrici, who stayed in south-east Borneo in 1833/1834, but his collection arrived in the Netherlands only in 1838 (as shown by letters in our archives). His collection was offered for sale to our museum, but Temminck advised against its purchase, as he considered the asking price much too high. Subsequently it was bought by the Belgian State.

Voous (1961: 162) has already shown that the subspecies *perplexus* is not tenable, but he maintained *cryptus* on the basis of Bornean birds: "having the flanks a darker olivaceous brown and the breast with a less greyish tinge".

Previously, Chasen (1937a: 225) had merely stated that: "Birds from Sumatra and Billiton seem inseparable . . . the Bornean form is separable (*charlottae*)". I have compared our adequate series from Sumatra, Bangka, Billiton and Borneo, and I am quite unable to perceive any difference in plumage that might suggest geographical variation in this character. Of course, in these olive-brownish and dull yellowish birds, a certain amount of individual variation due to state of plumage and age of skin is to be reckoned with; indeed, it seems unwise to base subspecies on slight differences in tone of plumage in bulbuls of this colour type.

Ixos malaccensis (Blyth)

H[ypsipetes] malaccensis Blyth, 1845, J. As. Soc. Bengal 14: 574. — Malacca.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 8); ♂, 11.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180556); ♀, 19.VI.1904, Tanjong Pamuja (Abbott & Kloss, USNM no. 180555).

I have previously drawn attention to the fact that the correct generic name of these bulbuls is *Ixos,* the type-species of which is *Ixos virescens* Temminck, 1825, by monotypy (cf. Mees, 1969: 302-303).

Irena puella criniger Sharpe

Irena criniger Sharpe, 1877, Cat. Birds Brit. Mus. 3: 267. — Borneo and Sumatra.

Material. — ♂, 26.IX.1872 (Vosmaer, RMNH cat. no. 18); ♂, 28.IX.1872 (Vosmaer, RMNH cat. no. 19); ♂, 18.VI.1904, Tanjong Pamuja (Abbott & Kloss, USNM no. 180534).

Aegithina tiphia horizoptera Oberholser

Aegithina tiphia horizoptera Oberholser, 1912, Smiths. Misc. Coll. 60 (7): 9. — Telok Bluku, Nias Island.

Aegithina tiphia micromelaena Oberholser, 1923, Smiths. Misc. Coll. 76 (6): 7. — Tanjong Tedong, Banka Island.

Aegithina tiphia singapurensis Chasen & Kloss, 1931, Bull. Raffles Mus. 5: 85. — Pulau Ubin, an islet in the Straits of Johore near Singapore.

Aegithina tiphia djungkulanensis Hoogerwerf, 1962, Bull. Brit. Orn. Cl. 82: 162. — Tandjong Alang-Alang, Udjung Kulon (West-Java).

Material. — ♂, 10.IV.1872 (Vosmaer, RMNH cat. no. 12); ♂, IV-VII.1898, Soengailiat (Kan-

negieter, ANSP no. 56466); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180547); ♂, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180548, type of *A. t. micromelaena*); ♂, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180549); ♂, 3.VII.1904, Tanjong Meng Kudu (Abbott & Kloss, USNM no. 180550).

The geographical variation of *Aegithina tiphia* has been studied by Marien (1952) and by Hall (1957). Marien did not include the subspecies *viridis* from Borneo in his revision, except to state that it did call for no special comment, but he and Hall agree that birds from Sumatra are referable to the subspecies *horizoptera*. The material available to me shows that birds from Sumatra and Nias (type locality of *horizoptera*) are a little brighter yellow on the under parts than *viridis* and that therefore *horizoptera* is just tenable. Our male in full plumage from Bangka agrees well enough with Sumatran birds.

Hoogerwerf (1962b) has described birds from Udjung Kulon, the extreme western peninsula of Java, as a separate subspecies, *A. t. djungkulanensis*. Two paratypes of this subspecies are in our collection. The appearance of these birds suggests, as was to be expected from their geographical position, that they are *horizoptera* which have undergone a slight influence of *scapularis*, the Javanese subspecies. I believe that clarity will be served when *djungkulanensis* is placed in the synonymy of *horizoptera*. Hoogerwerf did apparently not know, at least he did not consider, the fact that males of this species have a distinctive breeding-plumage. His decision to name the specimens from Udjung Kulon may have been influenced by his lack of appreciation of the existence of different plumages.

A. t. singapurensis was compared by its authors with specimens from Ceylon and from mainland Asia, but they did not even mention, leave alone discuss, the occurrence of the species in Sumatra, Borneo, etc.

Aegithina viridissima (Bonaparte)

J[ora] viridissima Bonaparte, 1850, Consp. Gen. Av. 1: 397. — ex Sumatr. Borneo.

Material. — ♂, 1859/1861 (v. d. Bossche, RMNH cat. no. 4); 2♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. nos. 5, 6); ♀ ad., early VI.1905, Simpang (Hagen, ZSM).

Chloropsis cochinchinensis icterocephala (Lesson)

P[hyllornis] icterocephalus Lesson, 1840, Rev. Zool. 3: 164. — îles de Sumatra et de Bornéo. Le continent indien = Palembang, Sumatra (ex Temminck).

Chloropsis cochinchinensis billitonis Chasen, 1937, Treubia 16: 225. — Billiton Island. The type is from Kpg. Tjeroetjoek.

Material. — 2♂, 2♀, ϕ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 9-12, the juvenile is without a number); ♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 12d); ♂ im. (♀-plumage), 28.VIII.1872 (Vosmaer, RMNH cat. no. 12b); ♀, 6.III.1873 (Vosmaer, RMNH cat. no. 12a); ϕ (♀-plumage), not dated (Vosmaer, received in 1874, RMNH cat. no. 12c); ♂, IV-VII. 1898, Soengailiat (Kannegieter, ANSP no. 56491); ♂, 22.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180545); ♂, 4.VII.1904, Tanjong Meng Kudu (Abbott & Kloss, USNM no. 180546); 2♂, ♀, middle V.1905, Simpang (Hagen, ZSM).

Specimens from Bangka agree perfectly with birds from Sumatra. Our collection contains also a small series from Billiton (7♂, 1♀), amongst which is the type of *C. c. billitonis* (RMNH no. 14043). I have compared these specimens with adequate series from Sumatra, including the male and female syntypes of *C. c. icterocephala* (RMNH cat. nos. 6 and 7), and I am unable to agree with Chasen (1937a) that birds from Billiton are intermediate between *C. c. icterocephala* and *C. c. viridinucha,* and even less that they are worthy of an own name. Males from Billiton have the crown and nape tinged with golden brown as in Sumatran birds, not green as in birds from Borneo, and the epaulettes are azureous blue as in Sumatran birds, rather than violet-blue as in Bornean birds. In my opinion, therefore, birds from Billiton belong unequivocally to *C. c. icterocephala.*

As our collection contains only a single specimen from Malaya, a female, I have been unable to investigate whether *C. c. icterocephala* differs from *C. c. moluccensis* (J. E. Gray), as claimed by Deignan (1946), and if not, whether it would really be necessary to replace the name *icterocephala* by the very inappropriate name *moluccensis.* Let us hope that they differ.

I take this opportunity to mention that Delacour (1960) has overlooked *C. flavocincta* Sharpe, a form I would prefer to regard as a species rather than as a subspecies of *C. cochinchinensis.*

Chloropsis sonnerati zosterops Vigors & Horsfield
(tab. 9)

Chlor[opsis] zosterops Vigors & Horsfield, 1830, in S. Raffles, Life Sir. T. S. Raffles: 674. — Sumatra.
Chloropsis zosterops parvirostris Hartert, 1898, Orn. Mber. 6: 93. — Nias.

Material. — 2♂, 2♀, ϕ juv., 1859/1861 (v. d. Bossche, RMNH cat. nos. 15, 16, 17, 17a, 4*); ♂, 10.VIII.1872 (Vosmaer, RMNH cat. no. 17b); ♂, ♀, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM nos. 180543, 180544); ♂, middle V.1905, Simpang (Hagen, ZSM).

The subspecies *parvirostris* was based on the sole character of males having a smaller, more slender bill than *C. s. zosterops* of Sumatra and Borneo. In

Table 9. Measurements of *Chloropsis sonnerati zosterops.*

cat. no.	sex	date	wing	tail	tarsus	entire culmen	exposed culmen
Bangka							
15	[♂]	1859/1861	97	63½	19	24½	20
16	[♂]	"	103	70	-	24	20
17b	[♂]	10.VIII.1872	101	69	20	24	19¾
17	[♀]	1859/1861	93	65	19½	23¾	19
17a	[♀]	"	95	62	18¾	22½	19
Nias							
10	♂	26.XI.1895	101	71½	19	23	18¼
13	♂	18.XI.1895	97	66	18¾	23	18¾
11	♂	23.XI.1895	98	66	18½	23¾	20
12	♂	1895/1896	97	65½	19¼	21½	17
14	♀	9.XII.1895	93	63	18½	22	18½

the original description, Hartert did not mention on how many specimens the new subspecies was based, but a later publication makes clear that his material consisted of 2♂, 1♀ (cf. Hartert, 1902a: 212). Within a few years of its description, Finsch (1905: 83-85), on the basis of a material that was larger than that available to Hartert, demonstrated that *parvirostris* is not tenable. In spite of this, subsequent authors, like Chasen (1935b: 190), Ripley (1944: 385-386) and Delacour (1960: 304) continued to recognize *parvirostris* without discussion and therefore probably without renewed investigation of its validity. In view of this conflicting treatment, I considered it useful to study again our material from Nias, the same specimens that had previously been examined by Finsch. Perhaps not surprisingly, my conclusion is also exactly the same as Finsch's: in the specimens from Nias there may possibly be a tendency to having the bills rather small, but it is no more than that and is certainly not enough for expression in nomenclature. In table 9 I present measurements of our specimens from Bangka and from Nias. Although Hartert also stressed the slenderness of the bills of males from Nias, that is not apparent in our material.

Lanius tigrinus Drapiez

Lanius tigrinus Drapiez, 1828, Dict. Class. Hist. Nat. (Paris) 13: 523. — Java (reference not verified).

Material. — ϕ juv., 1859/1861 (v. d. Bossche, RMNH cat. no. 16); ♂, ♀, not dated (Buddingh', received in 1865, RMNH cat. nos. 17, 18); ♀, III.1865 (Buddingh', RMNH cat. no. 19).

Although neither Chasen (1935b) nor de Schauensee (1958) listed the species from Bangka, this material had already been recorded by Büttikofer (1887: 53). Büttikofer mentioned five specimens from Bangka, but now there are only four.

Turdus obscurus Gmelin

[Turdus] obscurus Gmelin, 1789, Syst. Nat. (ed. 13) 1 (2): 816. — in Sibiriae silvis, ultra lacum Baical.

Material. — ϕ, 1859/1861 (v. d. Bossche, RMNH cat. no. 9).

Copsychus saularis musicus (Raffles)
(figs. 7, 8; tab. 10)

Lanius musicus Raffles, 1822, Trans. Linn. Soc. Lond. 13: 307. — Sumatra.
Copsychus problematicus Sharpe, 1876, Ibis (3) 6: 36. — Sibu, Borneo.
Copsychus saularis ephalus Oberholser, 1923, Smiths. Misc. Coll. 76 (6): 2. — Tarussan Bay, Northwestern Sumatra.
Copsychus saularis nesiotes Oberholser, 1923, Smiths. Misc. Coll. 76 (6): 3. — Tanjong Bedaan, Banka Island.
Copsychus saularis javensis Chasen & Kloss, 1930, Bull. Raffles Mus. 4: 89. — Wynkoops Bay, S. W. Java.

Material. — 4♂, 1859/1861 (v. d. Bossche, RMNH cat. no. 1 and three without numbers); ♀, 12.III.1873 (Vosmaer, RMNH without number); ♂, 4.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180537, type of *C. s. nesiotes*); ♂ juv. (?), 13.VI.1905, Simpang (Hagen, ZSM no. A. 325).

Specimen ZSM no. A. 325 is labelled by its collector as "♂"; Parrot published it as "♂ juv.", but judged by its plumage it is an adult female.

As de Schauensee (1958) already observed, there is no difference between birds from Bangka and birds from Sumatra. A superficial examination of a part of our material had given me the impression that *javensis* is a very subtle but recognizable subspecies and therefore I borrowed Kannegieter's specimen (ANSP no. 56676), expecting to be able to ascertain whether its provenance was correctly given, or whether it was another mislabelled specimen from Java. Unfortunately, a subsequent study of our large material from Java and Sumatra failed to substantiate any of the differences that have been claimed to exist.

Even the description of *C. s. javensis* lacks assurance; its authors (Chasen & Kloss, 1930: 87) mentioned for 11♂ from Sumatra a wing-length of 101-109 mm, once 96 mm. After discussing and dismissing the amount of white in the tail as a possible character to separate *javensis* from *musicus,* they continue: "This white-bellied Javan bird is small. Our largest specimen in a series of seven has the wing measuring 104 mm and the bill is usually much smaller than in Malayan birds. For the moment the specimens may be indicated as *C. saularis musicus* > *amoenus* for they are *musicus* in colour and *amoenus* . . . on size . . . The largest black-bellied bird we have seen from Java has the wing measuring 104 mm". Chasen & Kloss further mentioned that: "In colour the West Javan race does not seem to differ from *musicus* except that the males are distinctly darker under the wings". These then are the two characters on which the subspecies *javensis* was separated from *musicus*: average smaller size, and a difference in colour of the under wing-coverts.

Fortunately this common species is well represented in our collection, so

Table 10. Measurements of *Copsychus saularis*.

number/sex	wing	av. wing	tail	av. tail	tarsus	av. tarsus	entire culmen	av. entire culmen	exposed culmen	av. exposed culmen
Malaya (*musicus*)										
4 ♂	93-101	97.0	77½-89	83.4	29-31	30.4	23-25	24.1	17-19	18.1
Sumatra (*musicus*)										
36 ♂	100-109	104.0	83-94	88.6	29-33	31.2	23¼-27	25.5	16-20½	19.0
8 ♀	95-101	97.9	77-87	81.8	28-30¾	29.6	22-26½	24.5	16¾-19½	18.3
Nias (*musicus*)										
2 ♂	103, 103		86, 90		30, 30½		24, 25		18¼, 19½	
1 ♀	101		81		30		25		18	
Bangka (*musicus*)										
4 ♂	105-106	105.8	85-94	90.8	30½-31½	31.0	24¼-26¾	25.4	18¼-21	19.6
1 ♀	102		89		30½		24¾		18	
Billiton (*musicus*)										
2 ♂	102, 103		88, 90		28, 29½		23½, 23¾		17¼, 19	
1 ♀	97		80		29		24		18	
Borneo (*musicus*)										
7 ♂	99-107	103.9	85-92	88.4	29-31¾	30.3	24-26¾	25.3	17½-20½	19.0
3 ♀	96, 96, 98		79-81	80.0	27½-31	28.9	23¼-26		17¼-20	18.3
Java (*musicus*)										
65 ♂	97-111	103.0	83-98	90.4	28-32¾	30.3	21-26	23.7	15-20½	17.8
18 ♀	88-99	94.4	75-87	80.5	26, 27½-31¼	29.4	21¾-25	23.3	16-19	17.7

Java, Bali (*amoenus*)										
32 ♂	97–111	104.7	84–102	93.9	30–33	31.3	22–26	24.1	16–20	17.8
11 ♀	95–102	98.5	80–95	87.0	28¾–32¼	30.2	22–25	23.3	15–18½	16.8
Borneo (*pluto*)										
14 ♂	106½–113	110.0	90–101	95.8	29½–33½	31.5	23–25¾	24.8	17–20	18.8
8 ♀	98–103	101.8	80–89	85.1	30–31¾	30.4	23–25	23.9	16¾–19	17.6
Borneo (*adamsi*)										
7 ♂	111–116	114.0	90–102	94.9	30–35	31.9	26–33	28.0	19¼–22	20.9
5 ♀	103–110	106.4	78–89	84.2	29¼–32	31.0	25–28½	26.8	19¾–22	20.4

that I have been able to measure and compare a much larger material than the authors of *javensis* had at their disposal. The measurements are presented in table 10; they show convincingly that the difference in size of wing and bill, which was the main argument for separating *javensis* from *musicus,* is imaginary. At most it can be said that birds from Buitenzorg (a locality which has been well sampled) frequently have bills which are near the lower end of the range of variation, but even there many birds are indistinguishable from topotypical *musicus.* In other local populations of Java, the bills are of the same size as in Sumatran birds.

In view of the importance Chasen & Kloss attached to the colour of the under wing-coverts, I have also compared these, and I cannot share their opinion that they are a useful character. These feathers are dark grey or black, with white margins. The width of these white margins is quite variable and it is possible that in Sumatran birds they average wider than in birds from Java, especially where there is an influence of *amoenus* (in which these feathers are black), but many specimens are indistinguishable. The conclusion that *javensis* is a synonym of *musicus* appears inevitable.

Naturally, the study of our material from Java and Sumatra confronted me with the problems presented by the wider geographical variation of the species. Billiton is generally considered to be inhabited by the subspecies *musicus* (cf. Chasen, 1937a: 228; Ripley, 1944: 66), but the white-bellied birds from western Borneo are currently recognized as a separate subspecies under the name *problematicus.* The justification for the use of that name is again to be found in the paper by Chasen & Kloss (1930: 88): "Only white-breasted birds (*problematicus* Sharpe) occur in the Kapuas River basin, Southwest Borneo, and in southern Sarawak; we have specimens before us from both localities. They are large birds (wings up to 109 mm.), very dark on the under wing-coverts and axillaries and with the amount of black on the third rectrix variable as usual . . .". As on a preceding page the said authors mentioned that the maximum wing-length of Sumatran birds is also 109 mm, large size is not a character that can be used to separate *problematicus* from *musicus.* There remain the under wing-coverts. Contrary to the statement made by Chasen & Kloss, the specimens studied by me have them broadly edged with white. I have failed to find any character by which *problematicus* can be distinguished from *musicus,* of which it is an obvious synonym. Presumably Chasen & Kloss studied specimens from near or in the area of intergradation with the black-bellied subspecies *adamsi* and *pluto,* in which the under wing-coverts are entirely black.

Uniting *javensis* and *problematicus* with *musicus* does not create any zoogeographical problems, as the expanded *musicus* has now a contiguous

range from Malaya over Sumatra, Bangka and Billiton to Borneo, and to Java. In this connexion it may be recalled that fairly soon after the eruption of 1883, Krakatau was colonized by *Copsychus saularis*. These birds were with remarkable confidence, but without explanation, referred by Chasen (1937b) to: "The Sumatran, not the West Javan, subspecies".

Although the intriguing question of the distribution of black-bellied and white-bellied forms in Java and Borneo has repeatedly drawn the attention of ornithologists, no detailed study of their distribution (a necessary prerequisite for their understanding) has yet been made.

For Java there is now enough material available to give a much-improved picture, although not yet a final one, of their distribution.

When Stresemann (1924), heavily leaning on a suggestion previously made by Hartert (1910: 235), proclaimed white- and black-bellied birds to be "mutants" only, not separate species or subspecies, this was because he believed that throughout their range, black- and white-bellied birds occurred together. He referred to Bartels (1902: 153) as proof that white-bellied birds occur in East Java. Bartels wrote under the name *Copsychus musicus:* "Im Distrikt *Palaboehan* und *Tjiheulang* bis auf einer Höhe von 2500 Fuss vorkommend, ebenso ziemlich häufig bei *Soerabaya* und in *Kediri*", and under *Copsychus amoenus*: "Ein Exemplar erhielt ich bei *Kediri*". More or less the same information was contained in a later publication (Bartels, 1906: 399). Snouckaert (1926: 55) and Hoogerwerf (1947, 1965b), like Stresemann, relied on Bartels (1902) for evidence that *C. s. musicus* is fairly common around Soerabaja and Kediri. To me it seems obvious that an error in identification is at the base of these records. Bartels spent only the first few months of his long stay in Java in Soerabaja. In East Java he collected before 1906 only a single specimen of *Copsychus:* at Minggiran near Kediri (♂, 8.V.1895), the bird correctly referred to as *amoenus* in his two publications. When, very soon afterwards, Bartels was transferred to West Java, he found *C. s. musicus* common in gardens, etc., and as at the time *musicus* and *amoenus* were generally regarded as two species, he must have automatically assumed that the common bird of Soerabaja and Kediri was also *musicus.* Several specimens from Soerabaja in our collection, obtained by Vorderman in 1892 and by Tekke in 1934, are *C. s. amoenus.* In conclusion: there are no reliable records of white-bellied birds from East Java, although their influence reaches as far east as Semarang and Sapoeran in eastern Central Java.

As first suggested by Chasen & Kloss (1930: 87-88), but partly on the incorrect assumption of the occurrence of *musicus*-like birds as far east as Soerabaja, and later confirmed by Hoogerwerf (1947), *amoenus* reaches farther west along the south coast than along the north coast. Whereas in the north

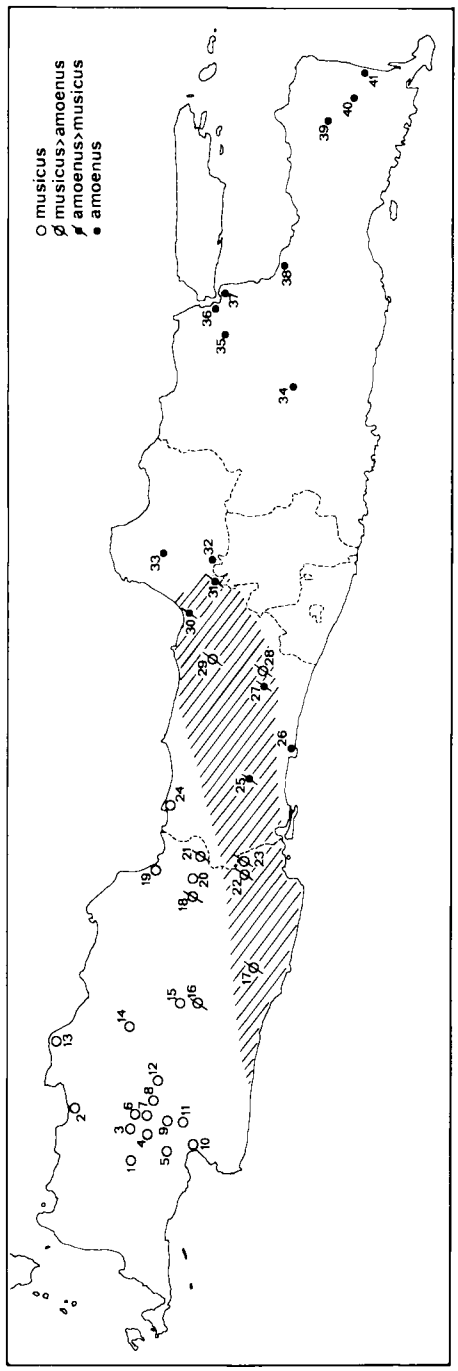


Fig. 7. — The distribution of *Copsychus saularis* (subspecies *musicus* and *amoenus*) in Java. The approximate area of intergradation is hatched. Localities: 1, Bolang; 2, Djakarta = Batavia; 3, Dramaga; 4, Gadok; 5, Halimoen; 6, Bogor = Buitenzorg; 7, Tjidjeroek; 8, Pangerango; 9, Tjitjoeroeg; 10, Wijnkoopsbaai; 11, Tjibadak; 12, Gede; 13, Kali Tjilesoeng; 14, Poerwakarta; 15, Bandoeng; 16, Bandjaran; 17, Bandjarwangi; 18, Telaga; 19, Cheribon; 20, Koeningan; 21, Tjiwaroe; 22, Bandjar; 23, Langen; 24, Brebes; 25, Poerwokerto; 26, Karangbolong (Robinson & Kloss, 1924: 289), 27, Tandjoengsari; 28, Sapoeran; 29, Tjandiroto; 30, Semarang; 31, Gedangan; 32, Telawah; 33, Koedoes; 34, Minggiran near Kediri; 35, Mantoep; 36, Grissee, 37, Soerabaja; 38, Pasoeroean; 39, Soember Wringin; 40, Idjen; 41, Banjoewangi.
Note: In West Java, not all localities from which the species has been recorded are shown.

specimens from Cheribon and Brebes are still referable to *musicus,* material from Bandjar and Langen is clearly intermediate. The same was recorded by Hoogerwerf (1947) of a small series from Bandjarwangi. Robinson & Kloss (1924: 289) even mentioned an intermediate bird from the Wijnkoopsbaai. In the large series in the Bartels collection from Mt. Pangerango, a single bird (♂, 3.VIII.1909) is also intermediate. Hoogerwerf (1949: 79-80) reported that he had seen a similar bird in the botanical gardens at Buitenzorg. In his final publication, Hoogerwerf (1965b) also referred to the occurrence of intermediate specimens in Bantam, on the basis of which he noted that: "the influence of *amoenus* extends as far as the Sunda Strait". For the Bantam records, Hoogerwerf relied on a paper by Snouckaert (1926: 55), but there no original information is supplied, only a further reference to a paper by Nicholson (1879) on a collection made by E. C. Buxton in western Java. According to Nicholson: "The collection was made in that part of Java opposite Lampong, in Sumatra . . .". Whereas this certainly suggests Bantam, all Buxton's specimens, now in the British Museum (cf. Sharpe, 1883: 65), are merely labelled W. Java, without localities. Buxton died soon after his visit to Java so that he was not able to provide particulars concerning his work there, neither does the extent of his travels in Java seem to be known. Buxton's collection gives no clue, as all birds belong to widely-distributed species. On the other hand, Hoogerwerf (1965b) records specimens from the island of Sebuku (Sunda Strait) with intermediate characters. In his last paper, Hoogerwerf reverses his earlier opinion and reverts to the opinion of Stresemann, that in Java white-bellied and black-bellied birds do not represent different subspecies, but colour morphs (the use of the word "phase" in this connexion seems to me not correct as it suggests that individual birds can pass from one plumage into another; there is no evidence for that).

To provide a better picture of the distribution of the two colour-types, I have brought them together on the map of Java. With the elimination of the Bartels records of *musicus* from Kediri and Soerabaja, and the Buxton records of *amoenus*-like birds from Bantam, it appears possible, once more, to adhere to the classical point of view that they represent two subspecies, which intergrade over a wide area.

The situation in Borneo is more complicated than that in Java, as it has not two subspecies, but three. Very roughly it can be said that western Borneo is inhabited by *C. s. musicus,* eastern Borneo by *C. s. pluto,* and northern Borneo by *C. s. adamsi.*

As the plumage characters ascribed to the three subspecies by Delacour (1947: 232) and Smythies (1981: 301, and earlier editions) are erroneous, I present them here anew.

C. s. musicus (= *C. s. problematicus*). ♂: upper parts and breast glossy black; lower under parts, the three outer pairs of rectrices, the upper wing-coverts and the broad outer margins of two or three secondaries white; under wing-coverts black with broad white margins; ♀: upper parts glossy black (but not so intensely black as ♂); breast grey; lower under parts, tail, and wing markings as in the ♂; under wing-coverts dark grey with broad white margins.

C. s. pluto. ♂: upper parts and under parts glossy black, except for the under tail-coverts, which are white, usually somewhat mixed with black; the three outer pairs of rectrices, the upper wing-coverts and the outer margins of two secondaries white; under wing-coverts glossy black. ♀: upper parts glossy black; under parts dark grey; under tail-coverts, tail and wing markings as in the ♂; under wing-coverts dark grey.

C. s. adamsi. ♂: a variable subspecies, but in its extreme and most "typical" plumage it is entirely glossy black, above and below, including the under tail-coverts and the tail; white is confined to the greater upper wing-coverts, no white on the secondaries. ♀: upper parts glossy black, under parts dark grey, including the under tail-coverts; tail black; upper wing-coverts white, no white on the secondaries.

Before proceeding with a discussion of the characters and the ranges of the subspecies in Borneo, it is necessary to say something about the type-locality of *C. s. pluto*. Originally merely given as "Borneo" (cf. Bonaparte, 1850: 267), it was restricted to Samarinda by Chasen & Kloss (1930: 90), a restriction that has been generally accepted (cf. Ripley, 1964: 67-68) but is incorrect. The types are three mounted specimens in our collection (2♂, 1♀), inscribed on the socles with the name "*Copsychus pluto* n. sp." in Temminck's handwriting. These specimens bear no date and no locality other than just "Borneo", but they have the collector's name: Schwaner. A fourth specimen collected by Schwaner bears the locality Martapoera. Schwaner never visited Samarinda, but he spent considerable time at Bandjermasin and Martapoera; therefore I consider it justified to correct the type-locality to Martapoera.

Always allowing for the fact that in a species ranging so widely in a compact island like Borneo, zones of contact and intergradation between the subspecies must be rather broad, defining the range of the well-marked subspecies *C. s. musicus* causes no particular problems. It occupies the whole western part of Borneo (Brunei, Sarawak and West Borneo), west of a line connecting Brunei with the Sampit River. Birds from the Baram Valley in north Sarawak are still referable to *musicus,* but already show a variable amount of admixture with the black-bellied races. Even two specimens from as far north as Kiau, Kinabalu, are intermediate, and so is one from Liu Matu

(a young bird). Eastwards, the influence of *musicus* extends just to the headwaters of the Mahakam (Blu-u), and to the upper course of the Barito (Moearatewe, cf. Brüggemann, 1877: 460; 1878: 529; Pelzeln, 1880) and the little Kapoeas (Toembang Hiang, cf. Blasius, 1883). Stresemann (1924) was misled by Pelzeln (1880) into believing that Breitenstein had collected *C. s. musicus* near Bandjermasin, but actually Breitenstein's collection was from Moearatewe (cf. Pelzeln, 1881).

It is far more difficult to delimit *C. s. adamsi* against *C. s. pluto*. In its extreme "typical" development, *adamsi* is strikingly different from *pluto;* I have examined such specimens from Bettotan, Kudat, Mallewallé Is., Balambangan Is. and Banguey Is. Some specimens with a little white on the under tail-coverts (but with secondaries and rectrices entirely black) can be included without distorting the facts. However, in some of the localities mentioned, individuals occur which approach *pluto* very closely. For example: ♂, 3.VIII.1927, Bettotan (ZRC no. 3.4801), has the distal halves of the under tail-coverts white, the outer pair of rectrices white, the second pair for the greater part white, the third pair with some white, two secondaries on each side with white edges. Several other specimens, of both sexes, are variably intermediate between *pluto* and *adamsi*. From this it could be deduced, that Bettotan and Sandakan are in a zone of intergradation between *adamsi* and *pluto*, and that true *adamsi* is confined to the extreme north of Borneo. Actually, this may be the case, but unfortunately, even birds from the islands show much variation. I have examined three adult specimens from Banguey (2♂, 1♀); of these only the female (ZRC no. 3.4810) is by my criteria pure. Of the two males (ZRC nos. 3.4808, 3.4809), the former is near to typical *adamsi,* but it has the outer pair of rectrices white, the second pair half white; the other specimen has the outer two pairs of rectrices white, the third pair with white-edged outer vanes, and many of the under tail-coverts are white-tipped. Evidently, the population throughout North Borneo is very variable; of the intermediate birds hardly two are the same, but there seems little point in describing each individual specimen. An obvious and sensible suggestion would be to synonymize *adamsi* with *pluto,* and dismiss the former as a local variant (or even "mutant"!), but I believe that that would not do justice to *adamsi,* which I would rather interpret as an excellent subspecies, originally with a small range and now in the process of being "swamped" by its neighbours. In this connexion it must not be overlooked that *adamsi* (typical and intermediate birds combined) averages so much larger than the two other Borneon subspecies, that that alone would almost justify its recognition.

Of the remaining subspecies, *C. s. pluto,* the western limit corresponds obviously with the eastern limit of *C. s. musicus.* A slight influence of *C. s. pluto*

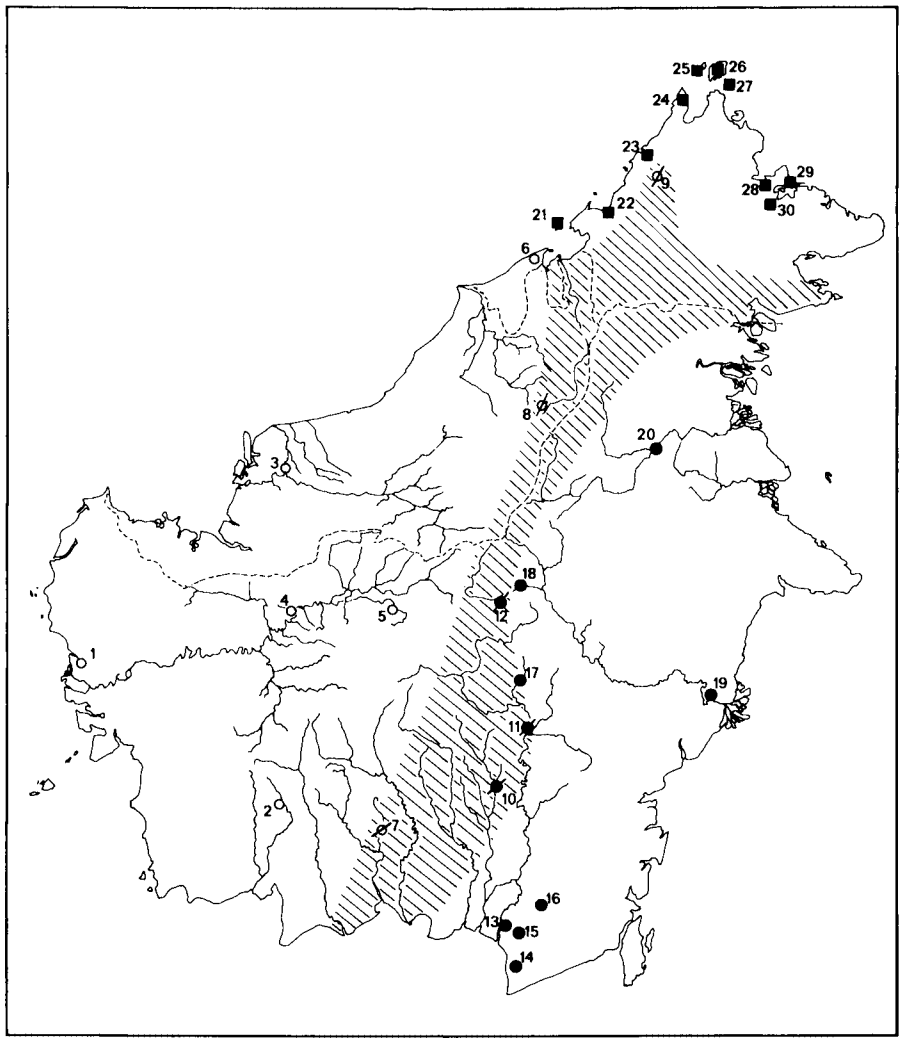


Fig. 8. — The distribution of *Copsychus saularis* (subspecies *musicus, pluto* and *adamsi*) in Borneo. The approximate areas of intergradation are hatched. *C. s. musicus* (circles), *C. s. pluto* (East Borneo, dots), *C. s. adamsi* (North Borneo, squares); symbols for intermediates as in fig. 7. Localities: 1, Pontianak; 2, Riam; 3, Sibu (type locality of *C. problematicus*); 4, Smitau; 5, Nanga Raoen; 6, Brunei; 7, Parit; 8, Lio Matu; 9, Kiau; 10, Toembang Hiang; 11, Moearatewe; 12, Bloe-oe or Blu-u; 13, Bandjermasin; 14, Pelaihari; 15, Martapoera; 16, Rantau; 17, S. Maroewai; 18, Tepai; 19, Samarinda; 20, Peleben; 21, Labuan; 22, Benoni; 23, Tuaran; 24, Kudat; 25, Balambangan; 26, Banguey; 27, Mallewallé; 28, Bettotan; 29, Sandakan; 30, Pintasan.

is visible as far west as Parit (Mayr, 1938: 40). On the upper course of the Barito, on the other hand, the *pluto*-component seems to dominate, and the influence of *musicus* extends only barely to the upper Mahakam. Farther north, Stresemann (1938b: 131) called specimens from Peleben on the Kajan River *C. s. niger* [= *C. s. adamsi*] > *problematicus*: "Das Kajan-Gebiet gehört bereits zur breiten Mischzone zwischen der schwarzbäuchigen und der weissbäuchigen Rasse, scheint hier der *niger*-Anteil noch stark vorzuherrschen". Stresemann made no mention of *C. s. pluto* (whose characters are to a certain extent intermediate between *adamsi* and *musicus*), and judging by the descriptions he has given, I believe that these specimens can be referred to *pluto*. Voous (1961: 162-163) discussed material from the same region, which seems to support this.

C. s. pluto and *C. s. amoenus* are exactly alike in plumage and in the past, the former has often been regarded as a synonym of the latter. However, as was pointed out by Chasen & Kloss (1930: 88-90), there is a difference in size. Although the figures show a considerable overlap in wing-length, only five out of 32 males of *amoenus* have it over 106 mm, viz., 107, 108, 109, 109 and 111 mm. At least a large proportion of individuals can be distinguished by wing-length alone, and in combination with the geographical distance separating the two populations, the difference is in my opinion just enough for recognition in nomenclature.

Copsychus malabaricus tricolor (Vieillot)

Turdus tricolor Vieillot, 1818, Nouv. Dict. d'Hist. Nat. (nouv. éd.) 20: 291. — On soupçonne que cette espèce se trouve dans les îles de la mer du Sud. Restricted to Bantam, W. Java, by Robinson & Kloss (1921: 210 footnote), see discussion.

Kittacincla malabarica abbotti Oberholser, 1923, Smiths, Misc. Coll. 76 (6): 5. — Tanjong Bedaan, Banka Island.

Material. — ♂, 2♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 7, 8, 9); ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 12); ♀, not dated (Vosmaer, received in 1874, RMNH cat. no. 11); ♀ im., 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180540); ♀, 7.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180538, type of *K. m. abbotti*); ♂, 9.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180539); ♂, 15.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180541); ♂, ♀, middle V.1905, Simpang (Hagen, ZSM nos. A. 330, A. 331).

In current lists (Chasen, 1935b: 237; Ripley, 1964: 70), the volume-number in which *Turdus tricolor* was orginally described, is given as 30, but the correct volume-number is 20. The name was based on Levaillant (1802: 45, pl. 114): Le Merle tricolor à longue queue. Levaillant stated that the bird (or a

drawing of it) was received from M. Woodfort. This would have been Col. E. J. A. Woodford (ca. 1761 - ca. 1825), a well-known collector in his day (Stresemann, 1951: 95; Wynne, 1969: 233), and from a knowledge of his collection it might be possible to reconstruct a more exact type-locality than the arbitrarily restricted one of Bantam. Robinson & Kloss (1921) based their restriction on Vieillot's remark that the type came from "les îles de la mer du Sud", but I am not convinced that Hartert's (1902b: 571, 572) prior restriction to India is invalid. The remark about la mer du Sud is found in Levaillant's work under the species preceding Le Merle tricolor, viz., Le Merle roux à collier noir de la mer du Sud. This is *Zoothera naevia,* an inhabitant of northern North America. So when under Le Merle tricolor Levaillant remarks: "Cette espèce appartient encore aux climats du sud", suggesting that it came from the same place as Le Merle roux, this remark is evidently without any value.

Pellorneum capistratum nigrocapitatum (Eyton)

Brachypteryx nigrocapitata Eyton, 1839, Proc. Zool. Soc. Lond. 7: 103. — Malaya.
Drymocathapus nigrocapitatus nyctilampis Oberholser, 1922, Smiths. Misc. Coll. 74 (2): 10. — Bukit Parmassang, Banka Island.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 3); ♂, 9.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180574); ♂?, 15.VI.1904, Bukit Permisan (Abbott & Kloss , USNM no. 180572, type of *D. n. nyctilampis*); ♂, 25.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180573).

Van den Bossche's specimen is in a very poor condition, but it shows clearly the grey cheeks of Sumatran birds, not the black cheeks of birds from Borneo. The same holds true for a specimen from Billiton (June 1888, leg. Vorderman). Deignan (1964: 246) has recognized Oberholser's subspecies *nyctilampis* for birds from Bangka and Sumatra, whereas he has included Billiton and the North Natuna Islands in the range of the Malayan subspecies *nigrocapitatum.* Undoubtedly this was based on Chasen (1935b: 209 footnote to *nyctilampis*): "A rather doubtful race. The skins fade very quickly in the tropics, but *some* birds from Sumatra certainly seem darker than specimens from the Malay Peninsula". Two years later, discussing some specimens from Billiton, Chasen (1937a: 226) observed: "These birds seem absolutely inseparable from *nigrocapitatum* of the Malay Peninsula . . . The Banka bird has been named *nyctilampe* Oberh.: I have never seen topotypes of this race and although in a previous publication I used the name for Sumatran birds on the strength of one or two comparatively dark skins examined from that

island, I now doubt if a Sumatran race is really separable". Evidently, the only reason why Chasen did not definitely reject *nyctilampis* was the inadequacy of his material from Sumatra, which consisted of only one or two skins. Although the material available to me is also somewhat inadequate, the one specimen each from Malaya (Wellesley), Bangka and Billiton fit in well with a series of 19 birds from Sumatra. My opinion, in which I feel supported by Chasen, is that *nyctilampis* may now safely be relegated to the synonymy of *nigrocapitatum.*

Trichastoma malaccense poliogene (Strickland)

Brachypteryx poliogenis Strickland, 1849, in Jardine, Contrib. Orn.: 93, pl. 31. — Borneo.
Anuropsis malaccensis saturata Robinson & Kloss, 1920, Bull. Brit. Orn. Cl. 40: 68. — Tinjar River, Baram District, N. Sarawak, 500 feet.
Anuropsis malaccensis docima Oberholser, 1922, Smiths. Misc. Coll. 74 (2): 10. — Tanjong Tedong, Banka Island.

Material. — ♀, 1.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180584, type of *A. m. docima*).

The first author to suggest the existence of geographical variation in this species was Büttikofer (1895: 84, s. n. *Anuropsis malaccensis*), who, in a discussion of the material at that time available in Leiden, observed: "Strange enough, there is not the least difference in coloration amongst my own 13 Bornean specimens, though they are from different localities and dates and have both sexes represented. On the other hand these birds differ as well from the North-Bornean as from the Sumatran form and it is not impossible that later on terms will be found upon which to separate the birds into two or even more species". A few years later, he returned to the subject and once more drew attention to the differences in colour existing between specimens from different localities in Sumatra and Borneo (Büttikofer, 1900: 241).

When Robinson & Kloss (1920) described *A. m. saturata,* they believed for some reason that the type of *T. m. poliogene* came from Sumatra, hence was a synonym of the nominate race. Having correctly established that Bornean birds are different, they thought they were naming birds from Borneo for the first time, and they made no subdivision inside Borneo. A few years later, Chasen & Kloss (1929) noted that North Borneo is inhabited by a duller subspecies, which they described as *A. m. sordidus,* with type-locality Bettotan near Sandakan. The following year, Chasen & Kloss (1930: 77-78) had discovered that the type-locality of *poliogene* is the Karau River, SE Borneo. Without making very clear on what evidence exactly this was based, they

decided that *poliogene* was the duller subspecies. Therefore they synonymized their *A. m. sordidus* with *poliogene,* giving that subspecies a range covering northern, eastern, and south-eastern Borneo, and retained *saturatus* for Sarawak, western and south-western Borneo. This classification was accepted by Chasen (1935b: 216) and Deignan (1964: 250-251).

Material in our collection confirms that birds from Sumatra and birds from the southern half of Borneo are well-differentiated. The latter are on the upper parts duller brown, less chestnut; the under parts, on the other hand, especially breast, sides and flanks, are clearly brighter, more orange-brown, than in the Sumatran birds, which have these parts paler; the sides of the head in Bornean birds are darker grey, with a wider black moustachial streak. Contrary to what Chasen & Kloss (1930) thought, two old pseudo-types from the Karau River agree with specimens from central and western Borneo.

There are only two specimens from the northern part of Borneo in the RMNH collection: from Trusan (XII.1885, leg. Everett), the same birds already examined by Büttikofer, and by their duller under parts and narrow moustachial streak these birds may be said to be more or less intermediate between the subspecies from Sumatra (*malaccense*) and south Borneo (*poliogene*). Birds from along the Kajan River are also slightly duller in colour than true *poliogene,* although still referable to that race (cf. Voous, 1961: 164). Although I agree with previous authors that Borneo is inhabited by two subspecies, a brighter and a duller one, I differ considerably in opinion as regards nomenclature and geographical distribution. *T. m. poliogene,* the brightly-coloured subspecies, is distributed over the greater part of Borneo, only the north excepted, and is also the subspecies found on Billiton and Bangka. The duller northern subspecies is more or less confined to North Borneo, and must bear the name *T. m. sordidum.* The border between the two subspecies, which may be assumed to intergrade smoothly, lies in western Borneo somewhere between the Baram (where *poliogene* occurs) and the Trusan Rivers, in eastern Borneo north of the Kajan. I have not explored the possibility that *T. m. sordidum* is the same as *T. m. malaccense*; on geographical grounds one would assume them to be different.

Trichastoma bicolor (Lesson)

Brachypteryx bicolor Lesson, 1839, Rev. Zool. 2: 138. — Sumatra.
Erythrocichla bicolor whiteheadi Hartert, 1915, Bull. Brit. Orn. Cl. 36: 36. — Benkoker, Borneo.
Erythrocichla bicolor bankana Riley, 1938, Proc. Biol. Soc. Wash. 51: 96. — Klabat Bay, Banka Island.

Material. — ♂, 23.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180585, type of *E. b. bankana*).

According to Deignan (1961: 371), the type and only known specimen of *E. b. bankana* does not represent a valid subspecies.

Malacopteron affine (Blyth)

Tr[ichastoma] affine Blyth, 1842, J. As. Soc. Bengal 11: 795. — Singapore.
N[apothera] atricapilla Bonaparte, 1850, Consp. Gen. Av. 1: 359. — ex Malacca, Sumatra, Borneo = Doesoen, Borneo.
Malacopteron notatum Richmond, 1902, Proc. Biol. Soc. Wash. 15: 190. — Pulo Bang Karu, Banjak Islands (west coast of Sumatra).
Malacopteron affine phoeniceum Deignan, 1950, Zoologica (New York) 35: 127. — Segah River, eastern Borneo at ca. Lat. 2°56'N., Long 117°30'E.

Material. — ♀, not dated, "Macassar, Celebes", presumed to be from Bangka (Teysmann, received in 1878, RMNH cat. no. 3); ♀, not dated (Vosmaer, received in 1874, RMNH cat. no. 2).

The occurrence of this species on Bangka was recorded by Büttikofer (1895: 105), a record overlooked by Chasen (1935b) and de Schauensee (1958).

No author had been able to see any difference between specimens from Sumatra and specimens from Borneo, until Deignan (1950a) described the latter as representing a new subspecies, *M. a. phoeniceum,* which he diagnosed as being: "Strikingly different from *M. a. affine* of Malaya and Sumatra, and from *M. a. notatum* of the islands west of Sumatra, by having the pileum brownish to blackish-brown, paler anteriorly (*not* brownish black), and the remaining upper perts *much* more strongly rufescent, with the rectrices rich ferruginous". In spite of this definite statement, after a careful comparison of our material (29 specimens from Borneo, 8 from Sumatra) I must admit my inability to see any consistent difference between birds from these two islands. Previously, Voous (1961: 166) had already expressed doubt about the validity of *M. a. phoeniceum.* Deignan gave reasons why the strong rufescence he noted in his Bornean material could not be attributable to post-mortem changes of colour, but he made no mention of the existence of an immature plumage. Several of our birds from Borneo are immature, and they differ from the adults by having a more rufous plumage, this colour being especially conspicuous along the outer edges of the remiges and rectrices, and by having a reduced amount of black pigment on the crown. Apparently Deignan's Borneo sample included a large proportion of immature birds.

The years of collecting of our material range from 1826 to 1947, and I can

confirm Deignan's conclusion that post-mortem discoloration in this species is not serious.

Although the matter is of historical interest only, as I do not recognize a subspecies from Borneo, I draw attention to the fact that when Deignan named the Bornean population, he did not consider the name *Napothera atricapilla* Bonaparte (ex Müller, MS), of which the range was given in the original description as:"Malacca, Sumatra, Borneo". The type-locality appears never to have been restricted (probably because nobody regarded the name as valid), but Chasen (1935b: 215) gave it without comment as Sumatra and that is probably the reason why Deignan has ignored the name. However, at the time there was no material from Malacca and Sumatra in our collection, but there was and is a small series from Borneo (cf. Büttikofer, 1895: 105). Three of these specimens are provided with the manuscript name *Napothera atricapilla* Müll. Verh., viz., ♂, ♀, "Borneo", without date and collector's name (RMNH cat. nos. 1, 2), and ♀, 15.VIII.1836, Doesoen (S. Müller, RMNH cat. no. 3). There is a second ♀ from Doesoen, IX.1836, also collected by Müller (RMNH cat. no. 4), but it is not marked with the name *N. atricapilla.* Unfortunately these specimens, formerly mounted, have been taken off their socles by van Oort, who has thrown away the socles with their writing, as well as the old labels. He has often been extraordinarily careless when copying, so that the fact that on the label of the second Doesoen specimen he made no mention of the name *N. atricapilla* does not mean much. In any case, all the possible type-material is from Borneo, and the name is available to those who consider that the Bornean population merits subspecific separation.

The only other subspecies described is *M. a. notatum* from Bangkaru, Banjak Islands, which according to Ripley (1944: 381) would be tenable on the basis of large size. The validity of this character was denied by Voous (1950b), who first called *notatum* a poorly defined race, but farther on concluded: "that no post-Pleistocene differentiation has taken place in the West Sumatran Islands". As Ripley's published measurements of *notatum* are quite similar to measurements I took of our Sumatran birds (4♂, 3♀), and are not larger, I follow Voous.

Malacopteron cinereum cinereum Eyton

Malacopteron cinereum Eyton, 1839, Proc. Zool. Soc. Lond. 7: 103. — Malaya.

Material. — ♂, 2.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180587).

I have examined this specimen, which is a typical representative of the nominate race, to which it was also assigned by Deignan (1964: 264).

Pomatorhinus montanus bornensis Cabanis

P[omatorhinus] bornensis Cabanis, 1851, Mus. Hein. 1: 84. — Borneo.

Material. — ♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 4).

The subspecies inhabiting Borneo (*bornensis*) and Sumatra (*occidentalis*) are so similar as hardly to deserve recognition in nomenclature, but bills of Sumatran birds average a little larger, as stated in the original description of *occidentalis*. I cannot make anything of the supposed difference in colour of the rectrices also given in the original description (Robinson & Kloss, 1923a). The specimen from Bangka has a small bill and therefore must be assigned to *bornensis* by those who retain *occidentalis*. Its wing-length is 82 mm. As my personal knowledge of this species is confined to Java, where it is definitely a mountain bird, I was puzzled by the Bangka specimen, and wondered whether an error in labelling could have been made. However, the subspecies *bornensis* is known to range widely in the lowlands, as noted by Smythies (1981: 320): "Ranges from sea level to 5,500 feet". The subspecies was discovered by Diard in 1826. Two specimens collected by Diard near Pontianak are still in our collection; they bear in Temminck's handwriting the name *Pomatorhinus minutus* Nov. Sp., a name that has apparently never been published.

Stachyris maculata maculata (Temminck)

Timalia maculata Temminck, 1836, Recueil d'Ois. 2 (livr. 100): pl. 593 fig. 1. — à Borneo et à Sumatra.

Material. — ♀? im., 6.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180575).

Stachyris erythroptera pyrrhophaea (Hartlaub)

Timalia pyrrhophaea Hartlaub, 1844, Rev. Zool. 7: 402. — Malacca. Sumatra.
Cyanoderma erythroptera apega Oberholser, 1922, Smiths. Misc. Coll. 74 (2): 8. — Tanjong Tedong, Banka Island.

Material. — ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 4); ♀, 1.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180589); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180588, type of *C. e. apega*).

These birds belong clearly to the Sumatran subspecies, which is well-differentiated. Deignan (1964: 315) has also included Bangka as well as Billiton in the range of *S. e. pyrrhophaea,* hence it is surprising that Chasen (1937a: 227) stated of a single specimen from Billiton that:"Because of its bright upper parts this specimen agrees more closely with the Bornean than the Sumatran race. In detail it agrees precisely with the description given for the Bangka form which seems to be a well-marked race".

Mayr (1938: 39), following a suggestion made by Chasen & Kloss (1932), compared the type of *C. e. apega* with specimens from south Borneo, and concluded that it was quite different. He did not, apparently, compare the type with specimens from Sumatra, so that his conclusion does not conflict with that of Deignan and myself.

Macronous gularis bornensis (Bonaparte)

M[ixornis] bornensis Bonaparte, 1850, Consp. Gen. Av. 1: 217. — Borneo = Bandjermasin.
Mixornis bornensis ruficoma Oberholser, 1922, Smiths. Misc. Coll. 74 (2): 6. — Tanjong Tedong, Banka Island.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 6); ♀, not dated, "Macassar, Celebes", presumed to be from Bangka (Teysmann, received in 1878, RMNH cat. no. 8); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180590); ♂, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180591, type of *M. b. ruficoma*).

Unlike the majority of Oberholser's subspecies, *M. b. ruficoma* has not until now been rejected in current literature, but has been provisionally accepted as a form endemic to Bangka and Billiton (cf. Delacour, 1935, 1936, 1947: 256; Chasen, 1935b: 227; Deignan, 1964: 322). In view of the zoogeographic interest such a form would have in the light of the almost complete absence of endemism on Bangka and Billiton, a close study of the few specimens known from these islands was desirable. Our collection contains the two specimens from Bangka listed above (one of very doubtful provenance), and two specimens from Billiton (VI.1888, leg. Vorderman). In addition, I received on loan USNM no. 180590 from Bangka and USNM no. 180592 from Billiton. These birds differ at a glance from specimens of the nominate race of Sumatra, but I have been unable to find any good characters to distinguish them from our few specimens of *bornensis* (amongst which is the type

material) from southern Borneo. The measurements also agree entirely.

The subspecies *bornensis* is very close to *M. g. javanica* of Java; the former is perhaps a trifle deeper, richer brown on the upper parts, has on the average broader, darker stripes on the breast, and the under surface is a little deeper yellow in tone. The combination of these characters, none of which by itself is very satisfactory, is just enough to separate *bornensis* from *javanica*.

Macronous ptilosus reclusus Hartert
(tab. 11)

Macronus ptilosus reclusus Hartert, 1915, Bull. Brit. Orn. Cl. 36: 36. — Kina Balu, 1000 feet.
Macronus ptilosus minor Riley, 1937 (21 April), Proc. Biol. Soc. Wash. 50: 62. — Klabat Bay, Banka Island.
Macronus ptilosus sordidus Chasen, 1937 (December), Treubia 16: 228. — Billiton Island.

Material. — 2ϕ [♂, ♀], 1859/1861 (v. d. Bossche, RMNH cat. nos. 1, 2); ♂, ♀, 2.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM nos. 180577, 180578); ♂, 29.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180576, type of *M. p. minor*); ♂ [= ♀?], ♀, 5.VI.1905, Simpang (Hagen, ZSM).

It has long been known that the populations of this species inhabiting Malaya and Sumatra on the one hand, and Borneo on the other hand, differ mainly by the former having a large patch of ash grey on the middle of the belly, which is lacking in the latter.

Riley (1937) described and named birds from Bangka as being similar in plumage to birds from Borneo, but smaller. Later in the same year, Chasen (1937a) named *M. p. sordidus* from Billiton on the basis of being: "Intermediate in characters between the typical race of Malacca, which also inhabits Sumatra, and *M. p. reclusus* Hart. of Borneo. It resembles the former in the comparatively dark chestnut colour of the crown and the latter in the absence of a grey patch on the abdomen. It differs from both races in the paler, less orange washed under parts, the absence of colour being particularly noticeable on the breast".

When Riley named the birds from Bangka, he had not examined material from Billiton, and when Chasen described the birds from Billiton, he had not examined specimens from Bangka, and it is almost certain that he had not yet seen Riley's publication. Thus it was left to Deignan (1950b) to discuss these two names in relation to each other. He had no material from Billiton, but an: "Examination of Riley's original series shows that this race is indeed smaller than *reclusus* and that, moreover, it possesses the colour characters attributed by Chasen to *sordidus*. It seems highly likely that the birds of the two islands Bangka and Billiton must be called by one name". The name

Table 11. Measurements of *Macronous ptilosus*.

number/sex	wing	av. wing	tail	av. tail	tarsus	av. tarsus	entire culmen	av. entire culmen	exposed culmen	av. exposed culmen	
Borneo (*reclusus*)											
11 ♂	70-77	73.6	61-66	64.0	22-23¾	23.0	18-20	19.1	13½-17¼	15.2	
8 ♀	67-72	69.6	58-65	61.1	22-23	22.3	17-18¾	17.7	12¼-15	13.8	
Sumatra' = Borneo (*reclusus*)											
♀	72		67		24		20		15		1)
Bangka (*reclusus*)											
[♂]	75		66		23		18¾		14½		
[♀]	68		57½		23		18½		13		
♂ [= ♀ ?]	67		57		21¼		19		13		2)
♀	69		63		22½		18		14¼		2)
Billiton (*reclusus*)											
[♂]	76		67		23		18½		14		
[♀]	69		57		23		16½		13¾		
♀	69		62		22¾		17½		15		3)
Sumatra (*trichorrhos*)											
9 ♂	68-71	69.6	58-63	59.8	22-23½	22.8	17½-20	18.3	13-15	14.4	
5 ♀	61-69	65.4	52-62	58.8	22-23	22.3	17-18	17.6	13-15	13.6	

1) Syntype of *Timalia trichorrhos*.

2) These two specimens ZSM, all others RMNH.

3) Holotype of *Macronus ptilosus sordidus*.

minor being preoccupied, Deignan (1964: 325) used the name *M. p. sordidus* for birds from Bangka and Billiton.

I have tried to verify these characters (size and colour differences). To this purpose I have measured our, not particularly rich, material from Borneo, Bangka, Billiton and Sumatra (table 11). Small as the series are, nevertheless several interesting facts emerge, which I believe have not been recorded before. The first is that there is a clear difference in size between birds from Borneo (*reclusus*) and birds from Sumatra (*trichorrhos* or *ptilosus*), the second that there is a sexual difference in size, the third that birds from Bangka and Billiton agree perfectly in size with birds from Borneo, and are not smaller. On the basis of the sexual difference in size I have ventured to sex the two specimens from Bangka, and two from Billiton, which were not sexed. The three specimens from Bangka on which the name *minor* was based, supposedly two males and a female, had wing-lengths of 66, 67 and 68 mm; one may suspect missexing. The considerable variation between the five females from Sumatra (the individual measurements of the wing are 61, 62, 66, 69, 69 mm), also makes me suspect missexing, in particular of the two largest specimens. Additional and reliably sexed material from Sumatra is needed.

As regards the colour differences noted by Chasen (1937b): the absence (Borneo, Billiton and Bangka) or presence (Sumatra) of a patch of grey on the belly is of course an obvious one. Contrary to Chasen, I cannot see any difference in colour of the crown between specimens from Borneo and Sumatra. In both series there is a certain amount of individual variation. The "paler, less orange washed under parts" of *sordidus* are indeed visible in the type-specimen of that race (♀, 26.I.1937, Ajer Mali, Billiton, RMNH no.14048). The difference is partly due to normal individual variation, partly to this bird being more fully stuffed than our specimens from Borneo, which makes more of the duller basal portions of the feathers visible, and partly to the fact that in the critical region a patch of feathers is missing. A specimen from Bangka has the breast particularly richly coloured. There does not appear to be any excuse for maintaining a special name for birds from Bangka and Billiton, thus the names *minor* and *sordidus* are synonyms of *M. ptilosus reclusus*.

It is with considerable hesitation that I have, for the moment, retained the name *reclusus* for the subspecies inhabiting Borneo, Billiton and Bangka, as there is strong evidence that the name *trichorrhos* should be used for it. *Timalia trichorrhos* was described by Temminck (1836), with the provenance given: "On a trouvé cette jolie espèce à Borneo et à Sumatra, mais elle ne vit point à Java". When Hartert (1915) noted that birds from Sumatra and Borneo differ, he restricted the type-locality of *T. trichorrhos* to Sumatra, as

in his description, Temminck had stated: "milieu du ventre cendré", which is of course a character of birds from Sumatra, and would seem conclusive.

Our collection now contains three specimens of *M. ptilosus* that must have been in Temminck's hands when he described *T. trichorrhos*. One is a specimen from Pontianak, leg. Diard, the second is labelled as type of *Timalia trichorrhos* ♂, Borneo (no locality and collector's name), the third is also labelled as type of *Timalia trichorrhos* ♀, Sumatra. However, the last-mentioned specimen does not have a grey belly, and even if it has been missexed, it would be rather large for a Sumatran bird (wing 72 mm). Evidently it is a mislabelled specimen from Borneo. Therefore all extant type material is from Borneo, not from Sumatra. The figured specimen does not show a grey patch on the belly and may well represent the male from Borneo. This does not explain Temminck's statement that there is a grey belly. It is true that the Pontianak specimen has some grey showing on the centre of the belly: some feathers are missing so that the grey feather-bases of the surrounding feathers are visible; this may seem far-fetched, but Dupond (1942: 99) even recorded a specimen from Borneo which had the centre of the belly tinged with slate. However, Müller (1847: 396) mentions that he found the species: "in de vlakke houtbosschen van Indrapoera, aan de westkust van Sumatra". Although we have no skins from Sumatra, there is a skeleton from Sumatra collected by Müller (cf. van Oort, 1907: 231). Temminck may after all have had skins from the same source, or he may have used a description made in the field in Sumatra.

Gerygone sulphurea sulphurea Wallace
(tab. 12)

Gerygone sulphurea Wallace, 1864, Proc. Zool. Soc. Lond. (1863): 490. — Solor Island.
Gerygone modiglianii Salvadori, 1892, Ann. Mus. Stor. Nat. Genova 32: 52. — Balige, Si Rambè, Sumatra.
Gerygone salvadorii Büttikofer, 1893, Notes Leyden Mus. 15: 175. — Southern Borneo.
Gerygone modiglianii jacobsoni van Oort, 1909, Notes Leyden Mus. 31: 207. — Moeara Karang near Batavia; Batavia.

Material. — ♀, 8.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180608).

In the only comprehensive revision ever published of the genus *Gerygone*, Meise (1931) united *G. sulphurea* with *G. fusca* of Australia and a number of other forms, into one widely ranging species. Within this species, he retained as a special group the "*sulphurea*-Gruppe" which by subsequent authors has been restored to specific status (cf. Mayr, 1944: 160). Meise admitted to the

Table 12. Measurements of *Gerygone sulphurea*.

number/sex	wing	av. wing	tail	av. tail	tarsus	av. tarsus	entire culmen	av. entire culmen	exposed culmen	av. exposed culmen
Java (*sulphurea*)										
20 ♂	50-54	51.7	32-36½	34.0	16-18	16.9	11½-12¾	11.9	7½-9¾	8.8 [1]
8 ♀	47-51½	50.0	30-34	31.9	16-17	16.5	11¼-12¼	11.7	8¼-9¼	8.8
Sumatra (*sulphurea*)										
♂	53		35		16¼		12		8¾	
Bangka (*sulphurea*)										
♀	50½		32		17		12½		9¼	
Borneo (*sulphurea*)										
5 ♂	47-50½	48.9	29-32	30.4	15¼-16½	15.9	11-12	11.6	7½-8½	8.2 [2]
2 ♀	48, 50½		30, 32		16, 16½		11¾-12½		8, 8½	
ø	51		33½		16		12		8¼	
Flores (*sulphurea*)										
ø	47		-		-		12½		8	
Engano (*muscicapa*)										
2 ♂	51½, 51½		37, 37		17, 17		13, 13½		9¼, 9½	

1) Including 1 ♂, 1 ♀ syntypes of *G. modiglianii jacobsoni*.

2) Including 1 ♂, 1 ♀ syntypes of *G. salvadorii*.

sulphurea group only three subspecies, to wit: *G. f. sulphurea*, ranging from Malaya and the Philippines through all the Greater and Lesser Sunda Islands to Alor; *G. f. flaveola* from Celebes, and *G. f. saleyerensis* from Saleyer. A whole string of names was synonymized with *sulphurea*. Chasen (1935b: 171) followed Meise's revision, but later authors were not so sure; for example Junge (1938) found that specimens from Engano were: "much more yellowish below and greener tinged on the upperparts" than birds from Java. As Meise had stressed the point that there is a considerable individual variation, Junge was afraid to draw the consequences of his observations and kept birds from Engano under the name *sulphurea*. Ripley (1944: 395) noted the same differences in birds from Engano, as compared with two specimens from Sumatra and one from Bangka, and therefore he recognized the former under the name *G. f. muscicapa* Oberholser. In this connexion it should be mentioned that Meise had not personally examined specimens from Engano, and synonymized the name only on the basis of some measurements supplied to him by Riley. Ripley has not been generally followed; for example Delacour (1947: 269–270) still brought all Malaysian birds under the one name *sulphurea*. Smythies (1957: 731, etc.), on the other hand, without explanation re-introduced the name *salvadori* (sic, it should be *salvadorii*) for birds from Borneo. In summary it may be said that Meise's revision, based on a meagre material, is by no means definitive, and that such geographical variation as *G. sulphurea* may or may not show is still insufficiently understood.

I have been able to compare the specimen from Bangka with fair series from Java and Borneo, but only one specimen from Sumatra has been available, and only one from the Lesser Sunda Islands (Flores) — apart from the type of *Acanthiza tenkatei* Büttikofer which for comparison is almost useless. The Bangka specimen was found to differ from all other specimens by having the bill a little broader at the base. There are no plumage differences and as several authors have drawn attention to individual variation in the bill-shape (cf. Junge, 1938), I consider it likely that the Bangka specimen just happens to be an extreme individual variant in this character.

The two specimens from Engano are brighter yellow on the under surface than all specimens from other localities. In addition their tails seem rather long. In my opinion there can be no question but that *G. sulphurea muscicapa* is a valid subspecies.

On the other hand, I have failed to find any character by which the birds from Java and Borneo may be separated. The single bird from Sumatra has rather dark upper parts; probably this is just a matter of freshness of plumage. Although, lacking topotypical material from Solor, I cannot be definite, I believe that (except for *G. s. muscicapa*) Meise was right in uniting

all Malaysian forms under one name. From the table it looks as if Bornean birds might be a little smaller than birds from Java, but I doubt that the sexing of the specimens from Borneo is reliable.

Orthotomus atrogularis atrogularis Temminck

Orthotomus atrogularis Temminck, 1836, Recueil d'Ois. 3 (livr. 101): texte. — à Malacca et à Borneo; the type is from Malacca.
Orthotomus atrogularis eumelas Oberholser, 1923, Smiths. Misc. Coll. 76 (6): 6 — Tanjong Bedaan, Banka Island.

Material. — ♀, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 3); ♂, 9.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180597, type of *O. a. eumelas*).

Orthotomus ruficeps ruficeps (Lesson)

Edela ruficeps Lesson, 1831, Traité d'Orn.: 309. — la côte nord-ouest de la Nouvelle-Hollande. (Labillardière.) = Soerabaja, Java (Stresemann, 1953: 97).

Material. — [♀], 1859/1861 (v. d. Bossche, RMNH cat. no. 10); ♂, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180594); ♂, 9.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180596); ♀, I.VII.1904, Klabat Bay (Abbott & Kloss, USNM no. 180595); ♀, middle V.1905, Simpang (Hagen, ZSM no. A. 400).

Rhipidura javanica longicauda Wallace

Rhipidura longicauda Wallace, 1865, Proc. Zool. Soc. Lond.: 476. — Sumatra.

Material. — 2 ♀♀, 1859/1861 (v. d. Bossche, RMNH no catalogue numbers); ♂, IV-VII.1898, Soengailiat (Kannegieter, ANSP no. 56408); ♂, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180601).

Cyornis rufigaster rufigaster (Raffles)

Muscicapa rufigastra Raffles, 1822, Trans. Linn. Soc. Lond. 13: 312. — Sumatra.
Cyornis banyumas calocephala Oberholser, 1920, Proc. Biol. Soc. Wash. 33: 86. — Tanjong Tedong, Banka Island.

Material. — ♂, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180606, type of *C. b. calocephala*).

Hypothymis azurea prophata Oberholser

Hypothymis azurea prophata Oberholser, 1911, Proc. U. S. Nat. Mus. 39: 597. — Great Karimon Island, eastern coast of Sumatra.

Material. — ♂, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180602); ♀, 8.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180603).

Terpsiphone paradisi subsp.

Material. — ♂, 18.IV.1873 (Vosmaer, RMNH without number); ♂, ♀, 1.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM nos. 180598, 180599).

According to Chasen (1935b: 176-177; 1937a: 223-224; 1939b), no less than five subspecies of this flycatcher occur in Sumatra: the winter visitor *T. p. incei*, and the residents *T. p. madzoedi* (mountains of Atjeh), *T. p. indochinensis* (lowlands of northern Sumatra), *T. p. australis* (Lampong Districts, also Java and Billiton) and *T. p. affinis* (remaining parts of Sumatra).

If Chasen's classification is correct, the population from Bangka ought to be *australis*. Of the two males from Bangka, one (Vosmaer's) is in the black-and-white plumage, the other in the brown plumage. *T. p. australis* was, confusingly, based on a brown male which was only compared with *T. p. borneensis*, a subspecies in which adult males of the brown morph are unknown (cf. Owen, 1963). I have compared the brown male from Bangka with the type of *T. p. australis* (RMNH no. 14054) and found the two to be very close. The Bangka specimen has the upper parts, including the tail, very slightly richer, darker brown and the lower under parts a trifle more clearly tinged with pale buff. These differences would easily come within the range of individual variation. The female from Bangka is dorsally a little paler than both males.

Three males from Billiton, referred to *australis* by Chasen (1937a), were black-and-white. Chasen further said that this subspecies might be reasonably expected to occur also in the extreme south of Borneo, but, as noted above, adult males of the brown morph are unknown from Borneo. Whether the brown morph occurs on Billiton, remains to be ascertained, as all males hitherto recorded (Vorderman, 1890: 453-455; Chasen, 1937a) belonged to the black-and-white morph.

Muscicapa latirostris latirostris Raffles

Muscicapa latirostris Raffles, 1822, Trans. Linn. Soc. Lond. 13: 312. — Sumatra.

Material. — ♂, 1859/1861 (v. d. Bossche, RMNH without number).

Philentoma pyrhopterum pyrhopterum (Temminck)

Muscicapa pyrhoptera Temminck, 1836, Recueil d'Ois. 3 (livr. 101): pl. 596 fig. 2. — parties méridionales des îles de Borneo et de Sumatra.

Material. — ♀, 9.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180400).

Ficedula zanthopygia (Hay)

Muscicapa Zanthopygia Hay, 1845, Madras J. Lit. Sci. 13: 162. — Malacca (reference not verified).

Material. — ♂ im., 25.IX.1924, Strait Bangka, captured on board (Buitendijk, RMNH no. 5408).

Pachycephala grisola grisola (Blyth)

T[ephrodornis] grisola Blyth, 1843, J. As. Soc. Bengal 12: 180. — neighbourhood of Calcutta = Botanical Garden, Sibpur, near Calcutta (reference not verified; teste Mukherjee, 1970).

Material. — ♂, 10.VI.1904, Bukit Permisan (Abbott & Kloss, USNM no. 180576).

For the use of the name *grisola* for this species rather than *cinerea*, cf. Mukherjee (1970). It seems doubtful that any of the described subspecies is valid and the retention of a trinomial may not be justified.

Sitta frontalis frontalis Swainson
(tab. 13)

Sitta frontalis Swainson, 1820, Zool. Ill. 1: pl. 2. — Java and Ceylon, restricted to Ceylon by later authors.
Sitta frontalis saturatior Hartert, 1902, Novit. Zool. 9: 573. — Gunong Tahan 4000 and 5000-7000 feet.
Sitta frontalis hageni Parrot, 1907, Abh. Bayer. Akad. Wiss. (2) 24 (1): 244. — Simpang, Banka.

Material. — ♂, middle V.1905, Simpang (Hagen, ZSM no. A. 262, type of *S. f. hageni*).

In the current concept of geographical variation in this nuthatch, the range of the nominate race is interrupted by that of *S. f. saturatior*. The range ascribed to the former is Ceylon, India, South-East Asia south to Peninsular Thailand, and again southern Sumatra, Java and Bangka, whereas the range

Table 13. Measurements of *Sitta frontalis*.

number/sex	wing	av. wing	tail	av. tail	tarsus	av. tarsus	entire culmen	av. entire culmen	exposed culmen	av. exposed culmen
Ceylon (*frontalis*)										
2 ♂	79, 80		37, 39½		17, 18		17¼, 18		12½, 13½	
4 ♀	75-76	75.8	35-39	37.5	16½-16¾	16.7	16-18	16.7	12-12¼	12.1
Pegu (*frontalis*)										
♂	76		37		16		15		11	
Sumatra (*frontalis*)										
3 ♂	75-76	75.3	39-40	39.3	16-16½	16.2	17-17¼	17.1	11½-13	12.3
3 ♀	71-74	72.3	35-38	36.3	16-17½	16.5	15¼-16	15.7	11½-12	11.8
Bangka (*frontalis*)										
♂	79		43		16		15½		11½	[1]
Simalur (*frontalis*)										
4 ♂	79-82	80.5	42½-44	43.1	16¾-18	17.2	16-17	16.8	12¼-14	13.1
3 ♀	78-79	78.7	39-41	39.7	17-17½	17.2	16½-18¼	17.3	12¾-13¼	13.0
Java (*velata*)										
17 ♂	73-79	75.9	35-40	37.7	16-17½	16.7	15-17½	16.2	12-13½	12.4
10 ♀	70-74	72.8	35-38	37.3	15-17¾	16.6	15-16¾	15.9	11½-12½	12.0

[1] Type of *S. f. hageni*.

of the latter encompasses the Malay Peninsula, northern Sumatra and Simalur (cf. Greenway, 1967: 142).

An examination of the (not very rich) material in our collection leads me to disagree with the above classification. A comparison of specimens from Ceylon (6), Nepal (1), Pegu (1), Sumatra (6) and Simalur (7), showed that all these birds agree in having the under parts tinged buffy lilac. The series from Java (35), on the other hand, differs clearly in that the under parts are less brownish, more greyish lilac; the throats are more extensively white. Some specimens from Java have the under parts browner and approach in colour the specimens of the other series; these browner birds are juveniles (with dark bills) and immatures. The male from Udjung Kulon, Java, described by Hoogerwerf (1965c: 265) as being close to birds from North Sumatra, may have been immature. In my opinion, birds from Java are sufficiently distinct from Ceylonese birds to justify their recognition as a separate subspecies, *Sitta frontalis velata* Temminck, 1821.

Birds from Simalur are large, as previously mentioned by Hoogerwerf. Although on the basis of the material available to me there is a temptation to describe them as a separate subspecies, some specimens from Ceylon attain the same size, and the material from Sumatra is not very rich. I note that Hoogerwerf (l. c.) reports for males from Sumatra wing-lengths of 77, 79, 79, 79 mm, distinctly larger than my material. Like the whole collection from Simalur, the specimens of *S. frontalis* from that island are grotesquely overstuffed, and that contributes to giving them an appearance of large size. The type-specimen of *S. f. hageni* from Bangka is also fairly large (table 13).

Greenway (1967: 142) placed *Sitta frontalis chienfengensis* with a query in the synonymy of the nominate race, but that cannot possibly be correct, as its describers expressly state that *chienfengensis* is a yellow-billed form, whereas the nominate race belongs to the red-billed group of subspecies. *S. f. chienfengensis* was in its original description compared with the forms *solangiae* and *fortior*, which the authors of *chienfengensis* regarded as subspecies of *S. frontalis* (cf. Cheng, Ting & Wang, 1964), whereas Greenway listed *S. solangiae* as a separate species, with *fortior* as a subspecies. I have not examined material of *S. f. chienfengensis*, but on published evidence it looks as if its correct name should be *S. solangiae chienfengensis*.

Prionochilus percussus ignicapillus (Eyton)

Dicaeum ignicapilla Eyton, 1839, Proc. Zool. Soc. Lond. 7: 105. — Malaya.

Material. — 3 ♂, 2 ♀, "♀" = ♂ im., early VI.1905, Simpang (Hagen, ZSM).

In the light of the fact that Hagen obtained six specimens of this species, which suggests that at that time it was common, it is surprising that none of the other collectors has found it. The bird presumed to be an immature ♂ has a patch of red appearing on its breast.

Dicaeum trigonostigma trigonostigma (Scopoli)

Certhia (trigonostigma) Scopoli, 1786, Del. Flor. Faun. Insubr. 2: 91. — China (errore) = Malaya.

Material. — ♀ = ♂ im., ♀ juv., not dated (Vosmaer, received in 1874, RMNH without numbers); ♂ ad., early VI.1905, Simpang (Hagen, ZSM).

Anthreptes malacensis malacensis (Scopoli)

Certhia (malacensis) Scopoli, 1786, Del. Flor. Faun. Insubr. 2: 91. — no locality = Malaya.

Material. — 4 ♂, ♂ in change, 2 ♀, 1859/1861 (v. d. Bossche, RMNH without numbers); ♂, 12.IV.1871, presumably a copying error for 1872 (Vosmaer, RMNH without number); ♀, 13.IV.1872 (Vosmaer, RMNH without number); ♂ in ♀-plumage, 7.VII.1872 (Vosmaer, RMNH without number); ♂, 10.X.1872 (Vosmaer, RMNH without number); 2 ♀ = ♀, not dated (Vosmaer, received in 1874, RMNH without numbers); ♂, ♀, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM nos. 180612, 180613); ♀, middle V.1905, Simpang (Hagen, ZSM); ♂, 31.V.1905, Simpang (Hagen, ZSM); ♂, early VI.1905, Simpang (Hagen ZSM).

In recent years, the populations of *Anthreptes malacensis* inhabiting Sumatra, Bangka, Billiton and Borneo have been generally regarded as consubspecific (cf. Rand, 1967: 211-212), but Parkes (1971: 43) has resurrected *A. m. bornensis* for birds from Borneo, as he found these to be: "different from *malacensis*; males have the sides of the face redder (as described by Riley), the red of the scapular region decidedly darker, and the greater coverts edged with dark red instead of greenish". I have compared our large series of specimens from Sumatra, Bangka and Borneo, paying particular attention to the characters enumerated by Parkes, and in my opinion the birds from the three islands are absolutely identical. I must assume that Parkes's sample from Borneo was not representative. The characters given by Parkes are exactly those by which *A. rhodolaema* differs from *A. malacensis*: could there be occasional hybridization?

I have not examined topotypes of *A. m. bornensis* (from Bo Dui Island near Sandakan), but Riley included in his new subspecies specimens from eastern Borneo, whence I have seen material.

Nectarinia sperata brasiliana (Gmelin)

[Certhia] brasiliana Gmelin, 1788, Syst. Nat. (ed. 13), 1 (1): 474. — Brasilia (errore!) = Java, designated by Oberholser (1912: 18).
Nectarinia hasseltii Temminck, 1825, Recueil d'Ois. 4 (livr. 63): pl. 376 fig. 3. — Java.

Material. — ♂, 27.X.1872 (Vosmaer, RMNH without number); ♂, 6.IV.1873 (Vosmaer, RMNH without number); ♂, not dated (Vosmaer, received in 1874, RMNH without number); ♂, middle V.1905, Simpang (Hagen, ZSM); ♂, late V.1905, Simpang (Hagen, ZSM); ♀, presumed to be ♂ juv. by Parrot, late V.1905, Simpang (Hagen, ZSM); ♂, early VI.1905 (Hagen, ZSM).

Nectarinia insignis insignis Jardine

N[ectarinia] insignis Jardine, 1843, Natur. Libr. 5: 274. — nomen novum for *N. pectoralis* Temminck, nec Horsfield, Java.
Nectarinia pectoralis Temminck, 1822, Recueil d'Ois. 4 (livr. 23): pl. 138 fig. 3. — Java.
N[ectarinia] calcostetha Jardine, 1843, Natur. Libr. 5: 263. — E. Ind. Islands?
[Cinnyris] macklotii Bonaparte, 1850, Consp. Gen. Av. 1: 408. — nomen novum for *N. pectoralis* Temminck.

Material. — ♂, not dated (Vosmaer, received in 1874, RMNH without number); ♂, 4.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180615).

The occurrence of this species on Bangka had already been recorded by Junge (1936: 70) and Ripley (1944: 407), but was overlooked by de Schauensee (1958).

The rejection of the name *N. insignis* and the substitution of *N. calcostetha* is one of the innovations we owe to the notorious Oberholser (1912: 17 footnote) in his most notorious publication. The substitution took place in violation of the present Code of Nomenclature and is particularly regrettable as *N. calcostetha* has no clear type-locality. The type-locality was restricted by successive authors to Java (Oberholser, 1923: 229 footnote), Borneo (Baker, 1926: 373), Singapore Island (Chasen & Kloss, 1926: 207), and again Java (Robinson, 1927: 298 and Chasen, 1935b: 273). If I read Chasen correctly, the type-locality Java was substituted because on a later page Jardine named *N. insignis* from that island! All this would not matter overmuch if it was perfectly certain that the species does not show geographical variation anywhere in its range (this was the opinion of Rand, 1967: 242). Material in our collection, however, suggests that there is some geographical variation, especially in bill-size. In view of these uncertainties, I prefer to use the name *N. insignis*, which ought never to have been changed anyway.

Nectarinia jugularis ornata (Lesson)

Cinnyris ornata Lesson, 1827, Dict. Sci. Nat. (éd. Levrault) 50: 15. — no locality, but based on Temminck, pl. 138 fig. 1 = Java.
Nectarinia eximia Temminck, 1822, Recueil d'Ois. 4 (livr. 23); pl. 138 fig. 1. — Java. Preoccupied by *Nectarinia eximia* Horsfield.
Cinnyris ornata microleuca Oberholser, 1919, Proc. U.S. Nat. Mus. 55: 273. — Pulo Taya, off the southeastern coast of Sumatra.
Cinnyris ornata heliozeteta Oberholser, 1923, J. Wash. Acad. Sci. 13: 231. — Tanjong Rengsam, Banka Island.

Material. — ♂, 21.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180606, type of *C. o. heliozeteta*).

The name *C. o. microleuca*, based on specimens from P. Taya, more correctly P. Saja, an islet situated ca. 50 km south of the south-eastern tip of Lingga Island, which Oberholser convinced himself represented a subspecies endemic to that islet, has since been used for birds from Sumatra, Borneo, Malaya, and many smaller islands, including Bangka (cf. Chasen, 1935b: 277; Deignan, 1961: 496). As it is now generally agreed that *microleuca* is a synonym of *ornata*, there is no need for a further discussion.

Aethopyga siparaja siparaja (Raffles)
(tab. 14)

Certhia Siparaja Raffles, 1822, Trans. Linn. Soc. Lond. 13: 299. — Sumatra.
Aethopyga siparaja heliogona Oberholser, 1923, J. Wash. Acad. Sci. 13: 232. — Depok, Java.

Material. — ♂, not dated (Buddingh', received in 1866, RMNH without number); ♂, 27.IX.1872 (Vosmaer, RMNH without number); ♂, 5.X.1872 (Vosmaer, RMNH without number); ♂, 13.IV.1873 (Vosmaer, RMNH without number).

It appears that Oberholser's name *A. s. heliogona* has slipped into general use without having been re-evaluated, as all Oberholser's subspecies should be before they are accepted. Bartels & Stresemann (1929: 141) listed the name without comment. Kuroda (1933: 95) clearly had not examined specimens but accepted *heliogona* as Bartels & Stresemann had recognized it. Chasen (1935b: 275) listed it with an asterisk, meaning that he had been unable to examine material. As he mentioned in his introduction (Chasen, 1935b: xv): "In the great majority of cases these races have therefore been accepted". Delacour (1947: 314) listed *heliogona*, but gave no characters. Only Hoogerwerf (1965c: 282-285) actually studied material from Java and apparently concluded that *heliogona* could be recognized on the basis of slightly smaller size, compared

with *A. s. siparaja*. The measurements presented to support his conclusion are, however, unconvincing and moreover amongst Hoogerwerf's specimens of the nominate race there was not a single one from Sumatra, its type-locality. Like all Hoogerwerf's systematic publications, the approach in the present one is hesitant and confused; a subspecific name *casa* for birds from Nias is introduced apparently unintentionally. Therefore Hoogerwerf's paper cannot be regarded as conclusive.

Evidently, material of *A. siparaja* from Java is rare in collections and that is the main reason why *A. s. heliogona* has hitherto escaped from being synonymized. Fortunately, and adequate series was available to me, which has enabled me to make the very much overdue comparisons. Oberholser's (1923) description of *A. s. heliogona* reads as follows: "Similar to *Aethopyga siparaja eupogon* Cabanis, from Borneo, but smaller, and male with more extensively blackish, and less olivaceous (more purely grayish) posterior lower parts". Measurements of the type (♂ ad.): "Wing, 49.5 mm.; tail, 41; exposed culmen, 14.5; tarsus, 13.5; middle toe without claw, 13.5". It typifies the man that in this description no mention is made of the nominate race from Sumatra, so much nearer to Java than is Borneo (of course, *eupogon* is also a synonym of the nominate race), that there is no mention of the number of specimens examined from either Java or Borneo (only the type specimen from Java is listed), and that no comparative measurements are given.

A comparison between series from Java, Sumatra, Bangka and Borneo failed to reveal any consistent differences in plumage. I have also measured ten males from each of the three main islands, and the four males from Bangka. Measurements are presented in table 14. It is at once evident that measurements provide no basis for the recognition of subspecies either, so that *A. s. heliogona* may confidently be assigned to the synonymy of the nominate race.

When studying material of *A. siparaja* from Java, I became conscious of the very limited region this species has been recorded from: it is only known from the Province of West Java and even there appears to be very local in distribution (see also Bartels in Jacobson, 1911). Our collection contains 42 specimens from Java, some of which are without exact locality. The localities of collecting of these birds are: Depok, Buitenzorg and surroundings (Semplak, Gadok, Nanggoeng, Tjimoelang near Semplak, Tjibeber near Nanggoeng, Tjidjoedjoeng), Bolang, and in the eastern Preanger: Bandjar and Langgen. The 13 clutches of eggs are all from near Buitenzorg and do not add localities. In addition, the species has been recorded as an uncommon resident in the coastal region near Batavia (Hoogerwerf & Siccama, 1938: 211-212, s. n. *A. m. mystacalis,* cf. Bartels, 1939: 24-25, and Hoogerwerf &

Table 14. Measurements of *Aethopyga siparaja.*

number/sex	wing	av. wing	tail	av. tail	tarsus	av. tarsus	entire culmen	av. entire culmen	exposed culmen	av. exposed culmen
West Java										
10 ♂	49-52	50.2	37-41	39.1	13-14	13.5	16½-17¾	17.0	13¾-15	14.6
Sumatra										
10 ♂	48½-53	51.1	36-45	40.1	12½-13½	13.1	16¾-18½	17.5	13¾-15½	14.4
Bangka										
4 ♂	49-51	50.1	37-41	38.8	12¾-14	13.4	16¾-17	16.9	14-14½	14.2
Borneo										
10 ♂	49-53	51.1	35-41	38.6	13-14¼	13.5	17-18¾	17.8	14-16	14.7
Simalur										
4 ♂	50-52	51.0	36-39½	37.6	13-14½	13.7	16½-17¾	17.1	13¾-14¾	14.2
Nias										
5 ♂	50½-55	52.3	37-43	39.7	13-14½	13.7	16¾-18¾	17.8	14¼-15¾	14.9
Malacca										
1 ♂	50		37		13		17		14¾	

Siccama, 1939: 88). Nicholson (1881: 151) listed specimens from Genteng and Kosala in Bantam, collected by H. O. Forbes. I have failed to trace the specimen from Kosala, but the Genteng specimen is in the Liverpool Museum, from where I have obtained it on loan (♂ ad., 9.IV.1879).

Although Sody (1927a: 183) found a number of nests of *A. siparaja* near Buitenzorg, according to Hoogerwerf (1949: 102), *A. mystacalis* is much the commoner of the two species in the botanical gardens. Even in the comparatively small area around Buitenzorg, there appear to be great differences is density, in some places *A. siparaja* greatly outnumbering *A. mystacalis*, and in other places the opposite (Sody, 1927b: 197).

Hoogerwerf (1948: 135 and 1953: 504) listed *A. siparaja* from the nature reserves Udjung Kulon and Pulau Penaitan, but in later publications he (Hoogerwerf, 1970: 463, 1971: 129) expressly denied having observed it in Udjung Kulon, so that he had apparently come to doubt his earlier observations. If he confused *A. siparaja* and *A. mystacalis* in 1948, it is not unreasonable to assume that in 1953 he still did so, and this would make his few records from Pulau Penaitan also suspect.

In the early years, there was a great deal of confusion between *A. siparaja* and *A. mystacalis,* a confusion that even now has not been completely solved. There is no doubt about the identity of the bird described by Temminck (1822: pl. 126 fig. 3), the type specimen of *A. mystacalis,* but twenty-five years later apparently no males of *A. mystacalis* remained in our collection, for the specimens described by Müller & Schlegel (1845: 54-55) are clearly referable to *A. siparaja*, as pointed out by van Oort (1910: 160-161). Van Oort erred, however, in also identifying the female collected at Tjikao in July 1827, with nest and eggs, as *A. siparaja*, for it is definitely *A. mystacalis*. This is also in agreement with the figured egg, which is clearly that of *A. mystacalis* (cf. Müller & Schlegel, 1844: pl. 9 fig. 1).

Müller & Schlegel remarked that the two central rectrices are sometimes 28 mm longer than the next pair, and that is the only discrepancy in their decription, for strongly elongated central rectrices are a character of *A. mystacalis*, not of *A. siparaja*. Van Oort confirmed the character: "These two males are quite similar to males of *Aethopyga siparaja* (Raffles), only the middle pair of the tailfeathers is elongated and nearly twice as long as the other ones. They belong surely to *siparaja* Raffles and not to *mystacalis* Temminck". Robinson & Kloss (1924: 296) commented that they had never seen an example of *A. siparaja* with an elongated tail and suggested that it would be interesting to have the specimens in Leiden re-identified.

I have examined the two males. Firstly, it has to be stated that van Oort's description is misleading, inasmuch as it gives an impression that both

specimens have long central rectrices. Actually (and one can read this in the description by Müller & Schlegel), only one bird has them, the other one has a normal short tail (as a matter of fact, several rectrices are missing, including the central pair). The other has, however, the long central rectrices as described by previous authors; I measured for the tail a length of 63 mm, without the central pair 39 mm. Further examination has convinced me that the two central feathers do not belong to the bird but have been skillfully glued in. Unfortunately, this cannot be proved by counting the number of rectrices: the total number, including the long ones, is 12 as it should be, but the central feathers differ from the other ones in having a slightly more purplish, less violet gloss, and agree exactly with tail-feathers of *A. mystacalis*. Hence there can be no doubt that this specimen has been adorned with two central rectrices from *A. mystacalis*.

The study of *A. siparaja* inevitably led to the examination of material of related species, particularly *A. mystacalis* and *A. temminckii*. The tradition of treating these two as conspecific was established, as far as I have been able to find, by Robinson & Kloss (1923b: 352), who introduced the trinomial *A. mystacalis temmincki* without comment. Chasen (1935b: 274) observed that: "In some respects *mystacalis* and *siparaja* seem closer than do *mystacalis* and *temmincki*, but *mystacalis* and *siparaja* occur together in West Java". Delacour (1944: 35) added the concise statement that: "*Ae. mystacalis* and *Ae. temmincki* are conspecific in spite of the difference in the color of their long rectrices (glossy violet and vermilion scarlet)". The statement, expressed with so much force, is singularly lacking in supporting evidence. Anyway, it may fairly be stated that since 1923, *temminckii* has almost universally been regarded as a subspecies of *mystacalis*. The only dissentient I know of is Riley (1938: 497-498).

My opinion is that the two are definitely not conspecific. This opinion could, of course, be dismissed as a mere subjective disagreement, without the possibility of proof on either side. Just the same, I enumerate here the differences to support my views.

temminckii ♂	*mystacalis* ♂
larger, wing longer	smaller, wing shorter
bill a trifle larger	bill a trifle smaller
tail shorter	tail longer
upper parts bright red	upper parts darker red
middle of crown red	middle of crown violet
alula and wing-coverts broadly margined with red	alula and wing-coverts brownish black
flank feathers long and soft, very pale, but not clearly contrasting with the belly feathers	flank feathers white, contrasting with the grey belly feathers
edges of remiges yellowish olive, those of the inner remiges reddish	edges of the remiges greenish olive
temminckii ♀	*mystacalis* ♀
outer edges of rectrices reddish	no red in the plumage
edges of remiges yellowish olive	edges of remiges greenish olive
clutch size 3	clutch size 1

Comparative measurements of the two species are as follows. *A. temminckii*, 10 ♂: wing 53-58 (56.1), tail 43-61 (51.7), tarsus 13¾-15¼ (14.5), exposed culmen 14-16 (15.1) mm; *A. mystacalis*, 10 ♂: wing 49-52 (50.7), tail 55-66 (59.3), tarsus 13-15 (13.9), exposed culmen 13½-15 (14.0) mm.

The eggs of *A. mystacalis* and of *A. siparaja* are quite different, those of the former species being white with very small dark grey spots, those of the latter species salmon-coloured dotted with brownish. The normal clutch-size of *A. mystacalis* is one, that of *A. siparaja* two. Our collection contains 10 clutches of *A. mystacalis,* all of one egg; 13 clutches of *A. siparaja* from Java, of which 11 with two eggs and two (which may have been incomplete) with one egg; one clutch of two eggs from Sumatra. According to Hoogerwerf (1949: 244), *A. mystacalis* would sometimes lay two eggs, but he does not say on what this statement was based. In contrast, the only record I have been able to find of eggs of *A. temminckii*, is of a clutch of three! (Medway & Wells, 1976: 378). My attempt to trace these eggs, which were recorded by Mr. F. G. H. Allen, and have probably been collected by him, has failed: Mr. Allen has been unable to tell me where they are at present. Geographical variation in the number of eggs is a very common phenomenon in birds; nevertheless, the conspicuous difference between *A. mystacalis* with one egg and *A. temminckii* with three eggs, supports my opinion that they are different species.

Arachnothera longirostra cinireicollis (Vieillot)

Cinnyris cinireicollis Vieillot, 1819, Nouv. Dict. Hist. Nat. (nouv. éd.) 31: 502. — "Son pays ne m'est pas connu", without explanation proclaimed to be Malacca by Chasen (1935b: 281).

Material. — [♂], 1859/1861 (v. d. Bossche, RMNH without number); 2 [♂], [♀], 1869/1872 (Teysmann, received in 1872 from the Koloniaal Museum, Haarlem, RMNH without numbers); 2 ♂, IV-VII.1898, Soengiliat (Kannegieter, ANSP nos. 56781, 56783); ♂, ♀, early VI.1905, Simpang (Hagen, ZSM).

As I mentioned in one of the introductory chapters, of Kannegieter's four specimens labelled Soengailiat, two actually are from Bangka, the other two are from Java.

Until recently, birds from Sumatra and Bangka had been included in the nominate race, but Deignan (1963: 209) introduced a classification in which several subspecies are recognized from Bengal (type locality of the species) to Sumatra. I have been unable to find a published justification for this new classification and to satisfy my curiosity I have borrowed (from the British Museum) a few topotypical specimens from Bengal, which I compared with our adequate series from Sumatra (and Bangka). The difference was evident at a glance: Sumatran birds are a little darker on the upper parts and have conspicuously larger and heavier bills (even though there is a considerable individual variation in bill-size). Two specimens from Perak in our collection, almost topotypical of *cinireicollis* as restricted by Chasen, agree with Sumatran birds. As the restriction of the type-locality of *cinireicollis* to Malacca was quite arbitrary, it would be worth investigating whether, perchance, the type-specimen still exists. I presume, not, for a letter I wrote to Paris on the subject, remained unanswered.

Zosterops palpebrosa auriventer Hume

Zosterops auriventer Hume, 1878, Stray Feathers 6: 519. — Tavoy.

Material. — ♂, 8.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180617).

For a discussion of this specimen, I refer to a previous publication (Mees, 1954: 139-140, 152). In that paper, the inclusion of coastal eastern Sumatra in the range of the present subspecies was somewhat speculative, as no material was known to exist. We have since received two specimens collected at Naga Radja near Medan (♂, 7.II.1947; ♀, 26.VI.1948, leg. J. A. Kreuger, RMNH nos. 15957, 15958). The eggs from Batang Kwis recorded by de Beaufort &

de Bussy (1919: 270), about the identity of which I have expressed doubt (cf. Mees, 1957: 79), would also be referable to this subspecies.

Lonchura striata subsquamicollis (Baker)

Uroloncha striata subsquamicollis Baker, 1925, Bull. Brit. Orn. Cl. 45: 59. — Bankasoon, Tenasserim.

Munia striata sumatrensis Chasen, 1939, Treubia 17: 183. — Blang Kedjeren, Atjeh, North Sumatra, 800 metres.

Munia striata explita Chasen, 1940, Treubia 17: 261. — nomen novum for *M. s. sumatrensis* Chasen, nec *M. sumatrensis* Bartlett, 1888.

Material. — ♂, middle V.1905, Simpang (Hagen, ZSM); 2 ♂, ♀, late V.1905, Simpang (Hagen, ZSM).

The names *M. s. sumatrensis* and *M. s. explita* were missed by Mayr, Paynter & Traylor (1968: 374), the reason why I have listed them here. Our collection contains a small series of *L. striata* from Sumatra, including the type-specimen of *M. s. explita* (RMNH no. 14060), but only two very old specimens from the Malay Peninsula (islands of Penang and Salanga). As these two specimens do not differ clearly from Sumatran birds, I follow Mayr et al. (l. c.) in including the whole of Sumatra in the range of *L. s. subsquamicollis.*

Chasen (1939a) claimed *sumatrensis* = *explita* to be a very distinct subspecies, confined to North Sumatra. He stated unequivocally that South Sumatran birds are *subsquamicollis.* The fact that now I am unable to separate the type-specimen of *explita* from material collected in other parts of Sumatra, and that it does certainly not have: "the pale rump band and under parts much more heavily speckled and squamated with grey", suggests that the differences described by Chasen for birds from Atjeh, were due to their freshness at the time. Anyway, even in Chasen's view, birds from Bangka, adjacent to South Sumatra, would be *subsquamicollis* and not *explita.*

Aplonis panayensis strigata (Horsfield)

Turdus strigatus Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 148. — Java.

Material. — 3 ♂, ♂ im., 2 ♀, 2 ♀ juv., 1859/1861 (v. d. Bossche, RMNH without numbers); ♂, 1869/1872 (Teysmann, received in 1878, RMNH without number), ♂, 7.X.1872 (Vosmaer, RMNH without number); ♀, 10.X.1872 (Vosmaer, RMNH without number); ♂, 29.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180530); 2 ♀, 7.VI. 1905, Simpang (Hagen, ZSM).

Gracula religiosa religiosa Linnaeus

Gracula religiosa Linnaeus, 1758, Syst. Nat. (ed. 10) 1: 108. — Asia = Java.

Material. — 6 ϕ, 1859/1861 (v. d. Bossche, RMNH cat. nos. 20, 21, 22 and three without numbers); ♀, 21.V.1904, Tanjong Rengsam (Abbott & Kloss, USNM no. 180527).

Oriolus xanthonotus xanthonotus Horsfield

Oriolus Xanthonotus Horsfield, 1821, Trans. Linn. Soc. Lond. 13: 152. — Java = Blitar, East Java (cf. Horsfield, Zool. Res.).

Material. — ♂, 1869/1872 (Teysmann, received in 1878, RMNH cat. no. 26); ϕ im., 25.VII. 1872 (Vosmaer, RMNH cat. no. 38); ♀, 22.VI.1904, Klabat Bay (Abbott & Kloss, USNM no. 180529); 2 ♂, ♀, middle V.1905, Simpang (Hagen, ZSM); ♂, early VI.1905, Simpang (Hagen, ZSM); ♀, 15.VI.1905, Simpang (Hagen, ZSM).

Oriolus chinensis maculatus Vieillot

Oriolus maculatus Vieillot, 1817, Nouv. Dict. Hist. Nat. (nouv. éd.) 18: 194. — l'île de Java.

Material. — 2 ♂, 2 ♀, 1859/1861 (v. d. Bossche, RMNH cat. nos. 1-4); ♀, 5.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180528).

Dicrurus paradiseus platurus Vieillot

Dicrurus platurus Vieillot, 1817, Nouv. Dict. Hist. Nat. (nouv. éd.) 9: 588. — à Malabar, ainsi qu'à Siam = Malacca.

Material. — 12 ϕ, 1859/1861 (v. d. Bossche, RMNH without numbers); ♂, VI.1865 (Buddingh', RMNH without number); ϕ, not dated, "Macassar", presumed to be from Bangka (Teysmann, received in 1877, RMNH without number); ϕ, not dated (Vosmaer, received in 1874, RMNH without number); ♂, 2 ♀, IV-VII.1898, Soengailiat (Kannegieter, ANSP nos. 57044, 57045, 57046); ♀, 7.VI.1904, Tanjong Bedaan (Abbott & Kloss, USNM no. 180532); ♀, 19.VI.1904, Tanjong Pamuga (Abbott & Kloss, USNM no. 180533); ♀, 13.VI.1905, Simpang (Hagen, ZSM); ♀, 14.VI.1905, Simpang (Hagen, ZSM); ♂, 15.VI.1905, Simpang (Hagen, ZSM).

Artamus leucorhynchus leucorhynchus (Linnaeus) (tab. 15)

Lanius leucoryn[chus] Linnaeus, 1771, Mantissa Plant.: 524. — in Manillis.
Artamus leucoryn amydrus Oberholser, 1917, Proc. U.S. Nat. Mus. 54: 185. — Solombo Besar Island, Java Sea.

Material. — ♀, 1859/1861 (v. d. Bossche, RMNH cat. no. 9); ♂, not dated (Vosmaer, received in 1874, RMNH cat. no. 10); ♂, 1.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180535); ♂, 3.VI.1904, Tanjong Tedong (Abbott & Kloss, USNM no. 180536).

The populations of this species inhabiting Sumatra, Bangka, Billiton and Java have been assigned to *A. l. amydrus,* the type-locality of which is Solombo Besar in the eastern Java Sea, but Mayr (1962: 161) already observed that this subspecies is doubtfully distinct from the nominate race, the range of which is at present given as the Philippines and Borneo.

Therefore, I have compared the specimens from Bangka with material from Borneo, Sumatra, Java, and a few specimens from the Philippines. About colours, I can be short: there does not appear to be any consistent difference between the various populations. Measurements show that birds from Borneo and Sumatra average a little larger than birds from Java (table 15). Specimens from Borneo have also rather large bills, larger than all but a few specimens from Java. However, in Sumatra there is a greater individual variation in bill-size, some specimens having the bill as large as any Borneo bird, others agreeing in this character with average Java specimens. Stresemann (1913a: 289) ascribed to the nominate race a long, but relatively slender bill: my specimens from Borneo have not only rather long, but also thick bills. The only adult bird from Mindanao has a slightly smaller bill than the specimens from Borneo. There does not appear to be any ground for excluding Billiton, Bangka and Sumatra from the range of the nominate race. Neither do the somewhat smaller measurements of birds from Java merit recognition in nomenclature.

Although several authors have in more recent years commented upon the geographical variation of this species in some small part of its range, the subspecies nowadays accepted, and the characters ascribed to them, are still essentially those of Stresemann's (1913a) short revision of over seventy years ago (cf. Mayr, 1962; Etchécopar & Hüe, 1977). Stresemann's paper was published in the early days of ternary nomenclature when average differences in measurements and in tone of colour, found in small series, were considered sufficient for the formal description of subspecies. His paper abounds with qualifying remarks like: "in der Regel", "meist", "durchschnittlich", "gewöhnlich", etc. Although in the framework of this paper, my main interest in the species was to establish the correct name for the birds inhabiting Bangka, I have examined a few more specimens from outside Malaysia, on which I shall comment here.

The four available specimens of *A. l. humei* Stresemann from the Andamans, differ from Sumatran birds (the nearest population) merely by their slightly smaller bills and shorter wings, but many specimens from Java are indistinguishable.

Table 15. Wing-measurements of *Artamus leucorhynchus*.

		128	130	132	134	136	138	140	142	144	146	148	150
Andamans	♂	1											
	♀		1	1		1							
Sumatra	♂				1	3	2		1	2	1	1	3	2	2							
	♀			1	1	1		2	2	2	1		1	2								
	♀					1		1	1									1				
Bangka	♂					1																
	♀											1										
Billiton	♀									1												
Java	♂				2	2	3	4	5	3	1	2										
	♀		1	1	5	4	5	4	5	3	3		1									
Bali	♂								1					1								
	♀					1							1									
Philippines	♂				1					1												
	♀													1								
Borneo	♂											1			2							
	♀						1		1	1	2		1									
	♀										2											
N. Celebes	♂						1			1	1		1		1	1		1	2			
	♀					1								1								
C. Celebes	♂													1		1				1		
	♀													1			1					
Toekangbesi	♂														1				1			1
	♀															1				1		

It has been known for over a century that birds from the Celebes are large. Mayr (1944: 137) recorded for specimens from northern Celebes a wing-length of 138-147 mm, for specimens from southern Celebes only 131-141 mm, suggesting a cline of diminishing size going from north to south. Our specimens from the northern peninsula of Celebes and from central Celebes (Koelawi) do not differ much in size (cf. table 15). Material from South Celebes is not represented in our collection, but there are a few birds from the Toekangbesi Islands, S. E. of Celebes, and these are large (Kaledoepa ♂ 141 mm, Tomea ♂ 145, 149, ♀ 146 mm, Binongko ♀ 142 mm). Stresemann believed that *A. l. celebensis* Brüggemann was tenable on the basis of large size, including a long and slender bill, and being: "meist wesentlich heller" than the nominate race, but my material shows no such difference in colour. Mayr (1944: 137) regarded size alone as sufficient justification for the recognition of *celebensis*, but he compared it with the rather small birds from Timor only. For a discussion of variation in the Celebes region, see also Eck (1974).

Over twenty years ago, I mentioned that even the Australian race *leucopygialis* is so close to nominate *leucorhynchus* that its validity is questionable (cf. Mees, 1961: 124). I believe that a revision would lead to an extension of the range of the nominate race to the Andamans, New Guinea and Australia. Within this huge range, geographic variation in colour is negligible and variation in size is of a mosaic pattern that will gain nothing in clarity from being arbitrarily divided into a number of subspecies.

Platysmurus leucopterus leucopterus (Temminck)

Glaucopis leucopterus Temminck, 1824, Recueil d'Ois. 2 (livr. 45): pl 265. — Sumatra.

Material. — ϕ, 1869/1872 (Teysmann, RMNH without number); ♂, 2.X.1872 (Vosmaer, RMNH without number); ♂, 19.X.1872 (Vosmaer, RMNH without number).

Both subspecies of *P. leucopterus* have been described by Temminck: the nominate race as cited above, the subspecies *aterrimus* from Borneo in livraison 57. The dates of publication of the livraisons of Temminck's work are known accurately, thanks to Crotch, Sherborn, Mathews, and others. Livraison 57 was published on or before 23 April 1825 (cf. Crotch, 1868). This date is supported by evidence from other sources. Therefore I am puzzled and slightly shaken by the fact that in the description of *Glaucopis aterrimus*, Temminck states: "On le trouve dans les environs de Pontianak, sur la côte occidentale de l'île de Bornéo. Les sujets envoyés par M. Diard font partie du Musée des Pays-Bas".

Diard was in Pontianak from August 1826*) to June 1827 and correspondence in our archives shows that his collections from Borneo were received in Leiden in the morning of 8 October 1828. Diard's letters were accompanied by inventories of material shipped, and amongst the birds from Borneo he forwarded were two specimens of "*Glaucopis Nigra* n. sp. Diard", a name in which it is not difficult to recognize *Glaucopis aterrimus* Temminck. On the basis of this evidence, Temminck's description could not possibly have been published before October 1828, and quite conceivably several months later. This is at least 3½ years later than the date of publication currently accepted. Something remains to be cleared up here.

REJECTED RECORDS

Kannegieter's erroneous records have already been dealt with on a previous page and will not be repeated. Here only other literature records that for some reason are considered unsatisfactory, are listed.

Nettapus coromandelianus coromandelianus (Gmelin)

The supposed occurrence of this species on Bangka, as listed by Peters (1931: 171), Chasen (1935b: 61), de Schauensee (1958b: 281) and Johnsgard (1979: 456), is evidently based on Phillips (1923: 104), who refers for this locality to "(Parrot, 1910)", but in his list of references there is only one Parrot-1910, which is a paper on the avifauna of Corsica, so that presumably Parrot (1907: 285) is meant. Here, Parrot lists three specimens of *N. coromandelianus*: one from Sekajoe (Sumatra), one from Panjab (= Punjab) and one labelled "China". There is no mention of a specimen from Bangka, so that Phillips's record must be based on careless reading.

Pernis ptilorhynchus orientalis Taczanowski

Schlegel (1862: 3) listed this form, s. n. *Pernis cristata*, as: "Observé au Nipaul, dans l'Hindoustan et au Bengale, et dans les îles de Sumatra, Bangka et Java". He repeated this a few years later (Schlegel, 1866: 39, 74) and it is presumably on this basis that subsequent authors like Sharpe (1874: 348, s. n. *Pernis ptilonorhynchus*) and Chasen (1935b: 79, s. n. *Pernis apivorus japonicus*) have included Bangka in the range. Although it is possible that

*) In a letter addressed to Temminck, dated Soerabaja, 19 August 1826, Diard mentions his imminent departure (archives RMNH).

when he wrote this, Schlegel had received a specimen from v. d. Bossche in such a poor condition that it was thrown away on arrival, there is no traceable evidence that one ever existed. It is known that Schlegel often wrote from memory and that checking up on facts was not his strongest side. As *P. p. orientalis* is a migrant visitor which in winter is generally though thinly distributed throughout Malaysia, it may be assumed that it occurs regularly on Bangka, but I am concerned with definite records only, not with assumptions.

Sterna fuscata nubilosa Sparrman

There is no reason why de Schauensee's (1958: 282) observation of several individuals of this species in the Bangka Strait, on 24 November 1932, should not be correct, but the record is not accompanied by any description. This is particularly regrettable as the superficially very similar *Sterna anaethetus* is apparently much more common in the area. Our collection contains eggs of *S. anaethetus* from the "Witte Rots" near Kebatoe, ca. 60 km S. of Billiton (5 eggs, 5.VI.1936, leg. F. J. Kuiper, RMNH nos. 60279-60283, cf. Kuiper, 1937, and 9 eggs, 21.V.1953, leg. A. Hoogerwerf, RMNH nos. 75567, 75568).

As this paper is a historical record of collections made, a single field-observation does not really belong in it and therefore I feel justified in excluding *Sterna fuscata*, quite apart from some doubt I have about the identification.

Treron olax (Temminck)

Chasen (1935b: 15) and Peters (1937: 18) have included Bangka in the range of *Treron olax*. I suspect that this record is based on careless reading: in April 1905, just before his visit to Bangka, Hagen collected two specimens at Sekajoe along the upper course of the Moesi River, inland from Palembang in southern Sumatra. Because of the closeness of the dates, Chasen has apparently assumed that Sekajoe is on Bangka. Compare the discussion of the erroneous record of *Nettapus coromandelianus* above.

Phaenicophaeus diardi (Lesson)

One of the six Bangka specimens of *P. sumatrana* collected by v. d. Bossche (cf. Schlegel, 1864a: 54, no. 11: "Adulte à ventre très peu lavé de rouge-brun"), was re-identified as *P. diardi* by Büttikofer, and under that name has remained catalogued in our collection. The record was published by Büttikofer (1887: 31, s. n. *Rhopodytes Diardi*).

The specimen in question (RMNH cat. no. 4 of *P. diardi*) lacks all traces of chestnut on the vent, but then, all under tail-coverts are missing. The bill,

however, is larger than in most specimens of *P. diardi*, the feathers bordering the base of the maxilla are black, not grey, and the nostril is an oblique slit as in *P. sumatranus*, not a roundish hole as in *P. diardi*. Mainly on the basis of the last-mentioned character I have felt justified in changing its identification back to *P. sumatranus*.

Collocalia sp.

In October 1869, Teysmann (1873: 60-61) visited the caves of Tandjonglaiang, where he found large breeding-colonies of swiftlets, undoubtedly *Collocalia* (N. B.: Tandjong = cape; laiang or lajang = flying, gliding; lajanglajang = Malay name for swiftlets). His notes are of sufficient interest to be quoted here in full:

"Een andermaal begaven wij ons te voet, door de bosschen, naar gene zijde van den noordkant van Tandjong-laiang om de holen te zien, waarin eetbare zwaluwnesten zouden voorkomen, die wij dan ook werkelijk vonden, doch niet van de beste soort, daar de nesten uit fijne takjes van Casuarina en andere plantaardige stoffen waren samengesteld, slechts spaarzaam met de eetbare gelei te zamen gevoegd en ook daarmede aan de rotsen vastgehecht, zoodat het veel geduld vorderde om er de zuivere gelei, door weeking in water, uit te pluizen.

De zwaluwen (Cypselus of Collocalia nidifica?) vlogen bij groote zwermen om ons heen in en uit de holen; wij waagden het echter niet, de steile rotsblokken, die vóór den ingang waren opgestapeld, te beklimmen, maar de inlanders haalden er toch verscheidene nesten uit, die met trossen aan elkaar gehecht, met witte eieren of jonge vogels gevuld waren. De jongen wisten zich met hunne nagels in die nesten zoo vast te klemmen, dat ze geheel onbeweeglijk bleven, al keerde men de nesten ook om.

De holen, waarin deze vogels leven, bestaan niet uit kalkrots, zooals op Java, maar geheel uit granietblokken."

Megalaima corvina (Temminck)

Temminck (1831), in the introductory chapter to the genus *Bucco*, listed *B. corvinus* from: "les îles de Java, de Banca et de Sumatra; très-commun à Java". Probably this is no more than a lapsus calami, for in the text to the species, accompanying the plate, its range is given as: "les îles de Java, de Sumatra et de Bornéo". We know now that this is an endemic species of Java where, moreover, it is confined to the higher levels.

Hirundo rustica gutturalis Scopoli

On 11 May 1929, when passing through Strait Bangka on board of the steamer "Melchior Treub", Kuroda (1929) noted a few swallows of this species along the Bangka coast (besides four individuals of *Haliastur indus*). As *Hirundo rustica* is a numerous winter visitor to the region, and is known to stay until late in spring, there is no reason to question this observation, but for reasons given under *Sterna fuscata*, I exclude this single, somewhat casual, observation from the main list.

Pycnonotus luteolus luteolus (Lesson)

Büttikofer (1896b: 239) mentioned two specimens of this bulbul from Bangka (s. n. *Laedorusa luteola*), but he expressed doubt about their provenance by providing the locality with a query. Later, Finsch (1905: 90) pointed out that there had been a mix-up between specimens of *P. plumosus* from Bangka and specimens of *P. luteolus* from Ceylon, which accounted for the erroneous record.

Chloropsis cyanopogon cyanopogon (Temminck)

In an enumeration of specimens of this species in our collection, Finsch (1905: 86) listed one from Bangka, collected by v. d. Bossche (RMNH cat. no. 4). Although Chasen (1935b) missed this record, so that it has not entered the world literature, nevertheless I consider it useful to mention that in my opinion the specimen is a juvenile *C. sonneratii.* Under that name I have entered it in the list of material. The small measurements can be explained by the fact that the specimen is not yet fully grown.

APPENDIX 1

LIST OF BIRDS SUPPOSED TO HAVE BEEN COLLECTED ON BANGKA BY P. DIARD

Catalogue de quelques oiseaux collectés à Banka dans le cours de l'Année 1825.

Muscicapa Paradisi Lin. 1
Muscicapa Castanea Tem. 1
Pitta Thoracica Tem. 1
Turdus Mindanensis Lin. 1
Timalia Pileata Horsf. 1
Picnonotus Gularis Horsf. 1
Ceblepyris fimbriata 1
Turdus mutabilis Boie 1
Phyllornis Cochinsinensis Lin. 1
Turdus Varians Levail. 1
Lamprotornis Cantor Lin. 1
Lamprotornis Dominicanus Lin. 3
Gracula religiosa Lin. 3
Colaris orientalis Lin. 2
Ixos virescens Tem. 1

Iora scapularis Horsf. 2
Alcedo omnicolor 1
Alcedo collaris Lath. 1
Pomatorhinus montanus 1
Picus Miniatus Lin. 1
Picus validus Reinw. 1
Picus Leucogaster Reinw. 1
Bucco rosacei Collis 2
Bucco Versi Color Raff. 1
Columba vernans Lin. 1
Columba Aromatica Lin. 2
Columba Melanocephala 2
Columba Olax Tem. 1
Columba Phasianella Tem. 1
Columba Lacernulata 1
Columba Porphyrea Reinw. 1
Ardea sumatrana Raff. 1

Several species on this list are known to occur on Bangka, and others might conceivably occur, but what are we to think of *Columba Porphyrea* (= *Ptilinopus porphyreus*) and *Ixos virescens,* both mountain birds unlikely to occur on the low island of Bangka. *Alcedo omnicolor* (= *Halcyon cyanoventris*) is endemic to Java and the same can almost be said of *Columba Melanocephala* (= *Ptilinopus melanospilos melanauchen*), although there is a recent record from P. Tegal, Lampong Bay, off the south coast of Sumatra (cf. Holmes, 1977). *Timalia pileata* is common in Java, and again in parts of south-east Asia, but is not known from Malaya and Sumatra so that its occurrence on Bangka is most unlikely.

Pitta Thoracica (= *Stachyris thoracica*) is included in the avifauna of Sumatra in practically all literature available to me (Sharpe, 1883: 537-538; Vorderman, 1889: 404; Chasen, 1935b: 222; Deignan, 1964: 314, etc.), but surely on insufficient grounds. Of the two specimens in our collection marked as being from Sumatra, one is from the old collection, without any further indication as to its origin, the other one was purchased from Schlüter & Mass, and only bears their company label with written on it the scientific name and "Sumatra". The BM specimen from Sumatra was "purchased" and therefore is of equally unreliable provenance.

In summary: the evidence that the list does not enumerate specimens from Bangka, but specimens from Java, is overwhelming.

APPENDIX 2

BIOGRAPHIES OF COLLECTORS

Several of the persons who have contributed to the ornithological knowledge of Bangka were well-known naturalists, whose biographies and obituaries have appeared in the ornithological literature. Diard, Teysmann, Vorderman, Abbott, Kloss, Hagen, and also Buitendijk (cf. Holthuis, 1959: 28) come in this category. Note that four of these seven men were medical doctors. On the remaining four persons, v. d. Bossche, Vosmaer, Buddingh' and Kannegieter, virtually nothing is to be found in the ornithological literature, although the first two of them made the largest and the second largest collections ever obtained on Bangka and may rightly be regarded as the founders of ornithological knowledge of the island. Kannegieter has played a minor and moreover a dubious role in Bangka ornithology, but his ornithological accomplishments elsewhere (Nias and the Batu Islands) are considerable. It is only natural that in the course of this study, handling the specimens received through their generosity, I have become interested in these previously only shadowy personalities. The results of my investigations are presented here.

Van den Bossche, Jules Félicien Romain Stanislas, born Bergen in Henegouwen (= Mons, Hainaut, now in Belgium, at that time in the United Netherlands), 4 September 1819. When in his twenties, he lived in Sumatra as Controleur and Assistent-Resident. In 1850 he received the knight's cross of the Militaire Willemsorde, the highest military distinction of the Netherlands, for valiance in military and political actions in the interior of Palembang. After his return to the Netherlands, he was appointed Governor of the Kust van Guinea (Gold Coast), where he succeeded Gov. Derx. However, within a few months after his arrival, in 1857, ill health forced him to leave again, so that before the end of the year he was back in the Netherlands. He left Lt.-Col. C. J. M. Nagtglas behind as acting Governor, and in May 1858 Nagtglas was officially appointed as his successor (Nagtglas has also had great ornithological merits, cf. Gijzen, 1938: 136-138)*). Having recovered from his illness, v. d. Bossche returned to Netherlands-India: 1859-1861 Resident of

*) Our archives contain a copy of a letter from Schlegel to Nagtglas, dated 7 April 1859, in which Nagtglas is thanked for zoological material in spirits, sent to the Museum through v. d. Bossche in the previous year. This would be the material incorrectly ascribed to v. d. Bossche by Finsch. It is likely that v. d. Bossche has personally delivered this material at the Museum and that on this occasion the contacts were laid which resulted in the large collection from Bangka.

Bangka. On 7 April 1861, he was replaced by Resident Bosscher and transferred to Besoeki, again as Resident. This was followed on 6 November 1862 by his appointment as Governor of Sumatra's Westkust, which position he held until 1868. On 24 April 1868 he was installed as Raad van Nederlandsch-Indië. In January 1871, he retired from the colonial service and left for the Netherlands. He died in January 1889 off Aden, on board of the French Mailboat Djemnah, once more on his way to Netherlands-India.

Sources: De Indische Gids 11 (1889): 427-429; Gijzen (1938: 120-121); Archives RMNH; register Kanselarij der Nederlandsche Orden.

Buddingh', Johan Adriaan, born Sint Oedenrode (Noord-Brabant), 4 March 1840, son of Johannes Buddingh'. He was a nephew of Professor H. Schlegel, Director of the Rijksmuseum van Natuurlijke Historie, whose first wife's maiden name was Cornelia Buddingh'. Early in October 1861, he left for the Far East in the service of the Netherlands Indian Government. He expected to be sent to Japan to be trained as an interpreter in the Japanese language, but on his arrival in Batavia he was told that the Government was more in need of Chinese than of Japanese interpreters and he was packed off to China to learn Chinese. In Canton, he visited his cousin G. Schlegel (1840-1903), who was later to become Professor of Chinese in Leiden. From Amoy he forwarded several small consignments of natural history specimens: 7 birds, 11 birds' eggs, 6 reptiles, 4 fishes, 3 mammals, received on 1 June 1863; 7 birds received on 10 August 1863, and 37 birds, a pair of jaws of *Squalus* and a box with insects, which arrived on 23 March 1864. Our archives contain letters to his uncle H. Schlegel from Singapore (on his way from Batavia to Hong Kong), dated 21 February 1862, and from Amoy, dated 13 May, 13 and 15 September 1862, 4 June, 3 October and 8 November 1863. In his last letter he mentioned that he would soon leave China, as he could learn the Hakka language just as well in Borneo. Unfortunately there are no later letters, so that it is impossible to reconstruct the dates of his later postings and, more relevant, the exact duration of his stay on Bangka. The dates on labels of his specimens from Bangka range, however, from February 1865 to November 1866. Buddingh' has also collected invertebrates on Bangka, mainly Mollusca and Crustacea, and amongst the latter was a specimen that would become, more than eighty years after its receipt in 1867, the type of *Macrobrachium geron* Holthuis, 1950. He died at Padang, Batavia (Java), on 16 August 1870.

Sources: Centraal Bureau voor Genealogie, 's-Gravenhage; Archives RMNH.

Vosmaer, Jan Hendrik Gabriel, born Makassar (Celebes), 29 January 1830, son of Jan Hendrik Gabriel Vosmaer (1801-1834), Assistent-Resident of Maros (Celebes). Vosmaer was Administrator of the tin-mines at Blinjoe (Bangka), and subsequently Assistent-Resident of Billiton. He died at Tandjong Pandan (Billiton) on 19 April 1885. He married at Muntok (Bangka) on 10 February 1874, Adèle Constance Emilie Toorop, born Rembang (Java), 7 August 1849, daughter of Johannes Bernardus Toorop and his second wife Emilia Mary Beaver. She died at 's-Gravenhage (Netherlands) on 5 February 1918. She was an aunt of the well-known artist Johannes Theodoor (Jan) Toorop (1858-1928).

Sources: Nederland's Patriciaat 30 (1944): 365-379; Siebelhoff (1978?); Archives RMNH.

Kannegieter, Jan Zacharias, born Amsterdam, 1 May 1862, son of Jan Zacharias Kannegieter and Wilhelmina Hoogwerf. As a young man, he entered the service of J. A. H. Neervoort van de Poll (1862-1925), an entomologist of means who owned a private museum in "Beukenstein" at Rijsenburg, as assistant and as entomological collector. His first journey to the Far East took place in 1889/1891, when he collected in Ceylon (around the middle of 1889: Colombo, Belihal-Oya), Sumatra (1889: Serdang, Bedagei; April 1890: Ranau, Palembang, 2000-3000'; 1890: Batoe Radja, Goenoeng Dempo, Moeara Doewa, etc.) and Java (1890/1891: several localities in West Java). Kannegieter was an entomologist in his own right. In 1890 (when he was in the East), he joined the Nederlandsche Entomologische Vereeniging (cf. Tijdschr. v. Ent. 34: v). After his return, he contributed to the "Tijdschrift" an article on entomological collecting in the tropics. He also published three articles (one jointly with Neervoort v. d. Poll) in the "Notes from the Leyden Museum". In February 1890, Neervoort v. d. Poll presented to the Museum 43 bird-specimens from Ceylon ascribed to the voyage of Kannegieter. I checked several of these and found the majority to have original labels which show that the actual collectors were Br. and H. Geisler. I presume that Kannegieter has met the Geisler brothers either in Ceylon or later in Java and has purchased these specimens from them. There is no evidence that Kannegieter himself did any ornithological collecting during his first journey.

An incomplete itinerary of Kannegieter's later voyages, when he did collect birds, can be reconstructed from data on labels and from published information: Nias (14 November 1895 to 22 February 1896), Java (Tjibodas on the slope of Goenoeng Gede, following the stay on Nias), Batoe Islands (September to December 1896) and Bangka (13 April to 11 July 1898). Whether he returned home between 1896 and 1898 is not clear, but one would

almost expect so, as he would not have wanted to leave his young family for three years.

Kannegieter died in Rijsenburg on 16 February 1899. He had moved from Amsterdam to Rijsenburg in 1894. He was survived by his parents, by his wife (Anna Petronella Kleijn, born 's-Gravenhage, 15 July 1866) and by a son, Wijnand Louis, born Amsterdam 11 May 1892. After his death, his widow and son moved to 's-Gravenhage (The Hague).

It remains unclear how and why Kannegieter came to be interested in collecting birds. When considering the mix-up over the bird-specimens from Bangka, it might look as if he was not a very careful collector. However, in Kannegieter's earlier bird collections there is no evidence of errors in labelling, but the labels do give an impression of having been attached later, not in the field.

What Kannegieter did in the field, was attach to each specimen a small label with only a number on it. In addition, he kept a register in which date, locality, and colours of the unfeathered parts were recorded for each number. When Kannegieter returned from his last journey, perhaps already a sick man, the time and energy would have failed him to provide some of the birds with labels, or through some delay the material might have arrived only after his death. Under these circumstances, the definitive labels may have been added later by somebody not entirely familiar with Kannegieter's methods, or the registers might have become lost. There is no reason to suspect Kannegieter of carelessness in labelling. The Philadelphia specimens from Bangka and Java still have their original number tags, and on the basis of these it might even now be possible to separate the specimens from the two islands.

Kannegieter's name is commemorated in *Artamides Kannegieteri* Büttikofer (= *Coracina striata kannegieteri*), as well as in several insect names.

Publications: Kannegieter, 1891a, 1891b, 1892; Poll & Kannegieter, 1891.

Sources: Tijdschrift voor Entomologie 34 (1890-1891): v, and 42 (1899-1900): 37-38; Burgerlijke Stand Gemeente Driebergen-Rijsenburg.

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RECAPITULATION AND REGISTER

*) M = marine: tropical sea-bird, which may breed in the region; N = migrant (winter-visitor) from the North; R = presumed resident; S = migrant (winter-visitor) from the South.

MALURIDAE

Gerygone sulphurea sulphurea Wallace	R	130

SYLVIIDAE

Orthotomus atrogularis atrogularis Temminck	R	133
Orthotomus ruficeps ruficeps (Lesson)	R	133

MUSCICAPIDAE

Rhipidura javanica longicauda Wallace	R	133
Cyornis rufigaster rufigaster (Raffles)	R	133
Hypothymis azurea prophata Oberholser	R	134
Terpsiphone paradisi subsp.	R	134
Muscicapa latirostris latirostris Raffles	N	134
Philentoma pyrhopterum pyrhopterum (Temminck)	R	135
Ficedula zanthopygia (Hay)	N	135

PACHYCEPHALIDAE

Pachycephala grisola grisola (Blyth)	R	135

SITTIDAE

Sitta frontalis frontalis Swainson	R	135

DICAEIDAE

Prionochilus percussus ignicapillus (Eyton)	R	137
Dicaeum trigonostigma trigonostigma (Scopoli)	R	138

NECTARINIIDAE

Anthreptes malacensis malacensis (Scopoli)	R	138
Nectarinia sperata brasiliana (Gmelin)	R	139
Nectarinia insignis insignis Jardine	R	139
Nectarinia jugularis ornata (Lesson)	R	140
Aethopyga siparaja siparaja (Raffles)	R	140
Arachnothera longirostra cinireicollis (Vieillot)	R	146

ZOSTEROPIDAE

Zosterops palpebrosa auriventer Hume	R	146

ESTRILDIDAE

Lonchura striata subsquamicollis (Baker)	R	147