

**GEOGRAPHICAL VARIATION OF *CAPRIMULGUS*
MACRURUS HORSFIELD (AVES, CAPRIMULGIDAE)**

by

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With 3 plates, 3 text-figures and 2 tables

INTRODUCTION

The races of *Caprimulgus macrurus* Horsfield have been revised several times, most recently by Oberholser (1915). This work is now over sixty years old and it was exclusively based on the very inadequate material at the time available in North American collections, without any reference to the large series in the museums of London, Tring, Leiden, etc. As a result, much of Oberholser's revision is based on little more than guesswork (cf. Rothschild & Hartert, 1918: 321). Also, Oberholser omitted the races belonging to the "manillensis" group, although several years earlier Hartert (1906) had concluded that they are conspecific with *C. macrurus*.

My own work on the problem of the geographical variation of the species started over twelve years ago when, studying material from the Western Papuan Islands, I found myself unable to distinguish the numerous races that have been described from the eastern part of its range. Optimistically I announced a revision (Mees, 1965: 171-172). As in the publication mentioned a little-known name was re-introduced and a number of currently accepted names were placed in the synonymy, an explanation is now overdue. The reason for the delay is that completion of the revision took a much longer time than expected. The eastern subspecies did not present any particular difficulties as the material available in Leiden, augmented with a few small loans from other institutions, was adequate for an understanding of the geographical variation in that part of the range of the species. The situation in Borneo, however, could not be satisfactorily clarified with the available material. The Asiatic mainland and several island areas also presented difficulties which were partly insolvable because of insufficient material. Only in 1975 did I have an opportunity to pay a holiday-visit to the British Museum in Tring, where the large material of *C. macrurus* enabled me to solve many of the remaining problems.

In common with many other species of night birds, *C. macrurus* has a soft plumage with an intricate colour pattern. Many species of unrelated night birds, be they Strigidae, Aegothelidae, Podargidae, or Caprimulgidae, show a lot of individual variation; some species even have markedly distinctive (often rufous) colour phases, whereas in others there is just a large variation in colour, not sufficiently abrupt to be divided in phases. Compared with many other species of night birds, individual variation in *C. macrurus* is not excessive; there are no phases and birds belonging to one subspecies are reasonably homogeneous in appearance. Nevertheless a certain amount of individual variation exists and it is unfortunate that in the past this was not sufficiently appreciated, with the result that authors have based new subspecies on such variable plumage characters, studied in too limited material.

Another kind of variation appears to be due to postmortem changes. I do not fully understand these, but it seems that poorly made skins, as they become older, tend to change colour in the direction of brown, whereas well-made skins do not change much in colour. Partly it may be a matter of fat: greasy feathers assume a yellowish-brown tinge. Anyway, whatever its origin, this kind of non-genetical variation should also be taken into account in the study of the species.

I have no illusion that this review is definitive and present it without sense of accomplishment, but it will serve until such time as it is superseded by a better one.

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MAIN TRENDS IN GEOGRAPHICAL VARIATION

The subspecies of *Caprimulgus macrurus* can be divided in two groups. The most widely distributed group is the one including the nominate race, which may therefore be referred to as the "typical" group; it ranges from extreme north-western India and Ceylon through the whole of south-east Asia to Hainan, Borneo, Palawan, Sumatra, Java, the Lesser Sunda Islands, Moluccas, to New Guinea, New Britain, the Louisiades and tropical Australia. This group contains eight subspecies, differing in size, colour and colour pattern. There is a distinct sexual dimorphism in colour of the two outer rectrices on each side: in the males they have large white tips, in females these tips are smaller and usually tinged with cinnamon, less often white (pl. 2). There is a large triangular white throat-patch (pl. 1). Within this group the Andaman subspecies *C. m. andamanicus* is aberrant in that it has reduced white on the primaries.

The second group, the "manillensis" group, consists of three subspecies with the somewhat unusual distribution Philippines, northern peninsula of Celebes, and Soela Islands. It differs from the typical group by having shorter light tips to the outer tail feathers and by the absence of sexual dimorphism in this character: males and females have them white (pl. 3). Centre of the throat brown; white on the throat restricted to two small patches, one on each side (pl. 1).

In both groups there is a white speculum on the wing, occurring on the primaries 1-4; in males this patch is pure white, in females it is usually slightly smaller and tinged more or less with cinnamon. On the first primary the white is confined to a spot on the inner web, on the others it occurs on inner and outer webs, either as separate spots, or as a bar right across. This character also shows some geographical variation: as already mentioned, *C. m. andamanicus* has the wing-bar reduced in extent. In the "manillensis" group it appears slightly less well developed than in the typical group.

Older authors were well aware of the differences between the two groups, indeed, they were generally regarded as different species until Hartert (1906) united them, and by some authors for many years after that.

There is also considerable geographical variation in size (table I). The three subspecies of the "manillensis" group are all of equal size, small. The smallest subspecies of the typical group, *C. m. atripennis* from southern India and Ceylon is of about the same size as the "manillensis" group, or at most marginally larger; the next smallest subspecies are the nominate race and

C. m. schlegelii, with perhaps *C. m. andamanicus* and *C. m. johnsoni*, of which very few specimens were available, of about the same size. Surprisingly, *C. m. aripennis* is geographically nearest to the largest subspecies, *C. m. albonotatus*.

Weights. Weights, being three-dimensional, should show differences in size much better than linear measurements. Unfortunately only few weights have been available. ♂, *C. m. albonotatus* (BM no. 87.8.1.551): 2.6 oz. = 74 gr. ♂, *C. m. macrurus* (RMNH no. 66828): 65 gr. ♂, *C. m. schlegelii* from Halmahera: 79 gr. (Ripley, 1959). ♂, *C. m. schlegelii* from Batjan: 78 gr. (Ripley, 1964). 4 ♀, *C. m. schlegelii* from New Guinea (RMNH nos. 42480, 42481, 42482, 42483): 60, 72, 67, 71 gr. ♀, *C. m. manillensis* from Mindoro: 53 gr. (Ripley & Rabor, 1958).

One would expect the geographical variation in size also to be reflected in the size of the eggs. The species being common in most parts of its range, there is plenty of information, from which I present only a selection. Published average measurements of the small race *C. m. aripennis*, 25 eggs 30.1 × 22.2 mm, of the large race *C. m. albonotatus*, 50 eggs 32.2 × 23.0 mm (both from Stuart Baker, 1934), of the small race *C. m. macrurus*, 23 eggs 28.9 × 21.3 mm (Hoogerwerf, 1949), of the equally small race *C. m. schlegelii* the measurements, not averaged, of six eggs were 30-34 × 22-23 mm (Diamond, 1972) and of the larger race *C. m. bimaculatus* an unknown number of eggs, not averaged, from Sumatra measured 28-31 × 22-23 mm (Van Heyst, 1919), measurements agreeing well with those of eleven eggs from the same part of Sumatra provided by de Beaufort & de Bussy (1919: 251): 29-31 × 22-24 mm. Eggs of *C. m. bimaculatus* from Thailand were measured by Herbert (1924: 303): average 30.0 × 21.1 mm (number not given).

The figures indicate that, as was to be expected, the eggs of the largest race, *C. m. albonotatus*, are largest. As it is, for comparative purposes, not very useful to have measurements taken by diverse authors at different times, I have measured and weighed the eggs of the species in our collection (table II).

In a general way these figures confirm that the large race *C. m. bimaculatus* has larger and heavier eggs than the smaller nominate race (only of these two was adequate material available): 21 eggs of the former average 30.4 × 22.6 mm and 0.520 gr., 32 eggs of the latter average 29.3 × 21.4 mm and 0.453 gr.

The table is of interest in several other respects, which justify the presentation of these figures in full. For example we can see from it that on

Java Bernstein collected large and heavy eggs, whereas Verbeek had a preference for small and light eggs! Note that three out of Bernstein's five eggs are over 0.5 gr., a weight not attained by any of the 27 eggs obtained by other collectors, and that on the other hand three of Verbeek's seven eggs are well below 0.4 gr. The explanation for this kind of differences will obviously have to be sought in local conditions and not in the person of the collectors.

In the series from Java I have marked a few shells with an asterisk: these have very large blowholes. This would have influenced their weights. These eggs would also have been heavily incubated and therefore one might have expected these shells to be lighter than those of fresh eggs. Although the lightest egg of all is one of these, this egg is also by far the smallest of the series and considering that the large blowholes have already lowered the weights of the incubated eggs, there is no real evidence that shells of incubated eggs are lighter than shells of fresh ones.

Another point that requires to be mentioned is the considerable variation in size and weight of the eggs, especially of the latter. It is apparent that weights and to a lesser degree measurements have only a limited value when taken from small samples.

Colour variation in the eggs examined by me is not excessive, they all show rather large light brown and lavender grey spots on a pale background, which may vary from practically white to pale pinkish buff; only one clutch (Upper Chindwin, 19.IV.1915) is a little darker. An egg of *C. m. manillensis* described and figured by Oates & Reid (1903: 68, pl. I fig. 9) is quite typical. Baker (1934: 480) claimed the eggs of *C. m. atripennis* to be "quite unlike" the eggs of any other subspecies of *C. macrurus*, but this is not apparent from the description provided by Ali (1969: 196). Note that the description given by Ali & Ripley (1970: 18): "Cream or pale salmon-coloured . . . boldly blotched and spotted with black", is very different from that given the previous year by Ali; I cannot believe that it is correct. A feature of most egg collections is the large proportion of misidentified eggs and that, together with a certain amount of variation, would account for some of the discrepancies in published descriptions.

ZOOGEOGRAPHY

Stresemann (1939: 316; 1940: 423) assumed that *Caprimulgus macrurus* has colonized Celebes from the Philippines and that from there, by way of the Soela Islands, it has reached the Moluccas and other eastern localities. It appears now unlikely that this reconstruction is correct because the Moluccan birds belong to the typical group of subspecies, sharply demarcated against

the "manillensis" group of the northern peninsula of Celebes and of the Soela Islands. I agree with Stresemann that northern Celebes must have been colonized from the Philippines and the Soela Islands from northern Celebes, but there the expansion stopped abruptly. The pathway of colonization of the eastern part of the range has probably gone over Sumatra, Java and the Lesser Sunda Islands. From there it must have radiated into the Moluccas, New Guinea and Australia. Although unfortunately in the crucial area of the Lesser Sunda Islands the species is insufficiently known, all birds from there, from the Moluccas, New Guinea and Australia belong to the same subspecies and show in this huge area only very minor geographical variation (birds from the extreme eastern part of the range tend to have larger white tips to the outer rectrices). This suggests a recent expansion into this part of the range, especially since the geomorphology of this part of the world, with its numerous islands, is especially suitable for promoting geographical variation.

It is likely that Australia was colonized from Timor; Mayr (1944a, 1944b) has drawn attention to the important role this island has played in the colonization of Australia, indeed its geographical position makes it almost inevitable that Asiatic bird species would reach Australia through Timor. Whether New Guinea was subsequently colonized from Australia, or along a more direct route over the chain of islands connecting it with Timor, is less clear. Note that at present the two areas in Australia where the species occurs are widely separated, but as no subspecific differentiation appears to have taken place this separation must be comparatively recent, probably dating from after the last Pleistocene period of low sea-level. Alternately, two independent colonizations of Australia could have taken place, one from Timor as described, the other from New Guinea, but *à priori* this seems less likely. In the absence of facts, further speculation on the history of colonization of this part of the world by *C. macrurus* is meaningless.

On present evidence it is likely that the species originated in south-east Asia. The occurrence of well-marked subspecies in India and in the Philippines proves that these countries have been inhabited for a long time. How the contacts between the Asiatic mainland and the Philippines have been in the past: through south China and Formosa (where the species does not now occur), or through Borneo, remains uncertain. The close resemblance between the subspecies inhabiting continental south-east Asia, Sumatra, Borneo and Java, reflects the recent geological history, when the Sunda Shelf could have provided a continuous range.

Of particular interest and worth a careful investigation is the puzzling situation in the northern part of the Eastern Ghats, India, where the ranges



Fig. 1. Map showing the distribution of *Caprimulgus macrurus* and its subspecies: 1, *atripennis*; 2, *andamanicus*; 3, *albonotatus*; 4, *bimaculatus*; 5, *salvadorii*; 6, *johnsoni*; 7, *macrurus*; 8, *schlegelii*; 9, *manillensis*; 10, *celebensis*; 11, *jungei*. The ranges of the three aberrant subspecies forming the "manillensis" group are enclosed by a dotted line.

of the subspecies *C. m. atripennis* and *C. m. albonotatus* overlap without any sign of intergradation.

The apparent absence of the species from most of Celebes, combined with its presence on the adjacent smaller islands of Djampea and Saleyer, constitutes a zoogeographical puzzle for which I am unable to suggest an explanation.

HABITAT AND SOME HABITS

Throughout its range, *Caprimulgus macrurus* is an inhabitant of edges of forest and secondary growths, including bamboo groves, neglected gardens and rubber plantations. It avoids heavy forest as well as open country. Its recorded vertical range is from sea-level to about 2400 m (8000') in the Himalayas, to 2700 m (9000') in Yunnan (BM no. 1921.7.15.87, see also Rothschild, 1921: 24) and to almost 2000 m in New Guinea — the upper limit would usually co-incide with the upper limit of cultivation, providing the right kind of habitat, rather than that climatological factors would regulate it.

The day is spent on the ground, usually in deep shade, and generally the two birds of a pair are not far from each other. At night the species can be readily identified by its calls, which appear to be remarkably uniform throughout its range. It is perhaps of interest to mention that I have never heard *Caprimulgus macrurus* call in flight (though I have seen and heard many birds) and that on the other hand I have heard *Caprimulgus affinis affinis* Horsfield call in flight only and never when perched. Van den Assem's (1960) notes give the impression that he heard *C. macrurus* call more often on the wing than when perched; as this is contrary to my own experience just quoted, I asked Dr. van den Assem for particulars, from which it is evident that he also has heard the birds call mainly when perched, but they may apparently start calling when still flying, before alighting.

The calls have been described often, they have given the bird the name woodcutter or its equivalent in various languages, because of their chopping quality: "choop-choorr ... choop-choorr ...", or "choop-choop-choop-choop ...". The Sundanese name Manoek Tjoehtjoer (manook choohchoor) is an excellent onomatopoeia (cf. Bernstein, 1860: 1; Coolsma, 1913: 678). Edgar (1933) deemed it necessary to contend that the: "monotonously reiterated call is disagreeably familiar to most Europeans in Malaya". My personal appreciation of the calls is far more positive; I actually like them.

In view of the strong morphological differentiation of the Philippine race, I have wondered if that might perhaps also have differentiated in other aspects such as ecology and voice, and in literature there is a suggestion of an ecolo-

gical difference as Ripley & Rabor (1958: 72) describe the species as an inhabitant of lowland forests. However, information received from Dr. Rabor (in litt., 23.III.1964) is that: "The species calls 'Took-toor-r-r ... Took-toor-r-r ...', etc. It is found on the floor of secondary forests and inside patches of tree growths in open areas". This agrees perfectly with my observations on *C. m. macrurus*, *C. m. bimaculatus* and *C. m. schlegelii*, members of the typical group of subspecies. The notes of the well-marked race *C. m. andamanicus* are also similar (Osmaston, 1906; Abdulali, 1965).

Stuart Baker (1934: 480) claimed the voice and habits of *C. m. atripennis* to be very different from those of the other Indian subspecies; he based this partly on descriptions by older authors (cf. Baker, 1927: 362-363). It looks, however, if there has been confusion with some other species of nightjar, for Henry (1955: 160) in Ceylon and Ali (1969: 196) in southern India, described calls and habitat of this subspecies exactly like those of the other races.

Seasonality in calling deserves investigation. Osmaston (1921), who lived in Garhwal, U. P., India, heard the calls from the middle of March to the end of April, which appears a very short season. Osmaston also suggested migration, but if so that can only be on a very small scale as the subspecies concerned, *C. m. nipalensis* = *C. m. albonotatus* has never been found outside its accepted breeding range. Actually, there is no evidence that any race of *C. macrurus* is migratory at all. It is true that Bucknill & Chasen (1927: 141) believed that on Singapore Island there was: "a considerable influx of 'foreigners'" in autumn, but that has never been confirmed.

Normally the calls are heard in the dark, especially just after the evening twilight and just before the morning twilight, but there are records of its calling by day (Saunders, 1923; Edgar, 1933). Saunders, who lived in Singapore, heard the calls in all months of the year, but rarely in January and around the middle of the year. In Selangor birds call from September to June (Medway & Wells, 1976: 203). In Java the calls may be heard in most months; according to Verbeek (1930) the birds would be least vocal in the breeding season, when they would be too busy for much calling. In Sarawak, on the other hand, Smythies (1950) reported *C. m. salvadorii* in full voice in March and April, and found a bird breeding also in April. As Singapore and Java have much less seasonal variation in their climates than Garhwal, these observations are not really conflicting with those by Osmaston quoted above. In North Queensland, Barnard (1935) found that: "From the beginning of August to the end of January the birds call the whole time. During February the note is only heard at intervals, and from then until August the note is seldom heard". Near Ifar, northern New Guinea, van den Assem (1960) heard the calls from the second half of March to October.

The nominate race is relatively well-known. As early as 1860 Bernstein published notes on its life history, but the most complete record was provided by Verbeek (1930). Edgar (1933) gave some interesting information on breeding of *C. m. bimaculatus* in Malaya.

1. *Caprimulgus macrurus atripennis* Jerdon

Caprimulgus atripennis Jerdon, 1845, Ill. Ind. Orn., pl. 24 (letter press) — Eastern Ghâts, west of Nellore.

Caprimulgus spilocircus G. R. Gray, 1848, List Specimens Birds Brit. Mus. 2: 7 — based on Jerdon's pl. 24, hence an objective synonym of *C. atripennis*.

Caprimulgus macrurus aequabilis Ripley, 1945, Bull. Brit. Orn. Cl. 65: 40 — Trincomalee, north-east Ceylon.

Diagnosis. — A small subspecies, mainly characterized by having only few black feathers on the crown, and the grey feathers of the head very finely vermiculated. Outer tail-tips of females white or whitish, but also sometimes pale yellowish buff.

Distribution. — Ceylon and southern India, where along the Western Ghats north at least to Belgaum (Butler, 1881: 380), along the Eastern Ghats to as far north as Puri District (Abdulali, 1972); not recorded from the more arid interior.

Discussion. — Blanford (1895: 189) associated the birds from southern India and Ceylon with the nominate race from Java, an identity that is zoogeographically unlikely, but not without precedent. Notwithstanding the fact that Hartert (1896: 372) disagreed with Blanford and gave the differences between *C. m. atripennis* and *C. m. macrurus* very clearly, later British workers (cf. Whistler & Kinnear, 1935: 35-36; Whistler, 1944: 234) assigned birds from Ceylon to the nominate race, but did recognize *C. m. atripennis*, from which Ceylon birds differed in being: "definitely darker in tone throughout the whole upper surface, this being particularly marked on the collar, which is chocolate as opposed to rufous brown, and on the tails". Therefore it is not surprising that in the description of *C. m. aequabilis*, Ripley (1945) compared his Ceylonese specimens in the first place with material from Java. Ripley's description gives exactly the characters also evident in my material. Ceylonese birds differ from Javanese birds in having the brownish-grey feathers of the crown more finely vermiculated, almost smooth, and in having fewer black-centred feathers on the middle of the crown. It is apparent that there is no particularly close relationship between birds from Java and birds from Ceylon.

On the other hand, birds from Ceylon are extremely close to birds from peninsular India, adjacent to Ceylon, with which they have been regarded as identical by all authors prior to Whistler & Kinnear (1935), who observed

differences as cited above. Ripley (1945) apparently had no continental material of *C. m. atripennis* at all, he only quoted Whistler. Contrary to the subspecies *C. m. albonotatus* and *C. m. bimaculatus*, of which very large series are found in collections, continental material of *C. m. atripennis* is limited, and what there is, is old and not in a good condition. Nevertheless, originally I was inclined to recognize *C. m. aequabilis* as the material examined showed the differences previously noted by other authors. This was not surprising as much of the material I examined was the same as that studied by Whistler & Kinnear. Subsequently, however, I found in the British Museum additional specimens from continental India, collected more recently (Chitteri Range and Bandipur, see list of material), and these birds are greyer, less brown than the old material, and indistinguishable from Ceylonese birds. Therefore I am of the opinion that the slight difference between birds from Peninsular India and Ceylon, as noted in part of the series, must in some way and to some extent be due to fading. That old specimens are often lighter, more brownish, than fresh material, is suggested by material of several subspecies (see introduction). I believe, therefore, that it is justified to synonymize *C. m. aequabilis* with *C. m. atripennis*. Admittedly, fresh material from peninsular India is required and might possibly lead to a reconsideration of the validity of *C. m. aequabilis*.

In their key to the subspecies, Ali & Ripley (1970: 16) use the following character to distinguish between the subspecies: "Broad black streaks on crown largely confined to centre, *C. m. atripennis*" and "Black streaks on crown more scattered and less confined to centre, *C. m. aequabilis*", but the material examined by me does not show this difference, though, as mentioned above, both populations differ from the nominate race by this character.

Apparently Whistler & Kinnear (1935) were the first to draw attention to a difference between the females of *C. m. albonotatus* and the females of this race as follows: "In the first named the females have the tips of the outer tail feathers pale yellowish buff, so that they are easily distinguished from the male. In the other . . . the tips are normally white as in the males". Note the qualification "normally" in this quotation, which already suggests that there are exceptions. Indeed, whereas the difference holds in a general way, some females of *C. m. atripennis* have the tips more or less tinged with pale brownish, or pale yellowish buff, whereas a few females of *C. m. albonotatus* have them almost white.

Material. — Ceylon: ♂, 25.VI.1872, Rottorve Forest (BM no. 81.6.8); ♂, 27.VI.1872, S. Ceylon (BM no. 87.8.1.658); ♂, 13.VI.1873, Galle (BM no. 78.10.4.38); ♂, 19.VIII.1921, Kalutara District (RMNH no. 4938); ♂, 19.VIII.1921, Kalutara District (RMNH no. 4951); ♂, 2.I.1928, Tellula (BM no. Whl. 16459); ♂, 19.V.1944, Trincomalee (USNM no. 375000); ♂, 18.II.1947, Vakari, Eastern Province (BM no.

1947.4.6.31); ♂, 19.II.1947, Vakari, Eastern Province (BM no. 1947.4.6.33); ♂, 5.III.1949, Kandana (BM no. 1949.26.2); ♀, 18.X.1871, Galle (BM no. 81.10.25.7); ♀, 22.I.1922, Pannipitiya (RMNH no. 5007); ♀, 18.II.1947, Vakari, Eastern Province (BM no. 1947.4.6.32); ♀, 25.XI.1948, Mannar, North Province (BM no. 1949.26.1).

Peninsular India: ♂, 9.V.1871, Godavony = Godavari Valley near Bhadrachallam (BM no. 98.12.12.372); ♂, 2.II.1880, Nagargale, Wynaad (RMNH cat. no. 1); ♂, 8.II.1890, Kumta, Kanara (BM no. 1925.12.23.645); ♂, 26.XII.1893, Kanara (BM no. 1925.12.23.644); ♂, 23.I.1895, Kutjal, Kanara (BM no. 1925.12.23.680); ♂, 23.XI.1939, Bandipur, ca. 3300', Mysore State (BM no. Whl. 16460); ♀, 15.IV.1871, Kotagherry = Kotagiri (BM no. 87.8.1.656); ♀, 22.IV.1881, Manantoddy, Wynaad (BM no. 87.8.1.655); ♀, 6.IV.1890, Sirsi, Kanara (BM no. 1925.12.23.646); ♀, 24.XII.1893, Kanara (BM no. 1925.12.23.648); ♀, 5.VI.1929, Chitteri Range, 2000' (BM no. Whl. 16458); ♀, 18.VI.1929, Chitteri Range, 2000' (BM no. 1937.12.21.112).

2. *Caprimulgus macrurus andamanicus* Hume

Caprimulgus andamanicus Hume, 1873, Stray Feathers 1: 470 — Jolly Boys, an island in Macpherson's Straits, at the south of the South Andaman.

Diagnosis. — A rather small subspecies, which is a little darker than surrounding forms. Males are characterized by having a reduced but variable amount of white in the wing; females have the light spots in the wing much reduced, and have the throat-patch pale cinnamon rather than white. The vermiculations on the head are coarse, in which character this subspecies differs from *C. m. atripennis* and agrees with *C. m. bimaculatus* of Sumatra and the mainland of south-eastern Asia.

Distribution. — Confined to the Andaman Islands, where probably widely distributed in the main group of islands. Apart from the localities and islands whence material was examined (see below), I found records from Baratang Island (Osmaston, 1906) and Long Island (Abdulali, 1965). The fact that there are no records as yet from North Andaman and from Ritchie's Archipelago is probably fortuitous, but it is likely that the species is actually absent from Little Andaman, as it is from Car Nicobar and the Nicobars.

Discussion. — Of the only two males of this race which I could examine, one had the white wing speculum much reduced, compared with birds of neighbouring continental races, but in the other (BM no. 88.10.3.156) I noted broad white over four primaries. It appears therefore that this is variable and not always reliable as a subspecific character. All females, on the other hand, have the pale spots on the primaries very small. Note that my material does not support the key-character provided by Ali & Ripley (1970: 16): "Wing-spots generally rufous in both sexes".

The reason why *C. m. andamanicus* has been placed next to *C. m. atripennis*, is not that I believe these two to be closely related. I believe *C. m. andamanicus* to have been derived from the nearest mainland (Burma), but as it is a distinctive isolated subspecies, I did not want to place it in such a way

that it would interrupt the sequence *albonotatus-bimaculatus*, subspecies which intergrade smoothly over a wide area.

Material. — ♂, 19.V.1873, Port Blair, South Andaman (BM no. 87.8.1.649); [♂], 3.IV.1874, Stewart's Sound, Middle Andaman (BM no. 88.10.3.156); ♀, 22.IV.1873, South Andaman (BM no. 88.10.3.154); ♀, 28.VII.1873, Port Blair, South Andaman (BM no. 88.10.3.123); ♀, 4.II.1874, South Andaman (BM no. 88.10.3.121); ♀, 4.IV.1874, Sound Island (BM no. 87.8.1.653); ♀, 10.III.1875, South Andaman (BM no. 88.10.3.155); [♀], undated, Port Blair, South Andaman (BM no. 87.8.1.650).

3. *Caprimulgus macrurus albonotatus* Tickell

Caprimulgus Albonotatus Tickell, 1833, J. Asiat. Soc. Bengal 2: 580 — jungles of Borabhúm and Dholbhúm = Dampára¹).

Caprimulgus nipalensis "Hodgson" Hartert, 1892, Cat. Birds Brit. Mus. 16: 540, 541 — the foot of the Himalayas and especially ... Nepal²).

C[aprimulgus] macrurus nipalensis Hartert, 1896, Ibis (7) 2: 373 — Nepal and the lower parts of the Western Himalayas.

Caprimulgus macrurus hodgsoni Stuart Baker, 1930, Fauna Brit. Ind. Birds, 2 ed. 7: 372 — nomen novum for *Caprimulgus nipalensis* Hartert, 1892, believed to be pre-occupied.

Caprimulgus macrurus noctuwigilus Koelz, 1954, Contrib. Inst. Reg. Expl. 1: 26 — Bhadwar, Kangra District, Punjab.

Diagnosis. — The largest and palest, "blondest" race, well-differentiated by size and plumage from all other races except *C. m. bimaculatus*, into which it merges gradually in the eastern end of its range, to such an extent that the boundary between the two races is arbitrary. Outer tail-tips of females pale yellowish buff, only occasionally almost white.

Distribution. — Northern India to as far west as Kangra District, the Ganges valley, Nepal, west and east Bengal east to Assam and the Burmese border. In Assam and Upper Burma populations intermediate between this subspecies and the next one occur. In the Eastern Ghats, *C. m. albonotatus* ranges down to about 18°N (see Discussion). Ripley (1961: 203) included Pakistan (West Pakistan) in the range, but this was no longer done by Ali & Ripley (1970) and I have been unable to trace any records from Pakistan. The fairly large series collected by Whistler and Koelz in the Kangra

¹) The type-locality may be restricted to Dampára in Dholbhúm on the basis of the vernacular name given by Tickell: Dampára Night-jar. I have failed to find the locality on any of a number of maps consulted, but according to Ali & Ripley (1970: 16) it is in Chaibasa district, Bihar.

²) In 1892, the year of publication generally cited, Hartert did not intend to introduce this name, but listed it for purposes of discussion only and specifically denied its validity. I would prefer to date the name from 1896, but under article 11(d) of the International Code of Zoological Nomenclature, as emended in 1963, the name *nipalensis* may stand as valid from 1892. Peters (1940: 206) and Ripley (1961: 203) have used the spelling *nepalensis*, but in both places indicated, Hartert spelled the name *nipalensis*.

district, not far from the Pakistan border, suggest that the range does extend into that country.

The maximum altitude indicated on a label is 5000', or ca. 1500 m, at which level there is proof of breeding (cf. specimen BM no. 1949.25.1057), but Ali (1949: 153) gives a vertical range of up to 8000' or 2400 m. Smythies (1947) believed to have seen a bird of this species at 12000' (3600 m).

Discussion. — Except for the area of intergradation with adjacent *C. m. bimaculatus*, as mentioned under the heading Distribution, this form is, within its fairly extensive range, comparatively uniform. Even its author expressed the opinion that *C. m. hodgsoni* (nom. nov. for *C. m. nipalensis*) was "rather doubtfully distinct" (Stuart Baker, 1934: 482), and both this name and *C. m. noctuwigilus* were synonymized with *C. m. albonotatus* by Ripley (1961: 203). The material studied by me fully confirms Ripley's conclusions.

Contrary to expectation there is no clear size gradient within the range of this subspecies. The largest bird at hand is from Sitapur (wing 230 mm), and the smallest is from Hasimara, T. E., Duars (wing 196 mm), in the eastern part of the range; the only other specimen with a wing-length of less than 200 mm is from Ningpoh (wing 197 mm), in the extreme eastern part of the range, but the next smallest is from Jerripanie, Mussoorie (wing 201 mm), in the most western part of the range. Koelz (1954: 26) also recorded a fairly large variation in series from one locality.

Ripley (1961: 204) stated under *C. m. atripennis* that that subspecies would be "grading gradually" into *C. m. albonotatus*. Ali & Ripley (1970: 17) mentioned intergradation between *C. m. albonotatus* and *C. m. atripennis* in the following words: "... in ... northern Andhra (in the E. Ghats) south to ca. 18° N. lat. (Anantagiri), the population hereabouts being largely intermediate with the southern *atripennis*". This, however, is evidently a misinterpretation of remarks made by Whistler in Whistler & Kinnear (1935: 36). Whistler recorded a single specimen of *C. m. albonotatus* from Anantagiri. The measurements provided (wing 210, tail 169 mm) are average for this race and are far too large for *C. m. atripennis*. The appended discussion reads as follows: "I am not able to follow Stuart Baker ... in his division of this Nightjar of Northern India into two forms. Birds from the Eastern and Western Himalayas appear to me to be identical in colour and size and with them must be grouped the winter series from the United Provinces. They run slightly larger than the small series of birds available from the Chota Nagpur area. These topotypical birds are in truth intermediates between the large pale birds of Northern India and the small dark *atripennis* of the south, but as they are far closer in size to and agree in

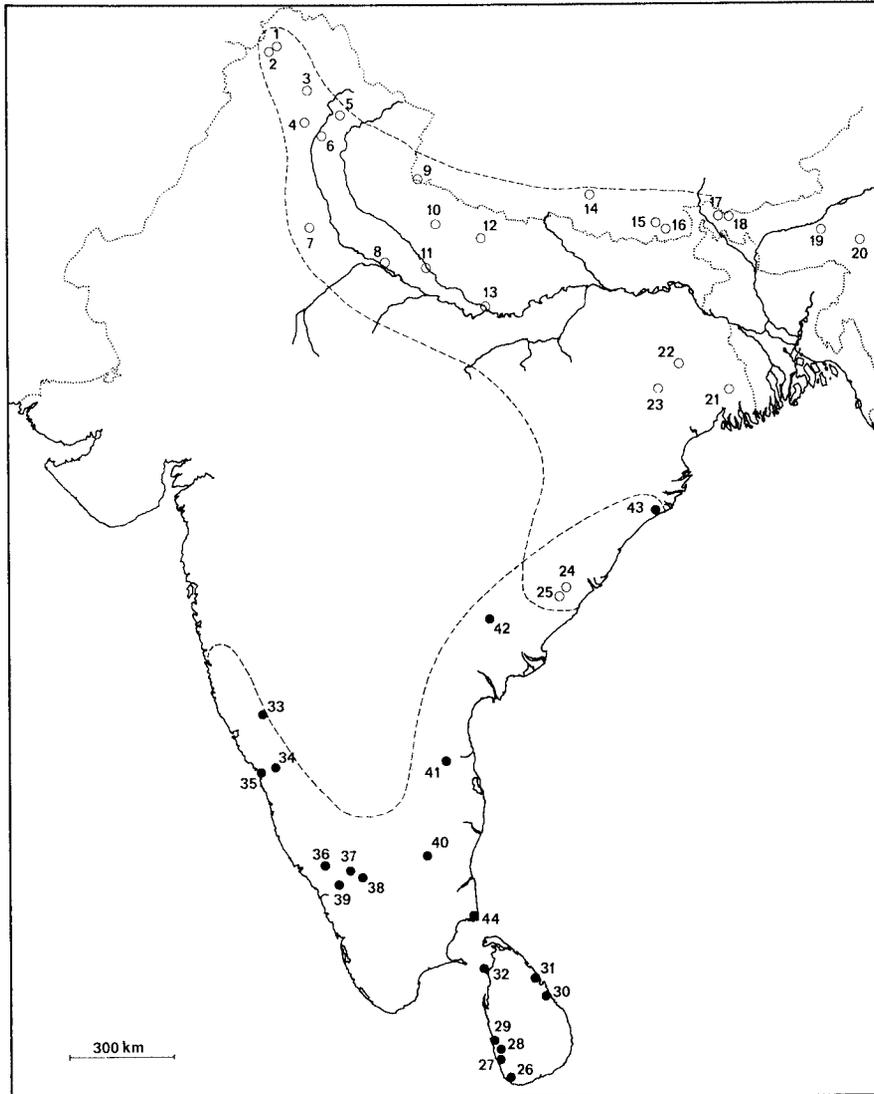


Fig. 2. The distribution of *C. m. albonotatus* (circles) and of *C. m. atripennis* (dots), from specimens examined and a few reliable literature records.

C. m. albonotatus: 1, Dharmsala; 2, Kangra; 3, Simla; 4, Ambala; 5, Mussoorie; 6, Saharanpur; 7, Bahadurpur; 8, Etawah; 9, Bilauri; 10, Sitapur; 11, Cawnpore; 12, Gonda; 13, Allahabad; 14, Katmandu; 15, Chatra; 16, Haraencha; 17, Rajabhatkawa; 18, Hasimara; 19, Nongpoh; 20, Gunjong; 21, Calcutta; 22, Maumbhoom; 23, Dampára (type locality); 24, Anantagiri (Whistler, 1935); 25, Lamasinghi (Abdulali, 1972).

C. m. atripennis: 26, Galle; 27, Kalutara; 28, Pannipitiya; 29, Kandana; 30, Vakari; 31, Trincomalee; 32, Mannar; 33, Belgaum (Butler, 1881); 34, Sirsi; 35, Kumta; 36, Manantoddi; 37, Bandipur; 38, Kotagiri; 39, Nilambur (Koeltz, 1947); 40, Chitteri Hills; 41, West of Nellore (type locality); 42, Bhadrachalam; 43, Berbera (Abdulali, 1972: the exact locality, in the Puri District, was not found and is only approximately correct); 44, Point Calimere (Abdulali, 1972).

colour with the northern birds they may well give their name to the whole area". It is evident that what Whistler is discussing here, is not the bird from Anantagiri, but topotypical material of *C. m. albonotatus* from Bihar and Bengal. It looks as if two errors have been made: Ripley and Ali & Ripley mistakenly transferred Whistler's discussion to the Eastern Ghats; Whistler mistakenly assumed intergradation with *C. m. atripennis* in Bengal, when the possibly somewhat smaller size and darker colour of eastern birds should actually have been ascribed to a slight influence of *C. m. bimaculatus*. I conclude that at present there is no evidence at all that *C. m. albonotatus* and *C. m. atripennis* intergrade. Whistler (l.c.) mentioned that according to La Personne, the collector of the specimen from Anantagiri, *C. m. albonotatus*: "was common throughout the hills of the Vizagapatam district. The testes were greatly enlarged, so it is evident that the breeding season here includes May". Confirmation that *C. m. albonotatus* breeds in the Vizagapatam Ghats came from Abdulali (1972), who collected a juvenile bird. About this specimen, Mr. Abdulali (in litt., 6.XII.1976) provided me with the following additional information: "I obtained it on 28th May 1944. Both the wings and tail have all the feathers in quills and I do not think that there can be much doubt that this was hatched nearby".

For comparison: the specimen of *C. m. atripennis* from Berbera, Puri District, was collected on 17.I.1950 (Abdulali, in litt., 14.I.1977) and the bird from the Godavari Valley, also rather far north, in May (see list of material of this subspecies).

The only explanation for the co-occurrence of *C. m. albonotatus* and *C. m. atripennis*, when one wants to continue treating them as subspecies of one species, is that either *C. m. atripennis* is a migrant visitor or a straggler outside the breeding season only, or (more intriguing) that the two would be kept apart by having different breeding seasons. Unfortunately there is not much evidence to support either theory: there is not enough seasonality in weather conditions in southern India and Ceylon to make migration likely, and as regards nidification, Stuart Baker (1934: 479), having compiled data from various sources, gave a breeding season for *C. m. atripennis* from February to July, mainly from March to May. This is supported by other authors (Wait, 1925: 213, Henry, 1955: 160, etc.). This corresponds with the breeding season of *C. m. albonotatus* in the Eastern Ghats which, on the basis of the evidence presented above, includes April and May. Henry (1955) mentioned also breeding of *C. m. atripennis* in August and September, and Abdulali (l.c.) listed a juvenile male with growing tail and wing quills, captured at Point Calimere on 26 January 1970, from which date laying in December can be deduced.

Although on a previous page I tried to discredit Baker's (1927) statement that *C. m. atripennis* differs in voice from the other Indian subspecies, he may after all have been right and the point could assume an unforeseen new significance if actually *C. m. atripennis* and *C. m. albonotatus* occur sympatrically.

Obviously field work is required to solve the problem of the status of the two forms.

Material. — North-western India: ♂, 5.III.1868, Simla (BM no. 88.10.3.163); ♂, 4.XI.1868, Saharunpoor = Saharanpur (BM no. 87.8.1.551); ♂, 4.III.1871, Kesilla Valley, Kumaon (BM no. 87.8.1.554); ♂, 24.III.1922, Kangra, 2500' (BM no. Whl. 16452); ♂, 6.IV.1922, Kangra (BM no. Whl. 16446); ♂, 23.IV.1922, Dharmsala, Kangra Dist., Punjab, 3800' (BM no. Whl. 16453); ♂, 6.V.1922, Dharmsala (BM no. Whl. 16454); ♂, 10.IV.1923, Kangra (BM no. Whl. 16447); ♂, 1.V.1923, Kangra (BM no. Whl. 16449); ♀, III.1867, Gundewar, Saharanpur (BM no. 87.8.1.550); ♀, 1869, Jerripanie, Mussoorie (BM no. 87.8.1.553); ♀, 22.III.1922, Dharmsala, 3500' (BM no. Whl. 16451); ♀, 7.V.1922, Dharmsala, 3800' (BM no. Whl. 16455); ♀, 9.IV.1923, Dharmsala, 3800' (BM no. Whl. 16456, with c/2 eggs); ♀, 15.IV.1923, Dharmsala, 3800' (BM no. Whl. 16457); ♀, 2.V.1923, Kangra (BM no. Whl. 16450); ♀, 11.VI.1934, Dharmsala, 5000' (BM no. 1949.25.1057, shot from a "nest" c/2); ♀, 21.V.1935, Kalsar Forest, Ambala Dist., Punjab (BM no. 1949.25.1055).

Nepal: ♂, 8.II.1938, Sundar Gundar, Morang, E. Terai (BM no. 1938.7.15.2202); ♂, 20.II.1938, Haraencha, Morang, E. Terai (BM no. 1938.7.15.2201); "♀" = ♂, 4.IV.1938, Katmandu, 4500' (BM no. 1938.7.15.2206); ♂, 21.II.1949, Chatra, Kosi R. (USNM no. 408143); ♀, 9.I.1937, Bilauri, W. Nepal Terai (BM no. 1938.7.15.2204); ♀, 18.II.1938, Haraencha, Morang (BM no. 1938.7.15.2205); "♂" = ♀, 4.IV.1938, Katmandu, 4500' (BM no. 1938.7.15.2203).

Ganges Valley (Central and eastern Uttar Pradesh, Bihar, West Bengal), Rajasthan, etc.: ♂, III.1864, Kashurgur, Maunbhoon (BM no. 88.10.3.173); ♂, II.1874, Seetapore = Sitapur, Oudh (BM no. 98.12.2.406); ♂, 23.XI.1877, Calcutta (BM no. 98.12.12.368); ♂, 18.X.1896, Anach, Bihar & Orissa (BM no. 1945.31.20); ♀, 9.X.1865, Etawah (BM no. 87.8.1.558); ♀, 21.I.1867, Etawah (BM no. 87.8.1.557); ♀, 22.X.1868, Cawnpore (BM no. 87.8.1.559); ♀, 23.XI.1873, Allahabad (BM no. 87.8.1.561); ♀, 4.I.1879, Bahadapur = assumed to be Bahadurpur 27° 40' N, 76° 44' E (BM no. 98.12.2.405); ♀, 23.V.1918, Gonda (BM no. Whl. 16435); ♀, 25.I.1924, Daghownie, N. Bihar (BM no. Whl. 16436).

Darjeeling, Bhutan, Assam: ♂, 4.III.1893, Bandho, North Cachar Hills (BM no. 1925.12.23.685); ♂, I.1911, Sukna, Darjeeling (BM no. 1921.7.12.278); ♂, II.1911, Sivoke, Darjeeling (BM no. 1921.7.12.281); ♂, III.1911, Sukra, Darjeeling (BM no. 1921.7.12.280); ♂, 18.XII.1922, Bengdubi, Darjeeling, 300' (BM no. Whl. 16437); ♂, 1.III.1925, Rajabhatkawa, Duars, 500' (BM no. Whl. 16438); ♂, 28.III.1926, Rajabhatkawa, Duars, 300' (BM no. Whl. 16442); ♂, 25.XI.1928, Sarugava, T. E., Duars, 300' (BM no. Whl. 16444); ♂, 10.III.1949, Nongpoh, Assam, 2500' (USNM no. 408149); ♂, 16.III.1949, Nongpoh (USNM no. 408147); ♀, IV.1874, Bhotan Doars = Bhutan Duars (BM no. 87.8.1.573); ♀, II.1878, Buna Doars (BM no. 87.8.1.568); ♀, 26.III.1893, Gunjong, North Cachar Hills (BM no. 1925.12.23.684); ♀, 30.XII.1905, Engo, T. E., Darjeeling (BM no. 1921.7.12.286); ♀, 7.III.1906, Sivoke, Darjeeling (BM no. 1921.7.12.284); ♀, 21.II.1907, Sukosa, Darjeeling (BM no. 1921.7.12.279); ♀, 12.IX.1925, Hasimara, T. E., Duars, 500' (BM no. Whl. 16439); ♀, 13.XII.1925, Rajabhatkawa, Duars, 300' (BM no. Whl. 16440); ♀, 21.II.1926, Hasimara, T. E., Duars (BM no. Whl. 16441); ♀, 17.IX.1926, Hasimara, T. E., Duars (BM no. Whl. 16442); ♀, 2.XII.1928,

Huldibar, T. E., Duars (BM no. Whl. 16445); ♀, 12.III.1949, Nongpoh (USNM no. 408148).

4. *Caprimulgus macrurus bimaculatus* Peale

Caprimulgus bimaculatus Peale, 1848, U.S. Expl. Exp. 8: 170 — Singapore. (reference not verified).

C[aprimulgus] macrurus ambiguus Hartert, 1896, Ibis (7) 2: 373 — the Malay Peninsula, Burma, Assam, and the eastern Himalayas = the southern part of Tenasserim, restricted by Kloss (1918: 96).

Caprimulgus macrurus anamesus Oberholser, 1915, Proc. U.S. Nat. Mus. 48: 593 — Tanjong Kalong, Singapore Island.

Caprimulgus macrurus hainanus Mayr, 1938, Ibis (14) 2: 310 — Cheteriang, Hainan.

Caprimulgus macrurus silvanus Koelz, 1954, Contrib. Inst. Reg. Expl. 1: 26 — Kohima, Naga Hills.

Diagnosis. — Similar to the nominate race, but distinctly larger. Sexual dimorphism as in the nominate race. Differs from *C. m. albonotatus* by being distinctly darker (although lighter than most other races), by smaller size, and by having in females the outer tail-tips white or whitish.

Distribution. — Sumatra, Malay Peninsula, Indo-China, Siam, Yunnan, Burma, apparently west to Assam; also Hainan. Gibson-Hill (1949: 108) wrote: "It is not at present known from any of the off-lying islands of Malaya except Penang and Singapore", but the museum where he worked contains two specimens from Pulau Langkawi collected in the first decade of this century, see list of material; these birds have been recorded by Robinson (1917: 153). In addition, Chasen (1924: 29) called the species very numerous on the smaller islands around Singapore and mentioned its breeding on P. Senang.

As could be expected in a species with a continuous continental range, this subspecies, in the north-west, merges gradually in the preceding one (*C. m. albonotatus*). The boundary between the two races is, therefore, arbitrary. Birds from eastern Assam, Manipur and Upper Burma are rather larger and paler than those from the Malay Peninsula, they are intermediate and only for the sake of convenience placed in *bimaculatus*, see Discussion. Birds from Thailand and Indo-China, on the other hand, are clearly referable to the present subspecies.

Discussion. — I have been unable to find differences in coloration or pattern between this subspecies and nominate *macrurus* from Java, but there is a clear difference in size.

There is a gradient of increasing size from Sumatra northwards: only a single specimen from Sumatra exceeds in wing-size 200 mm; in Burma, however, measurements go up to 212 mm. Previously Koelz (1954) has drawn attention to the large size of birds from Assam, but this interpretation

differs somewhat from mine and his characterization of topotypical *C. m. bimaculatus* as "dark and small" is not supported by my material. *C. m. silvanus* has already been synonymized with *C. m. ambiguus* by Ripley (1961: 204). I go farther than that, in that I consider *ambiguus* itself as a synonym of *C. m. bimaculatus*. When Hartert (1896) named *ambiguus*, he was unaware of the existence of the earlier name *bimaculatus*, and later (Rothschild & Hartert, 1918: 323) he regarded them as the same, following Kloss (1918). More recently Smythies (1953: 370) was of the same opinion. Peters (1940: 207) regarded *ambiguus* as doubtfully distinct from *bimaculatus*, as did Ali & Ripley (1970: 17).

C. m. hainanus was diagnosed as follows: "Similar to *C. m. bimaculatus* Peale (Malacca), but averaging larger (wing, ♂ ad. 202, 207, against 192, 194, 198, 203); black spots on scapulars very large; collar, lower throat, and breast, under wing-coverts, and spots on upper wing-coverts much deeper rufous. Wing, ♂ 202, 207, ♀ 199; tail, ♂ 158, 161, ♀ 150; white on tail 48, 51 ... Birds from Tenasserim and Lower Burma (*ambiguus*) show an approach to *hainanus* in size, but they lack the darkness and rich rufous colour of the Hainan race" (Mayr, 1938). Specimens from Hainan are rare in collections and the best I have been able to do is receive a loan of one male paratype, at a time that the only material of the adjacent race *C. m. bimaculatus* available for comparison came from Sumatra, the other end of the range of that subspecies. Nevertheless, the bird from Hainan agreed so well in plumage characters with several Sumatran specimens, that I consider it inadvisable to maintain *hainanus*. All the characters which Mayr listed are evidently subject to strong individual variation. The specimen from Hainan has rather more black around the eyes and on the chin than specimens from elsewhere and according to Mrs. LeCroy (in litt.) the same holds true for the other two skins, but this is unlikely to be a character of much value. Birds from Hainan are not as large as Mayr believed, for Shaw & Hsu (1966: 106) listed the following wing lengths: 2 ♂ 157 (evidently a misprint for 187), 190; ♀ 197 mm. Anyway, my measurements show that continental *C. m. bimaculatus* may be quite as large. Mayr appears to have measured the tail in a way different from mine, for in the specimen for which he measured wing 202, tail 158, I found wing 203, tail 146 mm.

In a gradient the drawing of a line separating races is an arbitrary matter. In the range-delimitation and the list of material, where for practical reasons a choice had to be made, I have included intermediate birds with *C. m. bimaculatus* rather than with *C. m. albonotatus*. Nevertheless, even if the whole of Assam and most of Upper Burma are acknowledged as being inhabited by intermediates, the areas in which each of the subspecies is

“pure” are much larger. In the British Museum I found several specimens from Upper Burma bearing in pencil the name *intermedius*, apparently in the handwriting of Kinnear (see list of material). Three of these birds were collected by Stanford and had been recorded by Stanford & Ticehurst (1939: 31) under the name *Caprimulgus macrourus ambiguus*. Personally I see no use in naming such intermediates, and the fact that Kinnear has not published the name shows that he was of, or changed to, the same opinion. Later Koelz (1954) decided that the name *ambiguus* was applicable to the intermediate birds of northern Burma, but he appears to have overlooked Kloss's perfectly valid restriction of the type-locality of *C. m. ambiguus* to southern Tenasserim.

Material. — Assam and Manipur: ♂, X.1900, Lashkarpur Valley, S. Sylhet (USNM no. 263709); ♂, 2.III.1946, Kanglatongbi, 3000', Manipur (BM no. 1949.76.105).

Burma: ♂, 1.III.1904, Telok Besar, Tenasserim (USNM no. 180366); ♂, 5.IX.1932, Katha, 400', Upper Burma (BM no. 1941.12.1.707: *intermedius*); ♂, 21.IX.1932, Kyundaw, Shwebo Dist. (BM no. 1948.80.3860); [♂], 6.VII.1933, Myitkyina, Upper Burma (BM no. 1941.12.1.708: *intermedius*); ♂, 5.IX.1933, Myitkyina (BM no. 1941.12.1.709: *intermedius*); ♂, 15.VII.1934, Maymyo, Mandalay Dist. (BM no. 1948.80.3861); ♂, 15.IX.1935, Myitkyina (BM no. 1937.1.7.34); ♂, 15.XII.1939, Samo, 500', Taungoo Dist. (BM no. 1948.80.3854); ♂, 12.I.1940, Thogale or Thogok, 400', Taungoo Dist. (BM no. 1948.80.3855); ♂, 25.I.1940, Kyatchaung, 300', Pegu Dist. (BM no. 1948.80.3851); ♂, 19.II.1940, Taikhyi, 300', Pegu Dist. (BM no. 1948.80.3852); ♂, 17.III.1945, Myitkyina (USNM no. 377558); ♀, 27.II.1929, Ngaphaw, Prome Dist. (BM no. 1941.5.30.8269: *nipalensis*); ♀, 6.II.1930, Gamon Chaung, Kyaukpya Dist., 1200' (BM no. 1932.7.13.17: *intermedius*); “♂” [= ♀?], 5.I.1935, Pyinmana, Yamethin Dist. (BM no. 1948.80.3858); ♀, 1.1935, Kauig, Pyinmana, 700' (BM no. 1948.80.3857); ♀, 6.XI.1935, N. Taungoo Dist. (BM no. 1948.80.3856); ♀, 2.III.1940, Wahauig Chaenig, Pegu Dist. (BM no. 1948.80.3853).

Thailand (Siam): ♂, undated, received in 1881, Salanga (RMNH cat. no. 3); ♂, 28.I.1899, Trong, Lower Siam (USNM no. 169757); ♂, 8.XII.1909, Chong, Trang, 250' (NMS); ♂, 10.I.1910, Ku Khau, Trang (NMS no. 884/10); ♂, 10.I.1910, Ku Khau Trang (NMS no. 885/10); ♂, 19.I.1910, Kho Khan, Trang (BM no. 1936.4.12.721); ♂, 1.XI.1915, Mi Nam Kabren (BM no. 1916.12.27.386); ♂, 9.XII.1915, Hinlap (BM no. 1916.12.27.385); ♂, 24.XII.1916, Bangkok (BM no. 1955.1.1889); ♂, 24.XII.1917, Klong tum Sai, Tongka (NMS); ♂, 3.III.1919, Tap Li (Klong Wan), Pakchan (BM no. 1936.4.12.724); ♂, 3.VI.1924, Bang Nara (NMS); ♂, 4.VIII.1926, Bangkok (USNM no. 308547); ♂, 14.IV.1929, Knong Phra (USNM no. 313168); ♂, 4.IX.1930, Bandon (NMS); 3 ♂, 11.VIII.1931, Bang Nara (NMS); ♂, 16.VII.1935, Chiang-mai, 1000' (USNM no. 335532); ♂, 27.X.1952, Kanchanaburi, Hin Laem (USNM no. 450050); ♀, 1903, Dindings (NMS no. II.134.2.5.2.m); ♀, 7.XII.1909, Chong, Trang (NMS); ♀, 9.X.1915, Klong Wahip, Tung Song (BM no. 1916.12.27.389); “♂” = ♀, 9.XII.1915, Hinlap (BM no. 1916.12.27.384); ♀, 18.XII.1916, Bangkok (BM no. 1955.1.1887); ♀, 24.XII.1916, Bangkok (BM no. 1955.1.1888); ♀, 8.XII.1917, Bangkok (BM no. 1955.1.1886); ♀, 13.II.1918, Bangkok (BM no. 1955.1.1893); ♀, 14.II.1918, Pulau Sarih, Songkah (NMS no. 618); ♀, 12.III.1922, Ronpilun, Nakon Sri Tamarat (NMS); ♀?, 3.VI.1924, Bang Nara (NMS); ♀, 25.VI.1924, Bangkok (NMS); ♀, 10.VII.1924, Bangkok (NMS); ♀, 7.X.1924, Bangkok (NMS); “♂” = ♀, 8.VI.1926, Lem Sing, Chantaboon (USNM no. 308154); ♀, 23.VIII.1927, Bangkok (NMS); ♀, 16.

III.1930, Lem Sing (USNM no. 324142); ♀, 31.VII.1930, Bangkok (NMS); 2 ♀, 4 IX.1930, Bandon (NMS); ♀, 20.IV.1934, Sriracha (USNM no. 334396).

Malaya: ♂, undated, received in 1878, Malakka (RMNH cat. no. 1); [♂], 1888, Kuala Lumpur, Selangor (NMS); ♂, 7.VII.1891, Pahang (NMS no. II.134.2.5.2.a); ♂, 15.V.1899, Selitar, Singapore Island (USNM no. 170440); ♂, 11.V.1905, Jasin, Malacca (BM no. Whl. 16462); ♂, X.1906, Kuala Lumpur (BM no. 1936.4.12.716); ♂, X.1906, Kuala Lumpur (NMS no. 1222/707); ♂, XI.1906, Kuala Lumpur (BM no. 1936.4.12.717); ♂, II.1907, Kuala Lumpur (BM no. 1936.4.12.719); ♂, I.XII.1907, Pulau Langkawi, Perlis (NMS); ♂, 20.III.1908, Cheras, Selangor (BM no. 1936.4.12.722); ♂; 30.III.1909, Pulau Langkawi (NMS); ♂, 4.II.1911, Kuala Lumpur (BM no. 1936.4.12.718); ♀, 25.VII.1903, Tanjong Kalong, Singapore (BM no. Whl. 16463); ♀, 11.V.1905, Jasin, Malacca (BM no. Whl. 16461); ♀, 25.VI.1922, Bukit Timah, Singapore (NMS); ♀, 29.X.1924, Singapore Island (NMS).

Indo-China: ♂, 9.IV.1918, Djiring, 3000', S. Annam (NMS); ♂, 20.XII.1918, Kompong Sun Bon near Sre Umbel, coast of Cambodia (BM no. 1955.1.1903); ♂, 10. XII.1927, Le Bokor, Cambodia (BM no. 1928.6.26.1752); ♂, 17.I.1928, Tay-Ninh, Cochinchina (BM no. 1928.6.26.512); ♂, 6.II.1934, Plei-Kou, S. Annam (BM no. 1935.10.23.277); ♀, 16.XII.1918, Kompong Sun Bon near Sre Umbel, coast of Cambodia (BM no. 1955.1.1902); ♀, 16.III.1926, Dak-Tô, Annam (BM no. 1926.9.8.422); ♀, 21.III.1926, Dak-Tô, Annam (BM no. 1926.9.8.420); ♀, 15.I.1927, Lang Son, Tonkin (BM no. 1927.6.5.349); 2 ♀, 18.XII.1927, Siem Reap, Cambodia (BM nos. 1927.6.26.507 and 508); ♀, 26.XII.1927, Angkor, Cambodia (BM no. 1928.6.26.513); ♀, 15.I.1928, Tay-Ninh, Cochinchina (BM no. 1928.6.26.508); ♀, 17.I.1928, Tay-Ninh, Cochinchina (BM no. 1928.6.26.510); ♀, 19.I.1928, Tay-Ninh, Cochinchina (BM no. 1928.6.26.509); ♀, XII.1939, between Angkor and Siem Reap, Cambodia (USNM no. 360663).

China: ♂, 9.IV.1903, Mt. Wuchi, Hainan (AMNH no. 632872); ♂, IX.1918, T'ong Shán, Lichiang Range, Yunnan lat. 27°20', 9000' (BM no. 1921.7.15.87); ♂, IX.1922, conifer forests, Lichiang Range, Yunnan (BM no. 1923.11.11.95).

Sumatra: ♂, 21.VIII.1909, Soengei Poetih, Serdang (RMNH no. 14994); ♂, 13. IX.1909, Soengei Poetih, Serdang (RMNH no. 14995); ♂, IX.1912, Medan (ZMA no. 729); ♂, 26.IX.1930, Aloer Poerba, Atjeh (MZB no. 14958); "♂" = ♀, 11.XII. 1935, Timbang-Serdang, S.O.K. (NMS); 2 ♂, undated, Medan (RMNH cat. nos. 7 and 8); 2 ♂, undated, Medan (ZMA nos. 728, 730); ♂, undated, Deli (ZMA no. 735); ♂, undated, Bindjey Estate, S.O.K. (ZMA no. 7384); ♀, 19.I.1914, Deli (RMNH cat. no. 9); ♀, 20.I.1914, Deli (RMNH cat. no. 10); ♀, 4.IV.1915, Medan (ZMA no. 731); ♀, 6.XI.1919, Soengei Tasik, Langkat (ZMA no. 733); ♀, IV.1939, Tandjong Kassau, Tebing Tinggi, S.O.K. (MZB no. 14959).

5. *Caprimulgus macrurus salvadorii* Sharpe

Caprimulgus salvadorii Sharpe, 1875, Proc. Zool. Soc. Lond.: 99, pl. XXII fig. 1 -- Labuan.

Diagnosis. — When put out in series, this subspecies differs from *C. m. bimaculatus* and the nominate race by being darker; the upper parts have more blackish, less warm-brownish; pale edges to the upper wing coverts are usually almost white, with less cinnamon. On the underparts also it is distinctly less rufous. In size *C. m. salvadorii* is intermediate between the larger *C. m. bimaculatus* and the smaller nominate race.

Distribution. — Western and northern Borneo, including Labuan, Banguay,

and the southern Sulu Islands (Bongao), where only recently discovered (du Pont & Rabor, 1973). On present evidence the distribution in Borneo is singularly patchy. Admittedly the species was described as: "A common resident throughout the lowlands of Borneo in open country" (Smythies, 1968: 289). This may be true for Sarawak, for North Borneo (Sabah), where it is locally abundant (Thompson, 1966: 399; Miyamoto, 1971: 232), and also for coastal West Borneo from where there are several records: Paloh (where Coomans de Ruiter took a clutch of eggs), Sinkawang (Dunselman, 1937), Pontianak (specimens examined), and Pematang Toedjoeh about 25 km south of Pontianak (specimen examined, see also Coomans de Ruiter, 1931a, 1931b). There is also an inland record in West Borneo, from the Emboelah near the Sarawak border (Dunselman, 1936), but I am unaware of any records from the whole of southern and eastern Borneo. It is true that Bouman-Houtman (1931) mentioned finding two downy young of a nightjar which she (or more likely the editor) referred to as *C. macrurus*, at Pagatan (extreme S.E. Borneo), but the habitat, sand with a sparse cover of grass-tussocks, makes it clear that the species concerned was *C. affinis*. She refers also to eggs found on open ground between pieces of coal, in a coal storage yard near Semarang, Java: an impossible place for *C. macrurus* but quite likely for *C. affinis*. As regards the bird from Moeara Teweh recorded by Brüggemann (1878) under the name *C. Salvadorii*, the description of the tail which showed: "nur eine weisse Binde oberhalb der Schwanzspitze", practically proves its identity as *C. indicus jotaka* Temminck & Schlegel.

The apparent absence from large parts of Borneo may be due to ecological factors and it is likely that, as the destruction of forest proceeds, this inhabitant of forest edges and secondary growths will extend its range.

Discussion. — The series in the British Museum is clearly separable from *C. m. binotatus* on the basis of a darker and greyer plumage. Other material from Borneo also shows these characters. The two birds from Pontianak in Leiden are very grey, with scarcely any brown and cinnamon in the plumage; one would almost believe them to belong to a separate race, and anyway, they also can be easily separated from *C. m. bimaculatus* and the nominate race. The four specimens from Sarawak in Leiden (donated by the Sarawak Museum) present a problem: they are brownish, and remarkably different from the grey Pontianak specimens. From *C. m. bimaculatus* and *C. m. macrurus* they are scarcely separable, but they are very slightly darker on the upper parts. These four specimens are not in a good condition, and somehow this may account for their brownish appearance (see introduction). When the Bornean material as a whole is considered, its recognition as a separate subspecies looks certainly justified.

Material. — ♂, 11.II.1886, Abai, N.W. Borneo (BM no. 89.7.1.1); ♂, 25.VII.1891, Kuching (RMNH no. 35808); ♂, VI.1893, Labuan (BM no. 94.8.6.118); ♂, 19.I.1895, Pontianak (RMNH cat. no. 5); ♂, 11.II.1895, Pontianak (RMNH cat. no. 6); ♂, 7.III.1898, Kuching (RMNH no. 35810); ♂, 25.VI.1951, Kaung, Kinabalu (USNM no. 444090); ♂, 17.VIII.1951, Menggatal Rubber Estate, Jesselton (USNM no. 444089); ♂, 1.IX.1960, Penambang, N. Borneo (USNM no. 472556); ♂, 29.IX.1960, Ranau, N. Borneo (USNM no. 472557); ♂, undated, Paitan (AMNH no. 632841); ♂, undated, Paitan (AMNH no. 632842); ♂, undated, Lawas River (BM no. 1901.1.31.36); ♂, undated, Lawas River (BM no. 1901.1.31.37); ♂, undated, Bintulu, Sarawak (BM no. 76.7.28.2); ♂, undated, Brunei River (BM no. 88.5.30.2); ♂, undated, Sarawak, without exact locality (BM no. 88.10.3.149); ♀, 20.X.1891, Kuching (RMNH no. 35809); ♀, 13.V.1893, Labuan (AMNH no. 632838); ♀, 29.I.1901, Kuching (RMNH no. 35811); ♀, 15.III.1931, Pematang Toedjoeh, Pontianak (MZB no. 14957); ♀, undated, Bintulu (BM no. 76.7.28.3); ♀, undated, Kinabalu (BM no. 95.11.19.52); ♀, undated, Labuan (BM no. 76.5.2.125); ♀, undated, Labuan (BM no. 77.9.27.48) ♀, undated, Labuan (BM no. 77.9.27.50).

6. *Caprimulgus macrurus johnsoni* Deignan

Caprimulgus macrurus johnsoni Deignan, 1955, Sarawak Mus. J. 6: 315 — Puerto Princesa, Palawan Island.

Diagnosis. — A little browner, less dark than *C. m. salvadorii*, and a trifle darker than the races *C. m. macrurus* and *C. m. bimaculatus*. As far as can be judged from only five specimens this is a rather small race, perhaps of the same size as *C. m. macrurus*.

Distribution. — Palawan and probably the Calamianes, from where the species has been recorded by Worcester & Bourns (1898) and McGregor (1909). Deignan (1955) included Culion in the range of his newly-described subspecies, but does not appear to have seen material, at least did not make clear that he had. The allocation of the population from the Calamianes to the race *johnsoni*, however likely, remains therefore tentative.

Discussion. — The differences between the four specimens of *C. m. johnsoni* and a series of *C. m. salvadorii* in the British Museum are as listed above, and these are also exactly the characters on which Deignan based the subspecies.

Material. — ♂, 3.I.1906, Puerto Princesa (USNM 210982); ♂, 30.VII.1907, Iwahig (BM 1913.2.26.164); ♀, 15.IX.[1887], Puerto Princesa (BM 96.6.6.800); [♀, IX. 1887, Puerto Princesa (BM 96.6.6.801); ♀, 9.VI.1907, Iwahig (BM 1911.11.16.88).

7. *Caprimulgus macrurus macrurus* Horsfield

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

Diagnosis. — A fairly small subspecies, characterized by comparatively light upperparts (more cinnamon, less grey than *schlegelii* and other eastern subspecies), and light under parts.

Distribution. — Java and Bali. On Bali the species was first reported

by von Plessen (1926), who collected a single female. A male was obtained by the same collector in 1938 (see list of material examined).

Discussion. — The well-prepared series in the Bartels collection gave me an excellent basis for comparison. Previous revisers (Rothschild & Hartert, 1918; Whistler & Kinnear, 1935: 36), lacked satisfactory material of the typical subspecies, and for that reason not all their conclusions remain acceptable.

Material. — ♂, undated, Batavia (RMNH cat. no. 7); ♂, 8.VII.1900, Tjilandak, Tjiboengoer, Preanger (RMNH, coll. Bartels no. 571); ♂, 23.X.1903, Pasir Kananga, Djampang Tengah (RMNH coll. Bartels no. 1936); ♂, 24.V.1904, District Palaboehan (RMNH coll. Bartels no. 2182); ♂, 18.VIII.1905, Bandjar, Preanger (RMNH coll. Bartels no. 3280); ♂, 28.VIII.1905, Bandjar (RMNH coll. Bartels no. 3301); ♂, 21.III.1906, Struiswijk, Batavia (RMNH coll. Bartels no. 3870); ♂, 21.III.1908, Bandjar (RMNH coll. Bartels no. 5491); ♂, 21.III.1908, Bandjar (RMNH coll. Bartels no. 5492); ♂, 9.VII.1913, Goenoeng Koepak (RMNH coll. Bartels no. 9274); ♂, 17.VII.1913, Goenoeng Koepak (RMNH coll. Bartels no. 9325); ♂, 14.V.1916, Tjiodeng (RMNH coll. Bartels no. 10587); ♂, 9.VIII.1916, Pangerango (RMNH coll. Bartels no. 10652); ♂, 14.V.1921, Goenoeng Massigit (RMNH coll. Bartels no. 12123); ♂, 14.V.1921, Goenoeng Massigit (RMNH coll. Bartels no. 12124); ♂, 31.V.1921, Goenoeng Massigit (RMNH coll. Bartels no. 12144); ♂, 29.XII.1921, Goenoeng Massigit (RMNH coll. Bartels no. 12407); ♂, 18.III.1925, Cheribon (RMNH no. 26937); ♂, 18.IV.1925, Cheribon (RMNH no. 28197); ♂, 26.IV.1925, Tjilangkat N. of Buitenzorg (RMNH no. 66828); ♂, 19.II.1926, Gedangan, Semarang (RMNH cat. no. 10); ♂, 11.IV.1926, Gedangan, Semarang (RMNH cat. no. 11); ♂, 17.VI.1926, Bolang (RMNH no. 25993); ♂, 18.IX.1926, Bolang (RMNH cat. no. 9); ♂, 23.VI.1930, Gedangan, Semarang (RMNH cat. no. 12); ♂, 20.III.1938, Koeta, Bali (RMNH no. 10104); ♀, 23.VII.1896, Tjipetir, Preanger (RMNH coll. Bartels no. 184); ♀, 7.VI.1903, Pasir Kananga (RMNH coll. Bartels no. 1698); ♀, 28.VI.1906, Pasir Kananga (RMNH coll. Bartels no. 4099); ♀, 21.II.1907, Langgen (RMNH coll. Bartels no. 4573); ♀, 30.VI.1913, Goenoeng Koepak (RMNH coll. Bartels no. 9214); ♀, 9.VII.1913, Goenoeng Koepak (RMNH coll. Bartels no. 9275); ♀, 15.VII.1913, Goenoeng Koepak (RMNH coll. Bartels no. 9317); ♀, 16.VI.1916, Tjisaroeni (RMNH coll. Bartels no. 10625); ♀, 8.XI.1917, Soember Wringin (RMNH coll. Bartels no. 11178); ♀, 9.VI.1920, Goenoeng Massigit (RMNH coll. Bartels no. 11818); ♀, 11.V.1921, Goenoeng Massigit (RMNH coll. Bartels no. 12117); ♀, 15.V.1921, Goenoeng Massigit (RMNH coll. Bartels no. 12125); ♀, 20.V.1921, Goenoeng Massigit (RMNH coll. Bartels no. 12138); ♀, 17.XII.1923, Kali Boengin (RMNH coll. Bartels no. 13750); ♀, 18.III.1925, Cheribon (RMNH no. 26938).

8. *Caprimulgus macrurus schlegelii* Meyer

C[aprimulgus] Schlegelii Meyer, 1874, Sitzb. Akad. Wiss. Wien 69: 210 — no locality = Port Essington (ex Gould, Birds Austr. 2: pl. 9).

Caprimulgus schlegelii G. R. Gray, 1869, Hand-List Birds 1: 57 — nomen nudum.

Caprimulgus macrurus yorki Mathews, 1912, Novit. Zool. 18: 291 — North Queensland (Cape York).

Caprimulgus macrurus keatsi Mathews, 1912, Novit. Zool. 18: 291 — Northern Territory (Point Keats).

Caprimulgus macrurus mesophanis Oberholser, 1915, Proc. U. S. Nat. Mus. 48: 590 — Amboina Island, Molucca Islands.

Caprimulgus macrurus meeki Rothschild & Hartert, 1918 (May), Novit. Zool. 25: 321 — Sudest Island.

Caprimulgus macrurus oberholseri Rothschild & Hartert, 1918 (May), Novit. Zool. 25: 322 — Lombok.

Caprimulgus macrurus kuehni Rothschild & Hartert, 1918 (May), Novit. Zool. 25: 322 — Tual (Toal), Little Key, Key Islands.

Caprimulgus macrurus albolaxatus Rothschild & Hartert, 1918 (May), Novit. Zool. 25: 323 — Volcano (Vulcan, Manumudar) Island.

Rossornis macrurus coincidens Mathews, 1918 (Aug.), Birds Austr. 7: 241 — Cairns, Queensland.

Rossornis macrurus rogersi Mathews, 1918 (Aug.), Birds Austr. 7: 242 — Melville Island.

Rossornis macrurus aruensis Mathews, 1918 (Aug.), Birds Austr. 7: 242 — Aru Islands.

Caprimulgus macrurus schillmölleri Stresemann, 1931, Orn. Mber. 39: 170 — Halmahera: Gamkonora.

Caprimulgus macrurus obiensis Jany, 1955, J. f. Orn. 96: 106 — Obi.

Diagnosis. — Very similar to the nominate race but upper surface, including tail, somewhat darker, with less cinnamon in the plumage; the under parts are also a trifle darker, perhaps particularly on the breast; the vermiculations on the head are more pronounced, a little coarser. There is no difference in size.

Distribution. — The most widely distributed of all subspecies: northern Australia, New Guinea and surrounding islands, New Britain, the Moluccas with the exception of the Soela Islands (where *C. m. jungei* occurs), the Zuid-Wester and Tanimbar groups, the Lesser Sunda Islands from Lombok to Timor, and the islands of Djampea and Saleyer south of Celebes.

In Australia known from the extreme north of the Northern Territory, between Port Keats and Yirrkala, as well as Melville Island, and again from north-eastern Queensland, between Cape York and Mackay and probably farther south. Along the western coast of the Cape York Peninsula there are records from Weipa (Kikkawa, 1975), Inkerman (Goodwin in Hall, 1974: 132; specimen examined) and the mouth of the Staaten River (Roff, 1967). Even though the species will eventually be found to range further along the shores of the Gulf of Carpentaria, it is likely that the populations of the Northern Territory and of Queensland are separated by a large distributional gap.

In the Northern Territory there is one record from rather far outside the range as circumscribed above: Sedgwick (1947: 355) claims to have observed the species at Larrimah. Sedgwick's notes, however, lack assurance and he makes no mention at all of *Eurostopodus guttatus* (Vigors & Horsfield), a much more widely distributed species of nightjar.

The southernmost record supported by a specimen I have from Queensland is from the Upper Alligator Creek, 15 miles south of Townsville. According to Lavery & Hopkins (1963) the species is rare near Townsville.

Farther south in Queensland, *Caprimulgus macrurus* becomes a somewhat enigmatic species. It is true that Frau Amalie Dietrich obtained a specimen at Port Mackay (cf. Finsch, 1872: 322), the same locality where Marshall (1934) heard the calls "echoing across the mangrove swamps" without seeing the birds. There can be no question about the correct identification of the bird recorded by Finsch, but labelling in the Museum Godeffroy, to which the specimen belonged, was usually somewhat sketchy. Goodwin in Hall (1974: 132) reported birds heard but not seen at Mount Dryander, about midway between Townsville and Mackay. Although the evidence is not entirely satisfactory, it appears sufficiently concrete to accept that the species ranges south to Mackay.

In literature several records appear from far outside the range as circumscribed above. They are from as far south as Wallis Lake, N.S.W., where the species was: "Identified by that sound field-observer, Mr. Morse, who heard and saw this bird more than once" (White, 1922: 219); significantly no mention is made of *Eurostopodus mystacalis* (Temminck), the nightjar one would expect to occur near Wallis Lake, and it is a safe guess that the two species were confused. The Wallis Lake record, correctly ignored in later literature, was revived by Recher (1975: 224), but without new evidence (Recher, in litt., 11.I.1977) and therefore remains unacceptable. Even more puzzling is the record from Mallee, South Australia, based on an identification of a collected specimen by S. A. White (cf. Lea & Gray, 1935: 72); on geographical grounds I would expect the bird to have been *Eurostopodus guttatus* (Vigors & Horsfield). It is a sobering thought that even Australia's most experienced ornithologists of the time could make such errors.

It is more difficult to evaluate records from eastern Queensland south of Mackay as there is no reason why they should not be correct. Chronologically the first such record is from Marmor, 30 miles south of Rockhampton (Marshall, 1934); it was based on calls only, a procedure already questioned by Barnard (1935). The most southern records are from Sandy Cape, Fraser Island (Makin, 1968) and from Gin Gin on the mainland (Fleay, 1968: 155). The record from Fraser Island was based on calls only; as regards Gin Gin, Fleay did not state who was responsible for the claim that *C. macrurus* occurs there, but from the context it is apparent that it was H. H. Innes. Unfortunately the letter I wrote to Mr. Innes in the hope of obtaining more definite evidence, remained unanswered. The occurrence of *C. macrurus* as far south as Fraser Island and Gin Gin has been accepted by recent authors (Lavery, 1969; Chapman in Slater, 1971: 399; Vernon & Barry, 1972; Storr, 1973: 70) and may be perfectly correct, but it is my opinion that some exact evidence would be particularly desirable.

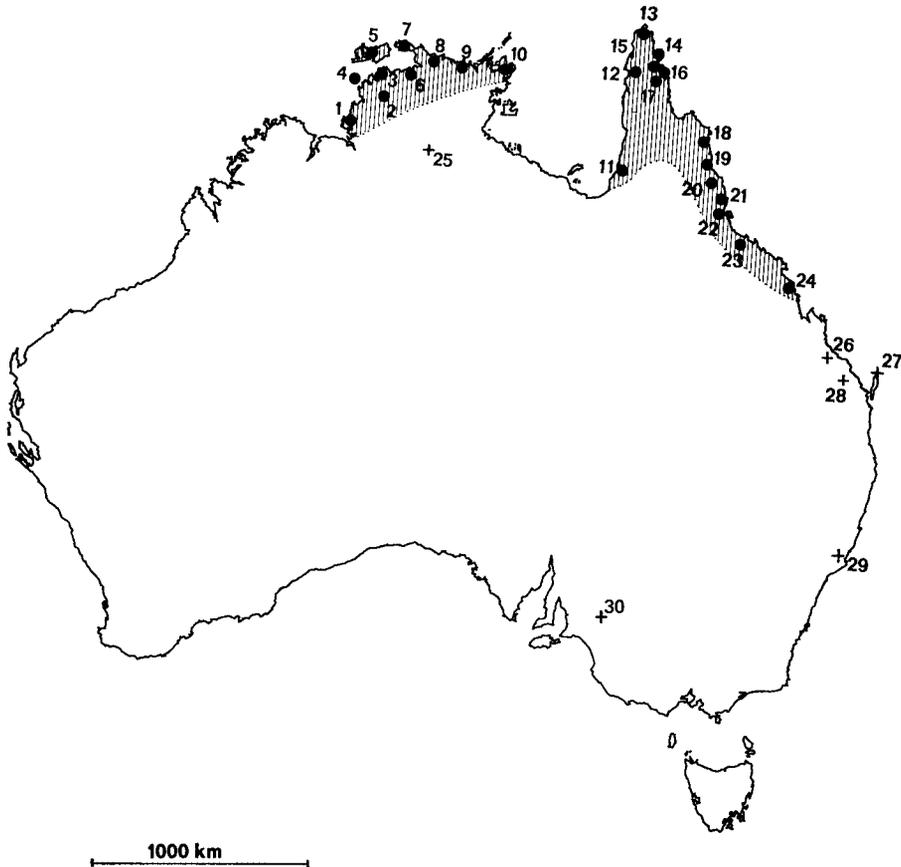


Fig. 3. The distribution of *C. macrurus* in Australia.

1, Port Keats (type locality of *C. m. keatsi*; the name is not Point Keats as Mathews wrote); 2, Adelaide River (Rhodes, 1944); 3, Darwin; 4, Quail Island; 5, Melville Island (type locality of *R. m. rogersi*); 6, Alligator River (Hartert, 1905: 217); 7, Port Essington (type locality of *C. Schlegelii*); 8, King River (White, 1917: 220); 9, Milingimbi (Webb, 1933); 10, Yirrkala; 11, Inkerman Hsd.; 12, Weipa (Kikkawa, 1975); 13, Cape York (Barnard, 1911; Macgillivray, 1914: 161; Officer, 1967); 14, Cape Grenville; 15, Temple Bay; 16, Portland Roads; 17, Iron Range; 18, Cooktown; 19, Daintree; 20, Atherton; 21, Tully; 22, Cardwell; 23, Upper Alligator Creek, Townsville; 24, Mackay.

Doubtful records: 25, Larrimah; 26, Marmor; 27, Sandy Cape, Fraser Island; 28, Gin Gin; 29, Wallis Lake; 30, Mallee¹).

¹) The "Mallee" or (more rightly) the "Murray Mallee" is the squarish block of semiarid country in South Australia immediately south and east of the Murray River. It is bounded on the east by the Victorian border and in the south by about 35°30'S (Storr, in litt., 26.I.1977). In the absence of a more exact locality, the mark on the map is placed in the centre of "Mallee".

Vernon & Barry (1972) stated that Chisholm in his book "Birds and Green Places" (1929) has recorded *C. macrurus* from Fraser Island. As this book was not available to me and as in a later paper Chisholm (1936) made no mention of the occurrence of *C. macrurus* on Fraser Island, I wrote to Mr. Chisholm to ask if he could supply me with details. From the reply Mr. Chisholm (in litt., XI.1976) sent me, I quote the following passage: "The most southerly spot where I have encountered *Caprimulgus macrurus* was Dunk Island, between Townsville and Cairns. Not having any recollection of seeing or hearing that species on Fraser Island, I was surprised to learn that Vernon & Barry had quoted me as having recorded the bird there; but on looking up "Birds and Green Places" — which I had not done for many years — I found that in fact the only nightjar I recorded from Fraser Id was *Eurostopodus mystacalis*, which was known locally as the "Laughing Owl". Vernon must have got his species mixed."

In New Guinea, *C. macrurus* has been recorded from all parts; it occurs not only in the lowlands but also in cultivated valleys in the central mountains: Wisselmeren, 1700 m (Junge, 1953), Balim Valley, 1450-1600 m (Rand, 1942; Ripley, 1964), Telefomin, 1440 m (Gilliard & LeCroy, 1961), Nondugl, Wahgi Valley, 1560 m (Gyldenstolpe, 1955), Mt. Albert Edward, 1500 m (Bell, 1971), and near Okapa, Krätke Mountains, at over 1900 m (Diamond, 1972: 178). Also known from practically all the islands around New Guinea.

In the Bismarck Archipelago the species is known from New Britain only ¹).

In the Moluccas, *C. macrurus* is widely distributed; besides the islands from where specimens have been examined (see list of material), it is known from Obi Major (Hartert, 1903; Jany, 1955; Hartert stated mistakenly that *C. macrurus* had been taken on Obi Major by Bernstein, for Bernstein's specimen is from Obi Latoe), Ceram Laot (Rothschild & Hartert, 1918), and Morotai (van Bemmelen & Voous, 1953).

On the Lesser Sunda Islands, *C. macrurus* is very little known. On a previous page I have already mentioned that from Bali only two specimens are known, belonging to the nominate race. From Lombok there are a few more records: specimens were obtained by Doherty and Everett in 1896 and by Rensch in 1927, about four skins altogether. Wallace (1864) also listed the species as having been obtained by him on Lombok, but I note that he made no mention of *C. affinis*, and that the British Museum collection contains several specimens of *C. affinis* collected on Lombok by Wallace, but no

¹) I have been unable to find on what the inclusion in the range of New Ireland, New Hanover and Lihir by O. Meyer (1936: 39, 52-53) was based and presume it to be an error.

C. macrurus (cf. Hartert, 1892: 539, 550). On Sumbawa the species was found by Everett and Rensch, in no more than two or three specimens altogether. The first record from Flores was as recently as 1975, when Father Schmutz obtained a single bird. On Timor, *C. macrurus* was not known to occur until Mayr (1944a) listed a specimen collected by Stein. Admittedly Oberholser (1915), without having examined material, included Timor in the range of *C. macrurus macrurus*, but this was probably based on the bird collected by Wallace (1864), which was subsequently identified as *C. affinis* by Hartert (1892), cf. Hellmayr (1914: 66). From Sumba, also a single specimen is known, collected by Stein (cf. Mayr, 1944a). There are no records from Alor. The three specimens known from Wetar will be discussed below. Notwithstanding the scantiness of records, there is no reason to assume that *C. macrurus* is rare on the Lesser Sunda Islands. Information received from Father Schmutz is that on Flores the species is quite common, a fact of which he was unaware until he learned its calls. There is also an egg in our collection, received from Father Verheijen: although originally identified as an egg of *C. affinis* (the only species of nightjar then known from Flores), it is clearly referable to *C. macrurus*.

Discussion. — The first name to be given to a population of *C. macrurus* east of the nominate race (Java), was *Caprimulgus Schlegelii* G. R. Gray (1869). The name has been rightly rejected as a nomen nudum. However, Meyer (1874) again mentioned *C. Schlegelii*, and although he did not give a description and observed that: "*C. Schlegelii* Gray, welche neue Art Gray selbst schon mit einem ? bezeichnet, dürfte einzuziehen sein", he gave a reference to: "Proc. Zool. Soc. 1858, S. 170; 1859, S. 154; 1861, S. 433". The second and third of these references are to names in bare lists only, and the first one (Gray, 1858) does not give a description either, but gives, under *Caprimulgus macrurus*, a further reference to: "Gould, B. of Austr. ii, pl. 9". I believe therefore that *Caprimulgus Schlegelii* can be accepted, with Meyer (1874) as its author, and the bird from Port Essington figured by Gould as its type.

As previous revisers have recognised that Australia and the mainland of New Guinea, with a number of adjacent islands, are inhabited by a single subspecies, a fact fully supported by my material, I need not discuss the names *yorki*, *keatsi*, *albolaxatus*, *coincidens*, *rogersi* and *aruensis*.

There remain the following names, here placed in the synonymy for the first time: *mesophanis*, *meeki*, *oberholseri*, *kuehni*, *schillmölleri*, and *obiensis*. I shall discuss these in chronological sequence.

When Oberholser (1915) described *C. macrurus mesophanis* on the basis of a single specimen, a duplicate from Leiden received in exchange, he believed

C. m. schlegelii to be a nomen nudum and he had not seen topotypical *C. m. yorki*. Oberholser examined a single Australian specimen that he ascribed to *keatsi*, as well as three birds from New Guinea, which he claimed were smaller and paler than *mesophanis*. A difference in colour is not apparent in the much larger material available to me. The supposed difference in size is equally dubious although Moluccan birds may indeed average a few millimetres longer in the wing (see table I).

C. m. meeki was described as nearly allied to the form from New Guinea, but darker, especially on the crown which was said to be browner and darker, not so greyish, and on the middle tail feathers. The large white tips to the tail feathers were also mentioned. I have carefully compared three specimens from Sudest Island (belonging to the original series on which *meeki* was based) with specimens from New Guinea and the Moluccas and am quite unable to see any of the differences mentioned by the authors of *meeki*. When Mayr & Rand (1937) dealt with *C. macrurus* of New Guinea and adjacent islands, they left Sudest Island out of discussion, and nobody appears to have studied *meeki* since its description.

C. m. oberholseri was diagnosed as differing strikingly from typical *macrurus*: "the upperside of the body is only slightly more rufescent, but the underside is decidedly more rufescent, especially on the upper throat and chest, but also on the abdomen. The outside of the wings is also more rufous". At the time the material from Java available to the describers of *oberholseri* was extremely poor, but they had a series from Borneo, which they believed to be identical with birds from Java, and it appears that their description of *oberholseri* was based on a comparison with specimens of *C. m. salvadorii* from Borneo, which is a less rufous race than *C. m. macrurus* from Java. I have examined two topotypical specimens of *C. m. oberholseri* from Lombok and in addition four specimens from Saleyer and Djampea, which according to Rothschild & Hartert (1918) agree perfectly with topotypical *oberholseri*. Comparing my specimens with a large series from Java, I can agree that the underparts are distinctly deeper brownish; the upperparts are, however, not more rufescent, but on the contrary greyer, less brownish. In the description of *oberholseri* no mention is made of the more eastern subspecies, but under the next race, *mesophanis*, it is stated that: "The colour of *C. m. mesophanis* is more like that of *oberholseri*, and may be said to be somewhat intermediate between the latter and *l.* [misprint for *C.*] *m. macrurus*, the upper throat is reddish, the abdomen darker, more rufescent than in *C. m. macrurus*, but not so bright as in *oberholseri*, the barring narrower than in *C. m. macrurus*, about the same as in *C. m. oberholseri*". The only actual difference given between *mesophanis* and *oberholseri* is the

slightly brighter abdomen of the latter. In my material this difference does not exist. My males have the white tips to the outer rectrices fairly short, 37, 38, 39 and 42 mm, but not shorter than in several specimens from other localities.

C. m. kuehni from the Kei Islands was based exclusively on small size (five specimens, 4 ♂, 1 ♀ in moult) the wings being 175-177 mm. In a male paratype I found that one wing, presumably the one measured by Rothschild & Hartert, has a length of 177 mm, but the other wing measures 181 mm. Even the lower figure is above the minimum of *schlegelii* and shows that the small size of *kuehni* is at most an average character, insufficient to uphold the race.

C. m. schillmoelleri is not darker than birds from New Guinea and the South Moluccas. The distribution ascribed to this race (Stresemann, 1931; Mayr, 1941; Rand & Gilliard, 1967): North Moluccas, Waigeo and Batanta, but with a different subspecies on the New Guinea mainland is unlikely, and I believe that in no other bird species a similar pattern of distribution has been recorded. My rejection of the subspecies is of course based on comparison of material, not on geographical considerations.

Finally there is *C. m. obiensis*, described as: "Noch dunkler als die von Halmahera beschriebene Rasse *C. m. schillmölleri*, mit breiteren schwarzen Mittelflecken der Federn des Hinterkopfes und des Schwanzes. Gelbbraune Säume der Flügeldecken düsterer als bei *schillmölleri*" (Jany, 1955). I have compared the type and a paratype of *C. m. obiensis* and an additional specimen from Obi Latoe with material from various other islands in the North and South Moluccas and other parts of the range of *C. m. schlegelii*, and am quite unable to confirm the characters claimed by Jany (probably based on a very limited comparative material), or any other character that would support the validity of *C. m. obiensis*.

The first person to discuss a specimen from Wetar was Finsch (1901). He identified it as *Caprimulgus manillensis* (= *C. macrurus manillensis*), partly on the basis of its small size, in which it agreed with that subspecies and not with geographically nearer races of the species. Hartert (1904) who had two skins, a male and a female, followed Finsch in associating birds from Wetar with *manillensis* — he regarded *manillensis* as specifically different from *C. macrurus* and listed *celebensis* as a subspecies of *C. manillensis*. He included Wetar in the range of: "The southern form of *C. manillensis*", and thus gave the Wetar birds the name *C. manillensis celebensis*. Two years later Hartert (1906) concluded that *C. macrurus* and *C. manillensis* are conspecific; therefore he called birds from Wetar *C. macrurus celebensis*. In their later revisions of *C. macrurus* neither Oberholser (1915) nor Rothschild & Hartert (1918) made mention of birds from Wetar, so that one may assume that they still

assigned them to the "species" *C. manillensis*, which they did not discuss. Finally, Peters (1940), who did regard *C. manillensis* and *C. macrurus* as conspecific, included Wetar Island with a query in the range of *C. macrurus celebensis*.

Though zoogeographically the classification as proposed by Finsch and Hartert is, as we know now, very unlikely, I am not aware that anybody has ever re-studied their material or questioned their results (except for Peters, as mentioned above, who did it certainly for geographical reasons).

The specimen from Wetar identified by Finsch (1901) as *C. manillensis* shows moult in the wings, but on each side the 3rd (longest) primary appears to be full-grown; the bird, a female, is undoubtedly very small: wing 163, tail 102, white distal end of outer rectrix 25, of second rectrix 12 mm. In other dimensions it is also small: the greatest width of the two central rectrices is 23 mm, against 27-31 mm in 12 specimens of *C. m. schlegelii*. Nevertheless, the specimen belongs in my opinion to the typical group of subspecies and not to the "manillensis" group: it has definitely only one broad white throat patch and as regards the tail-tips it is an unfortunate fact that females of *C. m. schlegelii* can have a tail-pattern greatly resembling that found in both sexes of *C. m. manillensis*. The specimen from Wetar has the outer vane of the outer rectrix brownish like *C. m. manillensis* and not white as in *C. m. celebensis*. As regards the small size of the bird from Wetar, the most likely explanation is that it is a juvenile. A fledgling from New Guinea and one from Java tend to have similarly narrow primaries and rectrices. The male from Wetar, similarly small, has much larger white tips to the two outer pairs of rectrices than the female, providing proof of sexual difference in this character. Although more material from Wetar is required, it looks as if the few specimens hitherto recorded from the island are juveniles or at least immatures. Anyway, they belong to the typical group of subspecies, and I consider it likely that they are simply juvenile *C. m. schlegelii*.

The one bird from Sumba (AMNH no. 346702) is also small; it is characterized by the cold brown underparts, the interspaces between the cross-bars being not buffish but almost white. Mayr (1944a: 141), remarking on this same bird, observed: "This single adult male is wholly insufficient for the determination of the subspecific status of the Sumba population". To this I have nothing to add and the same can be said of the single juvenile female known from Timor. As birds from the more western Lesser Sunda Islands (Lombok to Flores) as well as the islands to the east: Babar and the Tanimbar Islands, belong to the subspecies *C. m. schlegelii*, it is for zoogeographical reasons most unlikely that the birds from the interposed islands Wetar, Timor and Sumba would belong to a different subspecies.

Material. — Australia, Northern Territory: ♂, IX.1855, Quail Island off Melville Island (BM no. 57.10.28.74); ♂, 21.VIII.1948, Yirrkala, Arnhem Peninsula (USNM no. 405844); ♀, 14.IV.1948, Nightcliff near Darwin (USNM no. 405842).

Australia, Queensland: ♂, 31.VII.1923, Temple Bay (BM no. 1925.11.1.646); ♂? 5.VI.1948, Portland Roads, Cape York Peninsula (QM no. 0.5154); ♂, 10.VI.1948, Iron Range, Cape York Peninsula (QM no. 0.5155); ♂, 12.VIII.1956, Wongabel Camp near Atherton (QM no. 0.5700); ♂, 30.VIII.1958, Upper Alligator Creek, about 15 miles S. of Townsville (QM no. 0.6297); ♂, 28.IX.1958, Stewart's Creek near Daintree (QM no. 0.6315); ♂, 4.X.1960, Endeavour River, Cooktown (QM no. 0.6758); ♂, 22.X.1960, Shipton's Flat, S. of Cooktown (QM no. 0.6760); ♂, 15.VII.1964, Tully (BM no. 1964.60.172); ♂, 22.VII.1964, Tully (BM no. 1964.60.171); ♂, undated (old, leg. Broadbent), Cardwell (QM no. 0.10753); ♀, 4.VII.1923, Cape Grenville (BM no. 1925.11.1.647); ♀, 20.X.1960, Endeavour River, Cooktown (QM no. 0.6757); ♀, 22.VII.1964, Tully (BM no. 1964.60.170); ♀, 29.V.1964, Inkerman Hsd. (BM no. 1964.60.169); ♀, undated (old, leg. Broadbent), Cardwell (QM no. 0.10752).

Bismarck Archipelago: ♂, 13.VI.1879, Blanche Bay, New Britain (BM no. 98.12.2.403); ♂, 9.VII.1886, Kakinal, New Britain (BM no. 91.10.20.4).

Louisiade Archipelago: ♂, 26.IV.1898, Sudest Island (AMNH no. 632965); ♂, 5.V.1916, Sudest Island (AMNH no. 632967); ♀, 5.V.1916, Sudest Island (AMNH no. 632970).

New Guinea and adjacent islands: ♂, 1857, Aru Islands (BM no. 58.3.10.120); ♂, 1857, Aru Islands (BM no. 88.10.3.159); ♂, 1858, Amberbaki, Vogelkop (BM no. 98.12.2.401); ♂, 25.II.1865, Wammer, Aru Islands (RMNH cat. no. 2); ♂, 9.V.1867, Waigama, Misool (RMNH cat. no. 10); ♂, 3.VII.1867, Misool (RMNH cat. no. 12); ♂, 24.VII.1867, Waigama, Misool (RMNH cat. no. 13); ♂, 20.IV.1876, Mansinam, Arfak (RMNH cat. no. 3); ♂, 1873/1879, Port Moresby (BM no. 79.3.6.17: the specimen is undated, but it was collected by Broadbent, who visited New Guinea several times between 1873 and 1879, cf. Whittell, 1954: 77, and this fits the year of acquisition, 1879); ♂, IX.1896, Bongu (or Dongu?), Astrolabe Bay (MTD no. C 15028); ♂, 21.VII.1907, Geitenkamp, Noord R. (RMNH cat. no. 5); ♂, about 1907, Kaukas, Onin Peninsula (RMNH cat. no. 8); ♂, V.1910, Mimika R. (BM no. 1911.12.20.921); ♂, 20.IX.1910, Wataikwa R. (BM no. 1911.12.20.927); ♂, 9.X.1910, Wataikwa R. (BM no. 1911.12.20.928); ♂, 16.X.1912, Kloofbivak, Noord R. (RMNH cat. no. 9); ♂, 1.VI.1949, Wailibit, Batanta (RMNH no. 22702); "♀" = ♂, 25.VII.1959, Wanggo (RMNH no. 30098: this bird is sexed as a female and was recorded as such by Mees, 1964: 11, but is obviously a male); ♂, undated, Uemaio (?), Arfak (MTD no. C 5607); ♀, 7.II.1865, Wammer, Aru Islands (RMNH cat. no. 1); ♀, 16.VI.1867, Misool (RMNH cat. no. 11); ♀, 26.VII.1867, Waigama, Misool (RMNH cat. no. 14); ♀, IV.1873, Kordo = Biak (MTD no. C 2407); ♀, VII.1873, Andai, Arfak (MTD no. C 2408); ♀, 25.VII.1907, Geitenkamp, Noord R. (RMNH cat. no. 6); ♀, 23.IX.1907, Alkmaar, Noord R. (RMNH cat. no. 7); ♀, 9.X.1910, Wataikwa R. (BM no. 1911.12.20.929); ♀, 23.IV.1961, Oengari (RMNH no. 42480); ♀, 28.III.1962, Koerik (RMNH no. 42481); ♀, 29.III.1962, Koerik (RMNH no. 42482); ♀, 27.V.1962, Koerik (RMNH no. 42483); [♀], undated, Merauke (RMNH cat. no. 4).

North Moluccas: ♂, 17.XII.1860, Ternate (RMNH cat. no. 1); ♂, 19.IV.1861, Ternate (RMNH cat. no. 3); ♂, 29.IV.1861, Ternate (RMNH cat. no. 5); ♂, 1.XI.1864, south Halmahera (RMNH cat. no. 9); ♂, 5.VIII.1876, Ternate (RMNH cat. no. 15); ♂, 12.I.1950, Nucifera, Halmahera (ZMA no. 8917); ♂, 26.VII.1953, Hol Telaga, Obi (MZB no. 21492, holotype of *Caprimulgus macrurus obiensis*); ♂, 19.IX.1953, Laiwoei, Obi (MZB no. 21493); ♀, II.1861, Batjan (RMNH cat. no. 2); ♀, 21.IV.1861, Ternate (RMNH cat. no. 4); ♀, 20.VIII.1862, Obi Latoe (RMNH cat. no. 2); ♀, 5.VII.1863, Damar, off the southern tip of Halmahera (RMNH cat. no. 6); [♀], 25.X.1863, Ternate (RMNH cat. no. 7); ♀, 3.X.1864, south Halmahera (RMNH cat.

no. 8); ♀, 1.VII.1949, Nucifera, Halmahera (ZMA no. 8916); [♀], undated Halmahera (MTD no. C 2407).

South Moluccas: ♂, 1861, Buru (also spelled Bouru and Boeroe on labels) (BM no. 73.5.12.1181); ♂, ca. 1861, Wahai, Ceram (RMNH cat. no. 1); ♂, 10.IV.1863, Ceram (RMNH cat. no. 4); ♂, 21.VII.1863, Ambon (also spelled Amboina on labels) (RMNH cat. no. 5); ♂, ca. 1863, Buru (RMNH cat. no. 3); ♂, 30.VIII.1866, Ambon (RMNH cat. no. 8); ♂, received in 1867, Ambon (RMNH cat. no. 9); ♂, 16.VII.1870, Buru (RMNH cat. no. 10); ♂, 9.IX.1873, Ceram (ZMA no. 737); ♂, 10.X.1875, Ceram (RMNH cat. no. 11); ♂, VIII.1876, Kajeli, Buru (RMNH cat. no. 12); ♂, IV.1898, Buru (RMNH cat. no. 14); ♂, 29.IV.1910, Kwalalara, W. Ceram (RMNH cat. no. 15); ♀, 7.XI.1864, Buru (RMNH cat. no. 6); ♀, 17.XI.1864, Buru (RMNH cat. no. 7); ♀, VIII.1876, Kajeli, Buru (RMNH cat. no. 13).

Kei (Kai, Key) and Tanimbar (Timorlaut) Islands and Babar (Babber): ♂, 11.IX.1884, Timorlaut (MTD no. C 7625); ♂, 5.V.1898, Toeal, Klein Key (AMNH no. 632975); ♀, 8.I.1901, Jamdena Island, Tanimbar (AMNH no. 632991); ♀, 28.VIII.1905, Tapa, Babber (AMNH no. 632990).

Lesser Sunda Islands from Lombok to Wetar: ♂, VI.1896, Lombok (AMNH no. 632851); ♂, 13.X.1902, Wetar (AMNH no. 632998); ♂, 16.IV.1927, Silong, Lombok (MZB no. 14960); ♂, 9.VI.1932, Mao Marrou, E. Sumba (AMNH no. 346702); ♂, 15.IX.1975, Nisar, 250 m, W. Flores (RMNH no. 75297, new record for Flores; collected by Father Schmutz); ♀, 7.III.1898, Wetar (RMNH cat. no. 1); ♀, 12.I.1932, Tjamplong, Timor (AMNH no. 345569).

Saley and Djampea: "♀" = ♂, XI-XII.1877, "Makassar" = Saleyer (RMNH cat. no. 2); ♂, XI.1895, Saleyer (AMNH no. 632856); ♂, 22.VII.1922, Djampea (AMNH no. 266518); ♀, 14.XII.1895, Djampea (AMNH no. 632854).

9. *Caprimulgus macrurus manillensis* Walden

Caprimulgus manillensis Walden, 1875, Trans. Zool. Soc. Lond. 9: 159, — 249 — Luzon = Manilla (cf. Hartert, 1892: 545; Warren, 1966: 176).

Caprimulgus manillensis G. R. Gray, 1848, List Birds Brit. Mus. Fissir. 2 (1): 7 no. 11 — Manilla (nomen nudum).

Caprimulgus manillensis G. R. Gray, 1869, Hand-List Birds 1: 57 — Manilla (nomen nudum).

Caprimulgus macrurus delacouri Hachisuka, 1931, Ois. Rev. Fr. d'Orn. (n. s.) 1: 471 — Sigaboy, province de Cotabato, Mindanao.

Diagnosis. — This and the following two subspecies constitute the distinctive "manillensis" group. Size small; the white throat patch is divided in two halves by a median brown band; white tips to the outer tail feathers short; outer web of outer rectrix usually brown over its whole length, sometimes lighter towards the tip but rarely white; no sexual dimorphism in tail-pattern; underparts darker than in the subspecies of the typical group, with the transverse bands somewhat finer and closer together.

Distribution. — The Philippine Islands, where distributed widely. Recorded from Luzon, Masbate, Negros, Romblen, Ticao, Mindanao, Basilan (specimens examined), Bantayan, Bohol, Cebu, Mindoro (McGregor, 1909: 347), Leyte (Parkes, 1973), and on the basis of a sight observation from Samar (Rand & Rabor, 1960: 388). Does not occur on Palawan and the Sulu Islands, where replaced by subspecies of the typical group.

Discussion. — The validity of *C. m. delacouri*, already questioned by Peters (1940), has been denied by later workers although upheld by others (Parkes, 1973). I have examined all the original material, four specimens, and found them to be very dark as described by Hachisuka (1931). Another specimen from south-eastern Mindanao, as well as one from Zamboanga and two from Basilan are, however, much browner and prove that the darkness of the material of *delacouri* is due to individual variation. In size these birds agree very well with material from other islands. Hachisuka gave for his four specimens of *delacouri* a wing length of 171-178 mm, for specimens from Luzon 176-178 mm, and I do not understand how, on the basis of these figures, he could claim that *delacouri*: “parâit légèrement plus grande”.

The normal condition in this subspecies is evidently an entirely brown outer vane to the outer rectrix. In one specimen examined, however (RMNH no. 35614), the right outer rectrix has a white tip, the distal half of which is covered by a large dark brown blotch; the left outer rectrix has a white tip, the distal part mottled with light brown.

Material. — ♂, VI.1878, Basilan (BM no. 88.10.3.151); ♂, 15.II.1894, La Trinidad, Benguet Prov., Luzon (BM no. 97.5.13.54); ♂, 22.II.1895, Mt. Data, Lepanto Dist., Luzon (BM no. 97.6.14.58); ♂, 1.VI.1904, Romblen (USNM no. 192567); ♂, 26.III.1930, Sigaboy, Mindanao (BM no. 1932.6.2.10, holotype of *Caprimulgus macrurus delacouri*); ♂, 1.IV.1930, Sigaboy (BM no. 1932.6.2.11); ♂, 1.IV.1930, Bitogan, Sigaboy (BM no. 1932.6.2.12); ♂, 23.IV.1930, Sigaboy (BM no. 1932.6.2.13); ♂, 2.VIII.1952, Silliman Farm, Negros (RMNH no. 35613); ♂, 22.I.1959, Inalad, Siaton, Negros (RMNH no. 35614); ♀, IV.1878, Zamboanga (BM no. 88.10.3.186); ♀, V.1878, Basilan (BM no. 88.10.3.152); ♀, 5.VI.1902, Ticao (USNM no. 315041); ♀, 5.VII.1902, Masbate (USNM no. 192568); ♀, IV.1905, Piso, S. E. Mindanao (BM no. 1905.11.25.135); ♀, 29.V.1910, Cavite, Luzon (USNM no. 221516); ♀, 2.VIII.1952, Silliman Farm, Negros (RMNH no. 35612); ♀, 17.VI.1960, Bagacay, Sianton, Negros (RMNH no. 35615); sex unknown, received in 1860, Philippines (RMNH cat. no. 1).

10. *Caprimulgus macrurus celebensis* Ogilvie-Grant

Caprimulgus celebensis Ogilvie-Grant, 1894, Ibis (6) 6: 519 — Celebes = probably in the Minahassa (cf. Meyer & Wiglesworth, 1898: 320).

Diagnosis. — Very close to *C. m. manillensis*, from which this subspecies differs in having the tip of the outer rectrix entirely white, not with the outer vane brown (pl. 3).

Distribution. — This subspecies is only known from the northern peninsula of Celebes, where it has been recorded but a few times. The holotype was obtained by Meyer (or more likely by his native collectors); Brüggemann (1877) mentioned two specimens collected by Riedel at Gorontalo; these would have been destroyed with the Darmstadt Museum during the Second World War. Meyer & Wiglesworth (1898) described and figured a bird in the Dresden Museum, collected on Lembah Island in March 1895; Hose (1904) recorded

one from Rurukan; Raven obtained two specimens at Sumalata and Kwandang (= Koeandang) respectively, in 1914, and finally Kuroda Jr. (1954) mentioned a female from Mongondo (= Mogondo), collected in 1937.

Material examined. — ♂, 16.III.1895, Lembah (MTD no. C 14249); ♂, IX.1895, Rurukan, 2500' (BM no. 97.12.14.57); ♂, 25.X.1914, Kwandang (USNM no. 248427); sex unknown, undated but probably 1870 or 1871, "Celebes" without exact locality (BM no. 88.10.3.150, holotype of *Caprimulgus celebensis*).

11. *Caprimulgus macrurus jungei* Neumann

Caprimulgus macrurus jungei Neumann, 1939, Bull. Brit. Orn. Cl. 59: 92 — Taliaboe.

Diagnosis. — Similar to *C. m. celebensis*, but the white tips to the two outer pairs of rectrices even shorter.

Distribution. — Known only from Taliaboe, Soela Islands, but probably also occurring on the other islands of the Soela group.

Discussion. — The only character Neumann (1939) mentioned in his description of this subspecies is the one given above: "Male and female very similar to *Caprimulgus macrurus celebensis* Ogilvie-Grant from Celebes, but the extension of the white tips of the outer pairs of tail-feathers still more reduced, 15-17 mm., as compared to 25 mm. in *C. m. celebensis* and about 50 mm. in *C. m. macrurus*". However, in the four specimens of *celebensis* examined by me, the length of the white tips is only 19/20, 20/20, 20/22 and 22/23 mm, which makes the difference dubious, especially as the specimens of *jungei* have their tail-tips somewhat worn.

The reasons why I have, nevertheless, decided to recognize *C. m. jungei* are twofold. The first is that, although I have examined specimens of both *celebensis* and *jungei*, I have not had them at the same time, so that a direct comparison, which might conceivably have revealed additional differences, could not be made. The second is that the avifauna of the Soela Islands as a whole is well-differentiated from that of the Celebes, the Soela Islands having in most cases different subspecies, and that one would expect *C. macrurus* to conform to this pattern.

Neumann (1939) stated that the collections he described were likely to go to the Museum of Comparative Zoölogy, Cambridge, Mass., and the types of the new forms definitely so, but no specimens of *C. m. jungei* have ever been received in Cambridge (Paynter, in litt., 23.IX.1966). Letters from Neumann in the archives of the Rijksmuseum van Natuurlijke Historie, the last one dated 16 October 1941, four days before Neumann left for Cuba, reveal that at that time much if not all of the Taliaboe collection was still in his possession, in Charlottenburg. In that year (1941) he offered a part of the Taliaboe material for sale to Leiden, but as far as can be ascertained no transaction took place before he left Europe and there is definitely no

material from this collection in Leiden now. The only specimens of *C. m. jungei* I have been able to trace are the three from the Museum Zoologicum Bogoriense listed below; these are not part of the series of ten studied by Neumann, they were retained when the other material was sent to Europe. Five of Neumann's specimens are now in MTD (Eck, 1977).

Material. — ♂, 13.X.1938, Taliaboe (MZB no. 14972); ♂, 16.X.1938, Taliaboe (MZB no. 14973); ♀, 12.X.1938, Taliaboe (MZB no. 14971).

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TABLE I

Measurements (in mm). In the columns captioned "outer rectrix" and "second rectrix" the length of the white or pale tips to these feathers is given

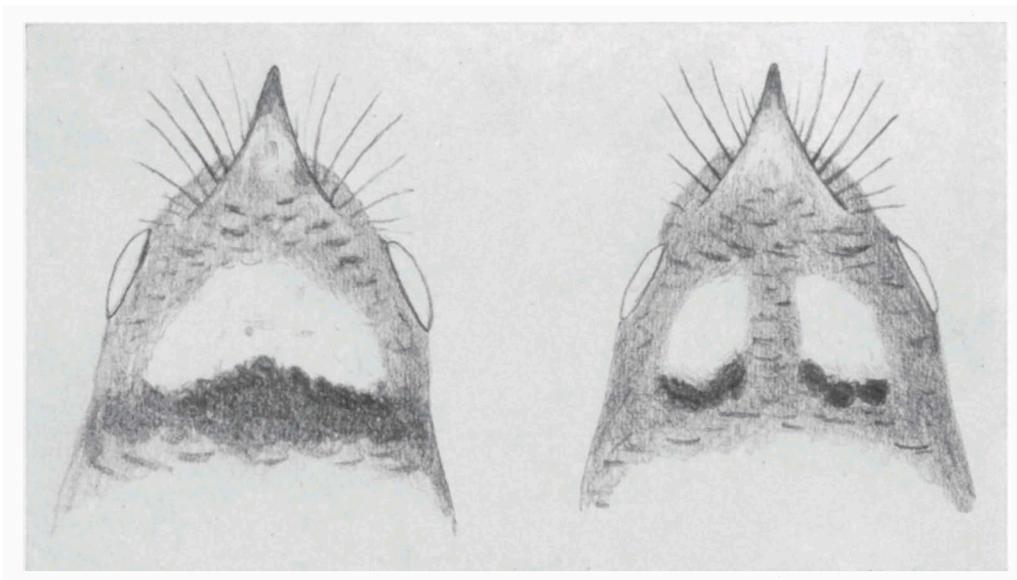
	wing	average	tail	average	outer	average	second	average	
					rectrix		rectrix		
<i>C. m. atripennis</i>									
Ceylon	9 ♂	165-180	173.3	118-134	126.3	36-48	40.4	35-46	40.5
	3 ♀	166-186	174.6	114-120	117.3	22-25	23.4	18-25	21.3
India	6 ♂	175-185	179.5	120-138	126.6	34-56	44.2	30-50	39.7
	6 ♀	170-181	176.5	121-131	124.8	20-32	25.4	15-27	20.8
<i>C. m. andamanicus</i>									
	2 ♂	182,186	-	113,126	-	31,37	-	31,35	-
	6 ♀	174-183	178.8	111-125	116.8	18,26	22.7	19-22	20.3
<i>C. m. albonotatus</i>									
	27 ♂	197-230	211.4	150-167	156.7	37-54	46.3	28-54	43.7
	31 ♀	196-220	208.5	149-160	156.4	19-44	27.2	17-43	25.5
<i>C. m. bimaculatus</i>									
Assam, Burma, N. Siam, Yunnan	13 ♂	199-212	205.2	149-162	156.5	35-53	43.3	35-49	41.0
	6 ♀	197-208	201.0	141-154	148.5	14-28	21.7	16-25	19.8
Indo-China	5 ♂	195-207	201.4	145-157	151.6	42-49	45.2	39-44	42.6
	11 ♀	196-210	202.3	137-163	147.7	16-27	22.4	7,14-25	18.5
Hainan	1 ♂	203	-	146	-	46	-	44	-
C. and S. Siam, Tenasserim, Malaya	28 ♂	185-207	195.9	126-157	142.9	33-49	42.7	33-48	41.8
	23 ♀	178, 185-205	195.2	125-156	138.7	19-31	25.0	15-26	21.4
Sumatra	10 ♂	184-202	192.1	141-148, 159	147.2	38-53	44.9	34-49	41.9
	5 ♀	186-193	189.4	135-143	139.3	22-30	25.5	10-32	21.5
<i>C. m. salvadori</i>									
	17 ♂	178-194	186.9	124-140	133.3	40-53	46.1	39-51	44.7
	9 ♀	175-193	184.0	121-138	130.8	20-33	25.1	14-30	20.8

	wing	average	tail	average	outer	average	second	average	
<i>C. m. johnsoni</i>									
	2 ♂	173,184	-	129,138	-	45,-	-	42,37	-
	3 ♀	171-179	-	116,122	-	15,29	-	11,24	-
<i>C. m. macrurus</i>									
	26 ♂	174-188	181.8	126-146	136.3	38-56	43.1	35-55	42.0
	15 ♀	168-190	178.2	122-137	129.2	17-28	21.8	10-25	18.4
<i>C. m. schlegelii</i>									
Australia	13 ♂	173-191	182.7	120-148	139.2	38-52½	45.2	35-55	43.2
	6 ♀	170-190	179.5	125-143	133.8	20-32	25.3	12-29	20.8
Bismarck Arch.	2 ♂	177,182	-	131,135	-	57,65	61	55,-	-
Louisiades	2 ♂	175,180	-	139	-	53	-	-	-
	1 ♀	178	-	133	-	38½	-	-	-
New Guinea	19 ♂	176-196	181.4	127-145	134.5	38-60	48.0	36-61	46.9
	13 ♀	170-182	177.8	118-138	129.0	24-37	33.2	16-33	27.9
North Moluccas	8 ♂	179-194	185.4	130-142½	137.8	40-49	44.6	37-47	42.7
	8 ♀	182-192	186.0	126-142	133.9	21-32	25.9	12-26	19.6
South Moluccas	12 ♂	181-191	185.3	127-138	131.6	34-52	47.8	44-53	47.6
	3 ♀	181-189	186.3	131-134	132.0	30-31	30.3	28-31	29.5
Kei and Tanimbar Isl.	2 ♂	174,181	-	131	-	40	-	37	-
	2 ♀	180,181	-	-	-	-	-	-	-
Wetar	♂	163	-	115	-	39	-	34	-
	♀	163	-	102	-	25	-	12	-
Lesser Sunda Islands	4 ♂	171-194	180.0	123-135	131.0	38-45	41.8	36-43	38.5
Saley and Djampea	3 ♂	180-185	182.3	127-147	136.7	36-39	37.3	38	-
	♀	177	-	122	-	-	-	-	-
<i>C. m. manillensis</i>									
	10 ♂	168-178	172.8	115-127	120.8	23-34	28.7	25-37	31.5
	8 ♀	166-178	171.5	110-128	119.0	15-30	24.0	22-30	26.0
<i>C. m. celebensis</i>									
	3 ♂, 1 ?	170-180	177.3	133-141	135.7	19-22	20.3	20-23	21.3
<i>C. m. jungei</i>									
	2 ♂	175,176	-	127,137	-	16,19	-	15,18	-
	♀	172	-	128	-	14	-	16	-

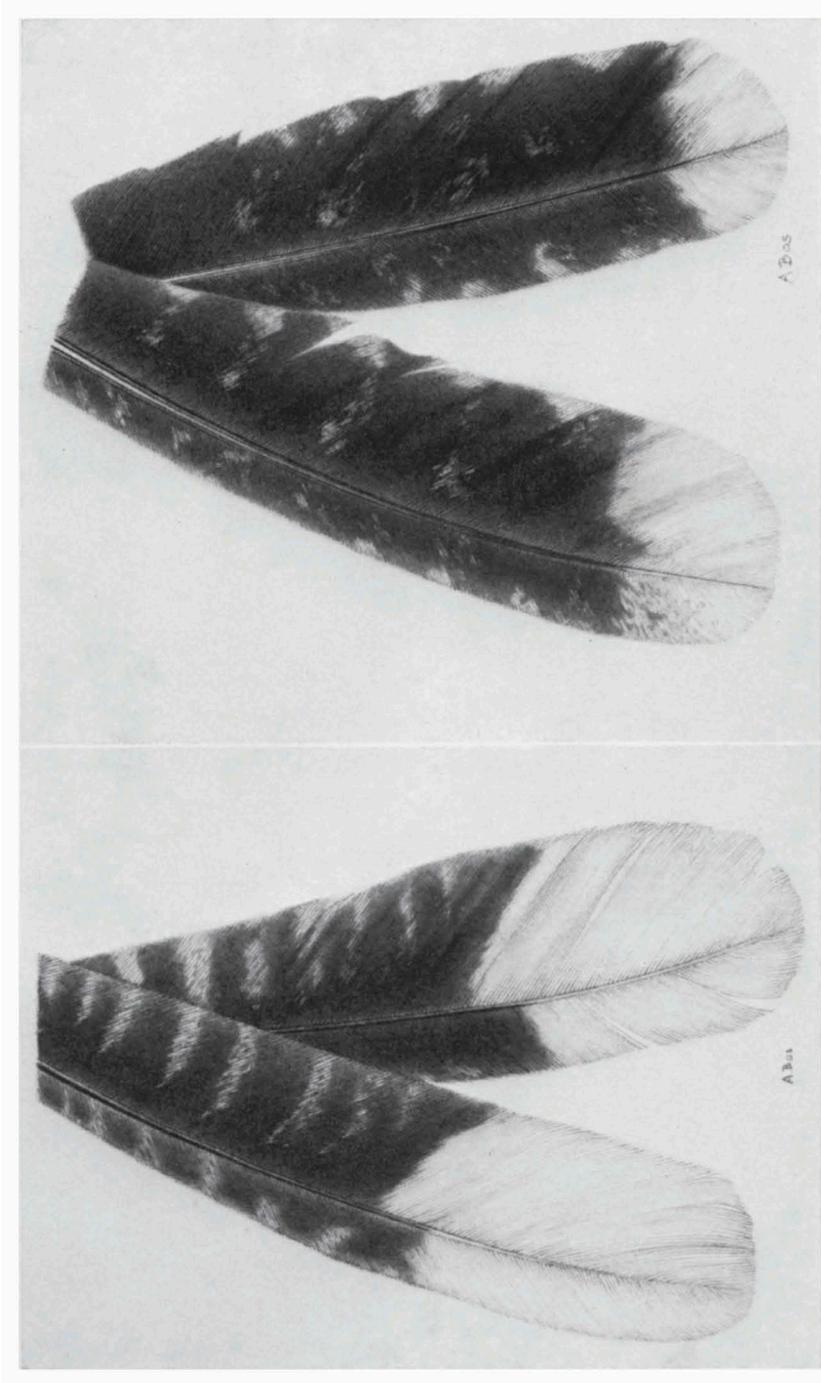
TABLE II
Measurements and weights of eggs

locality	date	collector	measurements (mm)	weight (gr)
<i>C. m. bimaculatus</i>				
Upper Chindwin	8.IV.1914	J. M. D. Mackenzie	30.4 x 22.4 31.9 x 22.6	0.547 0.572
"	19.IV.1915	"	29.2 x 22.2 29.1 x 22.2	0.509 0.533
Pegu	3.III.1916	"	31.2 x 23.2 30.5 x 23.4	0.500 0.478
"	5.III.1916	"	29.6 x 21.9 29.6 x 21.4	0.507 0.458
"	22.III.1916	"	30.6 x 22.5 31.3 x 22.2	0.499 0.509
"	1.IV.1916	"	32.3 x 23.4 31.7 x 22.8	0.576 0.554
Medan, Deli	4.IV.1915	de Bussy	30.4 x 22.8	0.526
"	16.II.1917	"	31.2 x 24.3 30.4 x 22.8	0.563 0.493
Polonia, Deli	21.II.1917	Sody	30.0 x 22.0 29.0 x 21.5	0.533 0.468
Sumatra, S.O.K.	-	de Bussy	31.3 x 22.0	0.514
"		"	30.0 x 23.5	0.597
"		"	29.3 x 22.2	0.458
"		"	29.8 x 23.2	0.520
<i>C. m. andamanicus</i>				
Port Blair	30.III.1907	Osmaston	29.0 x 21.6	0.450
<i>C. m. salvadori</i>				
Kuching	26.XII.1896	E. Bartlett	29.9 x 21.5 29.6 x 21.1	0.522 0.479
Pematang Toedjoeh (Pontianak)	IV.1930	Coomans de Ruiter	31.7 x 22.6 31.1 x 22.0	0.461 0.497
Poelau Moetoesan Paloh, Sambas	9.IV.1934	"	32.9 x 23.2 32.3 x 23.8	0.570 0.560

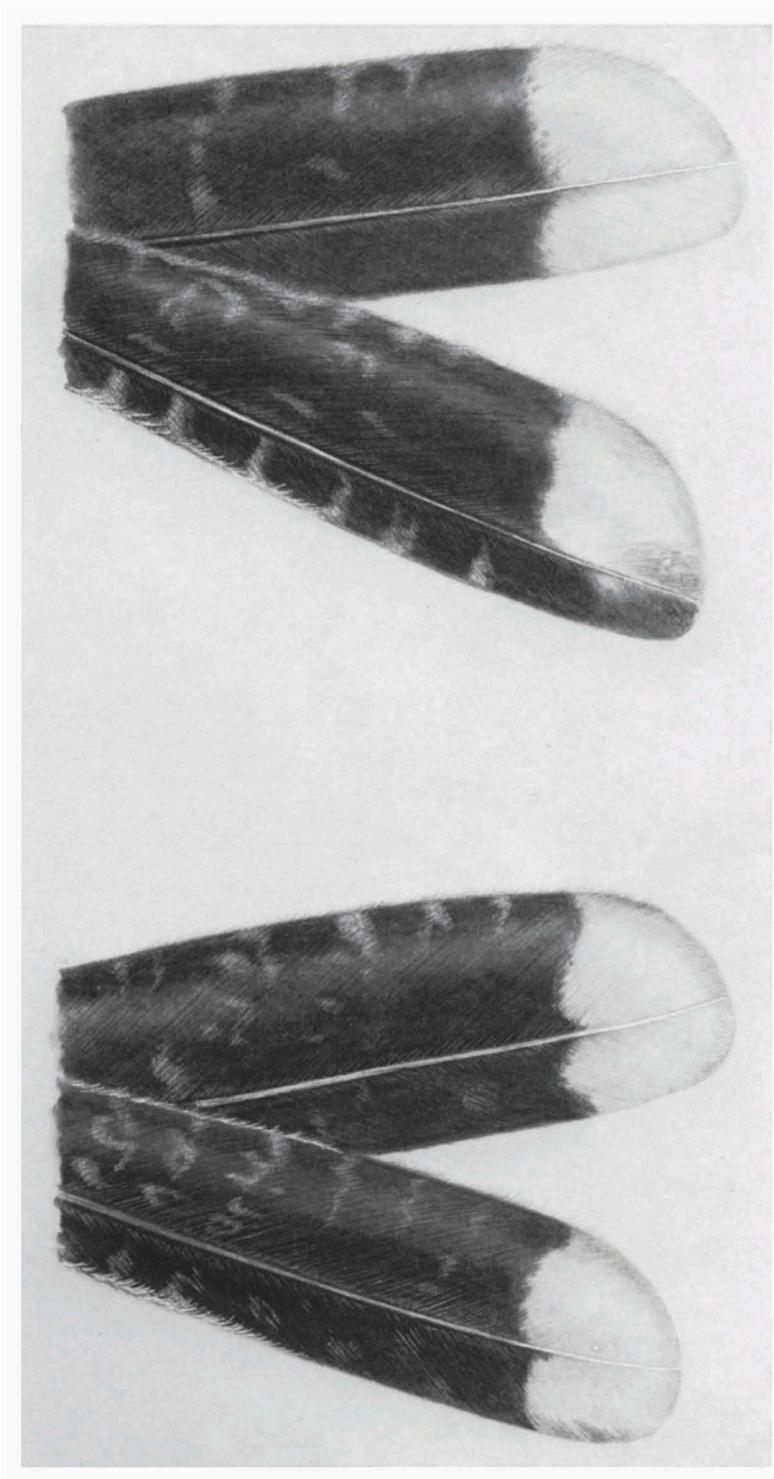
locality	date	collector	measurements (mm)	weight (gr)
<i>C. m. macrurus</i>				
Java	1859	Bernstein	31.1 x 23.1	0.580
"	"	"	30.2 x 22.6	0.520
"	"	"	30.0 x 21.0	0.402
"	1860	"	29.9 x 22.8	0.588
"	"	"	30.1 x 20.5	0.470
Soebang	25.IX.1923	Sody	28.7 x 20.6	0.438
Kali Boengin	12.X.1923	Bartels	30.3 x 21.7	0.460*
Soebang	10.IX.1924	Sody	28.2 x 21.7	0.454
Gedangan	8.IX.1928	Verbeek	28.8 x 22.4	0.440
"	28.IX.1929	"	28.7 x 20.0 27.5 x 19.8	0.364 0.362
"	22.IX.1930	"	28.9 x 21.1 26.1 x 20.4	0.454* 0.325*
"	18.X.1930	"	30.1 x 21.3 28.8 x 20.8	0.455 0.423
Sedari	19.X.1930	Bartels	30.4 x 21.4 28.5 x 21.1	0.460* 0.394*
Tjimapag (Palaboehan)	4.XII.1940	Bartels Jr.	29.0 x 22.4 29.1 x 22.4	0.489 0.461
E. Java		Kooiman	29.6 x 21.1 28.8 x 21.3	0.449 0.449
"		"	30.3 x 22.0 30.0 x 21.8	0.490 0.474
"		"	28.2 x 21.7 29.1 x 22.1	0.408 0.435
"		"	30.0 x 21.4 29.0 x 21.0	0.488 0.452
"		"	30.1 x 22.1 30.1 x 21.2	0.496 0.460
"		"	28.0 x 20.7	0.425
"		"	30.2 x 21.2	0.466
"		"	29.1 x 21.5	0.468
<i>C. m. schlegelii</i>				
Djinggor, Flores	11.X.1956	Verheijen	28.6 x 21.1	0.469
Alkmaar, N. Guinea	22.IX.1907	Lorentz	29.8 x 21.4	0.475



Ventral view of heads: left, member of the "typical" group; right, member of the "manillensis" group.



Outer and second rectrices of *C. m. macurus* viewed from below. Left ♂ (RMNH coll. Bartels no. 12123), right ♀ (RMNH coll. Bartels no. 9275); note the conspicuous sexual difference. Natural size. Drawing by A. Bos.



Outer and second rectrices of *C. m. celebensis* (left, ♂, USNM no. 248427) and *C. m. mamillensis* (right, ♀, USNM no. 192368). These races show no sexual dimorphism in tail-pattern. Note that in *C. m. mamillensis* the outer vane of the outer rectrix is brown right to its tip, whereas in *C. m. celebensis* the whole feather tip is white. Natural size. Drawing by R. van Assen.