

A Revised List of the Birds known from the Rhio-Lingga Archipelago

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THE Rhio-Lingga Archipelago is composed of a dozen or more major islands and several hundred smaller ones—*banyak-nya sa-gantang lada*, as many as there are peppercorns in a gallon measure. It begins on the far side of the Singapore Strait, seven miles from Tanjong Pagar, and stretches southwards, in a narrowing wedge, for about 125 miles.¹ In effect and origin it is a continuation of the high land of the Malay Peninsula, reduced in altitude and shorn of its attendant lowlands. There are numerous coral reefs, mostly on the outskirts of the group, but the islands themselves are rocky, and few if any owe their origin to coral formation or sediment. The larger islands in the north are hilly, reaching heights of 1,000 to nearly 1,500 feet, while parts of Pulau Lingga, at the south end of the chain, are mountainous. The famous Piek van Lingga, a bare, rugged, bifid peak rises steeply to 3,954 feet, while Sēpinchan, three miles to the north-east of van Lingga has a broad, flattish top, 3,000 to 3,300 feet high.²

The sea lying within the boundaries of the archipelago is sheltered water, and wherever the shores are not rocky the islands are flanked by mangrove. Originally they were covered with forest, but much of this has been destroyed. In the case of Singkep the ground was cleared to help in the search for tin, for which the island has long been famous. Elsewhere the forest was

1. The present centre of the residency is at Tanjong Pinang (Rhio), on the west side of Pulau Bintan, at the north end of the group. The seat of the old sultanate was on Lingga. Bintan is frequently written "Bintang", but the latter form is incorrect. The name is not from the Malay *Bintang*, a star, but from *Bintan*, a variant of *Bentan*, the common sea-shore tree, *Cerbera manghas* Linn.; the timber is poor, but the tree is well-known for its pretty flowers and an illuminant oil possessing "medicinal" properties.

2. Daik, situated on a river of the same name, on the south side of Lingga was the seat of the former Sultanate from 1787 onwards. It was this, the Sultanate of Rhio and Lingga, which made Lingga the inclusive name for the group of islands in this area, in place of the now more important Pulau Singkep.

cut for the sake of its timber, or to obtain land for cultivation and the establishment of plantations. Gambier, pepper, coffee, pineapples, coconuts and rubber have all been tried, but the soil is of poor quality and many of the former estates are now covered with *belukar* or *Melastoma* scrub.

Parts of the west side of the archipelago are separated from the present coast of Sumatra by a narrow, shallow strait, but the association is recent and superficial. The original Sumatran shore at this point lies behind a broad, flat belt of mud which is steadily growing eastwards as fresh silt is deposited along its edge. The interest of the fauna of the group is two-fold. There is the question of which species can maintain themselves in the limited habitats provided. There is the accident of the archipelago's position, tucked in at the point where the large land masses of Borneo, Malaya and Sumatra lie nearest to each other. As far as many animals, including the great majority of the birds, are concerned, the wide mud plain, with its thick, uniform vegetation, is as much a barrier as open water, and the archipelago is in effect as near to the southern end of the Malay Peninsula as it is to Sumatra proper.³

The current list of the birds of the Rhio-Lingga islands was drawn up by K. W. Dammerman and H. C. Siebers, with revisions by C. Boden Kloss: it appears, under Dammerman's name, in *Treubia*, 8, (3 & 4), 1926, pp. 319-22. It is based largely on published sources, and no attempt appears to have been made to examine original material except in the case of the specimens collected by Siebers on Pulau Durian, in the Rhio group, in 1923. These, together with auditory and visual records from Durian, are given in more detail in a short paper by Siebers published in the same volume (*tom. cit.*: 306-310). The compilers' principal sources appear to have been as follows,

Pulau Batam (Rhio group), data in Schot (1882), & notes by Kloss.

Pulau Bulan (Rhio group)⁴, a list by Chasen (1924: 61-62) based on a stay of ten days on the island, early April 1924.

Pulau Mapor (Rhio group), a list by Robinson (1916: 70-72) of the material collected on the island, late May to early June 1915.

3. An interesting and valuable early statement on this proposition is given by A. R. Wallace, in *The Malay Archipelago*, London, 1869, (1): 144-5.

4. The correct name for this island is Pulau Bulang—it has nothing to do with the Malay word *Bulan*, the moon—but *Bulan* is used widely, and even appears in the *Eastern Archipelago Pilot*, 4, 2nd ed., 1939. It is accordingly followed in the present paper.

Pulau Durian (Rhio group), data from Siebers (see above).

Pulau Lingga, Hartert's list (1900: 549-550) of the skins taken by A. H. Everett's collectors about January 1898.

Pulau Saya (given as Taya), Oberholser's paper (1919: 267-274) on material collected by Abbott and Kloss on the island, 26-28 July, 1899. (An earlier account of this visit, with a description of the islands, is given by Kloss, 1903: 58-59).

No information was available to them on the skins collected by Robinson and Seimund on Batam, Bintan, Kundur and the Karimons in 1908 (now mostly in the Raffles Museum collection, and listed by Chasen, 1931: 120), or on the skins taken by Abbott in the Rhio group in 1902, and on Lingga and Singkep in 1899 (see Kloss, 1904: *passim*). In addition they do not appear to have been aware of the collecting done by Kelham on Batam and the adjacent islet of Pulau Nongsa in 1877-80 (Kelham, 1881-82, *passim*; also quoted, in part, by Hume, 1880: 107-132, *passim*).

The 1926 list gives 140 names, of which 13 are double entries or indeterminate, leaving a total of 127 recognised species. Nine of these birds, shown as dubious on the list, are based on descriptions in Schot. Further collecting, or specimens taken by Robinson and Seimund in 1908, have confirmed the presence of five of these at some point in the group, and they are retained on the present list. The remaining four, namely,

Pelecanus roseus Gmel.

Threskiornis melanocephala (Lath.)

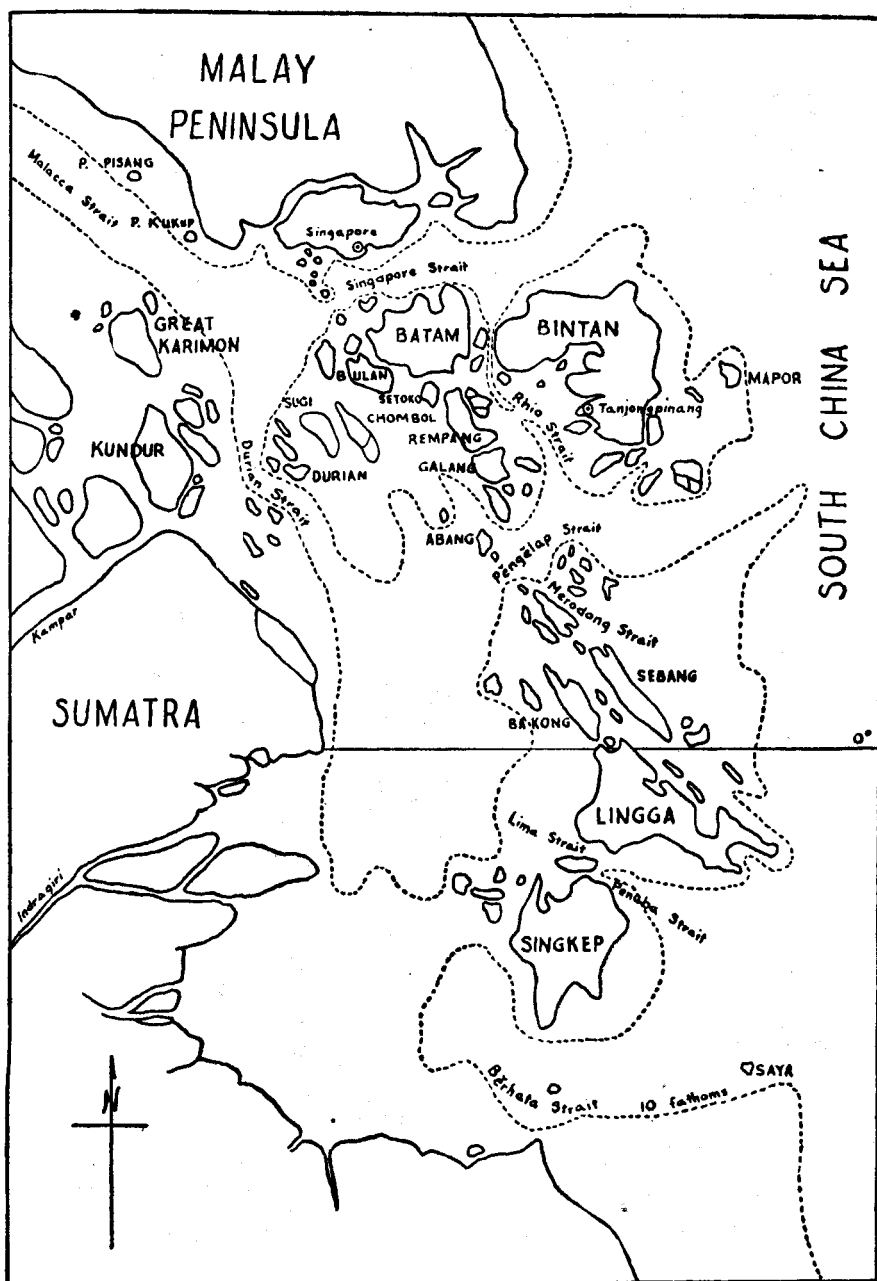
Plegadis falcinellus (Linn.) subsp.

Buceros rhinoceros Linn.

together with *Charadrius a. alexandrinus* Linn., recorded by Robinson (1916: 70), which is probably an erroneous diagnosis, have been omitted pending confirmation of their occurrence in the area.

In preparing the present list use has been made of the published sources cited above, except for the paper by Schot (1882), which is not available in Singapore. Data has also been taken from the following papers, in addition to three providing single records, or confirmation of records,

Pulau Batam, Bintan, Kundur & the Karimons (Rhio group), a list by Chasen (1931: 120) of the specimens obtained by Robinson & Seimund in the area in 1908.



Sketch map of the Rhio-Lingga Islands and surrounding area, showing the approximate position of the 10-fathom line.

Pulau Batam and Pulau Nongsa (Rhio group), occasional data in an annotated list by Kelham (1881-82: *passim*) of birds seen or taken in Malaya during the period 1877-1880.⁵

Pulau Bintan (Rhio group), a list by Chasen (1931: 114-119) of material collected on the island by Seimund during three weeks in May & June 1930.

Pulau Galang (Rhio group), a list by Chasen (1925: 95-97) based on a stay of a week on the island at the end of December 1924.

The relevant skins in the Raffles Museum collection have also been examined, to confirm, as far as possible, the names used for the Rhio birds in the present paper, and the validity of the records. The material available includes the great majority of the specimens listed in two of the earlier papers cited above, Robinson (1916) and Chasen (1924), and the two more recent papers by Chasen (1925 & 1931). In addition a small number of formalised skins from Pulau Belakang Padang, north of Pulau Batam, were examined in the course of 1950. These provided one new record for the Rhio group (*Halcyon smyrnensis fusca*), and confirmation of two others.

Records from all these sources bring the number of species known from the islands from an acceptable total of 117 to 148. Finally a further 31 species have been added, and another dubious record confirmed, by the material in a most valuable collection of birds sent up from Singkep during the course of 1950, by Mr. A. H. de Bruyn. A separate report on this material will follow in a later Bulletin: with the data from it, and from a

⁵ Capt. (later Brigadier-General) H. R. Kelham, of the 74th Highlanders, was in Malaya at intervals from February 1877 to the later part of 1880. For the first seven months of this period he was in camp near Kuala Kangsar (possibly at Sayong, on the east side of the river), in Perak. Thereafter he was stationed for about three years at Tanglin Barracks, Singapore, but once, and possibly twice, during this latter period he was away in Hongkong and China on duty. He was a keen shot and an ardent collector of bird skins. While in Singapore he made a number of trips in search of specimens, including visits to Pulau Nongsa and the north coast of Batam. He was in correspondence with A. O. Hume, and met and went collecting with Wm. Davison when the latter visited Singapore. Kelham is the source of a number of Hume's Singapore records, including all those relating to Pulau Nongsa and Batam. Kelham wrote an account of his experiences collecting in Malaya, which was published in four parts in the *Ibis* for 1881-82 (reprinted, in three parts, *JSBRAS*, 1882-83). This was the first paper devoted to field notes on Malayan birds to appear in a technical journal, and is a landmark in the history of local ornithology. It was also Kelham's only contribution to the *Ibis*, though he remained a member of the B.O.U. until his death, in his 78th year, in October 1932. In company with Major-General Sir Percy Cox he was one of the two vice-presidents of the Union for the years 1926-27.

short visit paid to Singkep by the present writer, as the guest of Mr. de Bruyn, in January 1951, the total number of species now known from the Rhio-Lingga area rises to 180 or, if the doubtful records still unconfirmed are included, 185. This can by no means be the final figure for the group. There remain some 30-40 regular migrants, and a smaller number of occasional visitors, which must certainly be reaching the islands, but have not yet been reported from them. There are also, no doubt, a few residents still undetected. In all the total number of birds native to the archipelago, or reaching it, is probably in the region of 250-260 species. Nevertheless we are now aware of the major elements in its avifauna.

The records for the Rhio-Lingga Archipelago are shown in the present paper under three headings,

Pulau Saya (= P. Saja of the Admiralty Charts) and islets.

Lingga group of islands, and adjacent islets.

Rhio group of islands, and adjacent islets.

These follow naturally from a general consideration of the form of the archipelago, and the distribution of its avifauna.

The Rhio-Lingga group rises from a submarine plateau lying at a depth of ten to eight fathoms or less. It is bounded on three sides by deeper water—to the north by the Singapore Strait, to the east by the southern end of the South China Sea, and to the south by the Běrhala Strait. On the west side the water is shallower, but this is clearly due to recent sedimentation, and though the western part of the Běrhala Strait, and the Kundur and Karimon Straits, now have average depths of less than seven fathoms, there is no doubt that they were formerly much deeper.

In addition to these stretches of water confining the archipelago, the group itself is divided by two channels with depths of more than ten fathoms. One, the Durian Strait, cuts Kundur and the Karimons off from the remainder of the Rhio Islands. The other, the Pěngēlap Strait, divides the Rhio group from the cluster of southern islands, Lingga, Sěbang, Bakong, Singkep and their adjacent islets. The latter group clearly forms a single entity from the ornithological point of view. The straits between the islands all narrow to an effective width of less than two miles, and the shore lines are relatively hospitable.

For the purposes of the present paper the northern islands are also considered as a single unit, ignoring the deep cleavage of the Durian Strait, and the shallower split of the Rhio Strait which subdivides the eastern islands of the Rhio block. There is evidence that these two divisions have had some effect on the distribution of the mammalian fauna of the islands: this may also be true in the case of the reptiles and certain of the terrestrial invertebrates. But the straits are less than five miles wide at their narrowest points, and there seems every indication that size and the range of habitats provided are the real determining factors in regard to the distribution of the avifauna. We can, in fact, find no signs of avifaunal divisions along the lines of the Durian or Rhio Straits. On the other hand, there is clear evidence of separation along the lines of the three transverse straits—the Singapore Strait, the Pēngēlap Strait, and the Bērhalā Strait, points to which we shall return later.

The Pulau Saya group (about Lat. $0^{\circ} 47''$ S., Long. $104^{\circ} 56''$ E.), lying 26 miles south-east of Singkep, is again shown here as a separate unit. Its affinities lie equally with Singkep or Billiton. Essentially its avifauna is that of the small, wooded, uninhabited island type, and it is included in this paper by reason of its proximity to Singkep. Kloss (1903: 58) gives the following description of his visit to Saya during the cruise of the *Terrapin*.⁶

The island is fairly steep-to, of granite formation rising to a double peak about 600 feet high. It is about a mile and a half long north and south, oval in shape and covered with forest.

Landing on the east side on a sandy bay in a bight between the hills we found at the south end of the beach, just within the jungle, a spring of good water. Near the shore the bay was blocked up with coral over which at low tide we had to scramble. A little party of Orang Laut in their crazy praus, visiting the island for "ikan merah" for which it is well known, told us that rats, squirrels, and a "biawak" were to be got; but during the three occasions we were ashore we saw neither. The only birds obtained were the Nicobar (*Calanus nicobarica*) and Nutmeg pigeons (*Myristicivora bicolor*), which last occurs on nearly all islands in this region: the glossy starling (*Calornis chalybeus*) with dark metallic green plumage and red

⁶ The *Terrapin* was owned by Dr. W. L. Abbott, of Philadelphia, U.S.A. The specimens collected on this and other cruises passed to the Smithsonian Institution, Washington D.C. The scientific names in the following extract are given unchanged from the form in which Kloss published them. *Calornis chalybeus* = *Aplonis panayensis* subsp. *Columba grisea* = *C. argentina* Bp. *A. rhodolama* must be an error: Oberholser lists *Leptocoma microleuca* subsp., as shown in the text below. *Biawak* (Malay) = a monitor-lizard, *Varanus* sp.: it is not unlikely that *V. salvator* occurs on Pulau Saya.

BIRDS KNOWN FROM THE RHIO-LINGGA ARCHIPELAGO

irides: a gaudy little sunbird (*Anthothreptes rhodolaema*), the Eastern reef heron (*Leptorodius sacer*), and *Halcyon chloris*, the blue-and-white kingfisher. Last and best of all was one specimen of *Columba grisea*, a bird of extreme rarity in collections. In general appearance it is somewhat similar to the cream-and-black Nutmeg pigeon if the former colour were replaced by a pale grey.

On the Nyamok Islands about a mile north of Taya (= Saya), two islets, the larger no more than two or three hundred yards in diameter, we shot a blue-and-white kingfisher and the reef heron.

These islets, neither of which is more than 150 feet high, are covered with thin jungle in which we saw several specimens of the Nicobar pigeon—the "burong mas" or golden bird of the Malays.

The avifauna of the Saya group, as recorded by Oberholser (1919: 267-74), consists of three sea and shore birds (*Sterna a. anæthetus*, *S. s. sumatrana* and *Demigretta sacra*) found widely on isolated islets and stacks throughout the Malaysian region; the three widely ranging pigeons (all with a fondness for small islands) noted by Kloss; three other land birds, again species found most widely on small islands, two of which have even colonised Pulau Jarak in the Malacca Strait; and *Icthyophaga ichthyæetus* (on a sight identification). The majority of these birds occur all through the Rhio-Lingga group. Three (*Sterna anæthetus*, *Columbia argentina* and *Calonias nicobarica*) are not found elsewhere in it, but none of the islands in the group proper are sufficiently isolated for them. Oberholser ascribes the remaining land birds to subspecies as follows,

Halcyon chloris cyanescens (Oberh.)

Leptocoma jugularis microleuca (Oberh.)

Aplonis panayensis richmondi (Oberh.)

The first two of which occur in the same form in the Rhio-Lingga area, on Billiton and in Borneo and Sumatra, while the third, if valid, is restricted to Pulau Saya and the Nyamok Islets.

As we have noted, the Rhio group can best be listed here as a single unit. Collecting has been most intense, in relation to the size of the islands, on Pulau Mapor, Pulau Durian, Pulau Galang, Pulau Bulan, Pulau Bintan and Pulau Batam, in that order. The number of recorded land birds that are probably resident on each island is shown in the following table. The last column gives adjusted totals, in which species likely to be occurring all through the group have been marked down for each of the eight islands, irrespective of whether or not they have yet been reported from them.

	Area (in Sq. Miles) ⁷	Highest Point ⁷	Number of Species probably Resident	
			Actual Records ⁷	Adjusted Totals
		feet		
Great Karimon ..	30	1,480	12	(c.27)
Pulau Kundur ..	90	464	6	(c.32)
Pulau Durian ..	80	1,009	32 + 73	(c.38)
Pulau Bulan ..	32	731	36	(c.40)
Pulau Galang ..	25	595	29	(c.34)
Pulau Batam ..	130	469	45 + 71	(c.50)
Pulau Bintan ..	325	1,213	71 + 71	(c.75)
Pulau Mapor ..	12	351	20	(c.24)

In broad outline the avifauna of the Rhio Islands is an impoverished version of that of Singapore Island and its adjacent islets. In comparison with the mainland of the peninsula, and with the adjacent parts of Sumatra, the most striking deficiencies are the complete absence of members of the Phasianidae and Capitonidae, both of which are poorly represented on Singapore Island, and the relatively indifferent display put up by the Accipitridae, Rallidae, Cuculidae, Strigidae, Bucerotidae, Picidae, Timaliidae, Turdidae, Muscicapidae, Sturnidae and Ploceidae, some of which again are much restricted further north. Both areas are clearly deficient in the birds normally frequenting broad belts of thick jungle, while the Rhio group is apparently also short of grassland and open scrub forms. The flower-peckers alone are noticeably better represented here than they are on Singapore Island.

The only species among the 132 recorded with certainty from the Rhio group which have not been taken in Malaya are,

Orthorhampus magnirostris (Vieill.)

Columba argentina Bp.,

the first of which is probably a stray from the Karimata or Tambelan Islands, to the east. Both birds have been reported from a number of widely scattered points, mostly islands, in the northern part of the Malaysian sub-region. *O. magnirostris* has

⁷ Areas calculated approximately from the outlines on Admiralty Charts 1355 and 2757. Altitudes from the Eastern Archipelago Pilot, 4, 2nd ed., 1939, and the Malacca Strait Pilot, 3rd ed., 1946. A table showing the distribution of the records of non-migratory land birds in the Rhio group appears in an Appendix to this paper on pages 373-376, below.

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Species	Apparent Identity of Subspecies recorded from									
	Southern Malaya	Rhio Islands	Lingga Islands	Billiton	South Sumatra	Karimata Islands	Natura Islands	West Borneo	West Java	
<i>Sporornis elunda</i>	batana	batana	batana	malaccensis	batana	—	malaccensis	pallidus	batana	
<i>Turdus swinhoei</i>	atragularia	atragularia	kaipei	kaipei	atragularia	—	—	—	atragularia	
<i>Psittacula longicauda</i>	longicauda	defontainei	defontainei	defontainei	longicauda	defontainei	defontainei	longicauda	—	
<i>Carpodacus affinis</i>	—	—	affinis	affinis	affinis	—	—	affinis	affinis	
<i>Ptilinopus capensis</i>	malaccensis	malaccensis	malaccensis	capensis	capensis	—	—	capensis	capensis	
<i>Halcyon chloris</i>	himali	capensis	capensis	capensis	capensis	—	—	capensis	capensis	
<i>Eurystomus javanicus</i>	pallidus	harterti	—	billitonis	harterti	—	—	harterti	harterti	
<i>Sitta frontalis</i>	frontalis	—	frontalis	—	frontalis	—	—	frontalis	—	
<i>Malacoceros malaccensis</i>	malaccensis	malaccensis	malaccensis	malaccensis	malaccensis	—	—	malaccensis	malaccensis	
<i>Macronus gularis</i>	gularis	gularis	gularis	gularis	gularis	—	—	gularis	gularis	
<i>Chloropsis cochinchinensis</i>	adonophala	—	billitonis	billitonis	adonophala	—	—	adonophala	adonophala	
<i>Irena puella</i>	malaccensis	—	billitonis	billitonis	billitonis	—	—	billitonis	billitonis	
<i>Pycnonotus plumosus</i>	plumosus	plumosus	plumosus	plumosus	plumosus	—	—	plumosus	plumosus	
<i>Pycnonotus simplex</i>	simplex	simplex	simplex	simplex	simplex	—	—	simplex	simplex	
<i>Carpodacus malabaricus</i>	malabaricus	malabaricus	malabaricus	malabaricus	malabaricus	—	—	malabaricus	malabaricus	
<i>Troglodytes perdiculus</i>	affinis	affinis	affinis	affinis	affinis	—	—	affinis	affinis	
<i>Aplonis panagurus</i>	atragularia	atragularia	atragularia	atragularia	atragularia	—	—	atragularia	atragularia	
<i>Tringa religiosa</i>	religiosa	religiosa	religiosa	religiosa	religiosa	—	—	religiosa	religiosa	
<i>Andropogon elongatus</i>	elongatus	—	sumatrensis	sumatrensis	sumatrensis	—	—	sumatrensis	sumatrensis	

* Resident rose-rings

* Resident races only.

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been taken off the west coast of peninsular Thailand: *C. argentina* is also known from the Anamba and North Natuna Islands, and Robinson gives a doubtful visual record for Pulau Jarak, in the Malacca Strait. More significant are five birds certainly resident in the Rhio group which are represented there by subspecies different from those inhabiting the Malay Peninsula; these are,

Turnix suscitator [*suscitator* (Gmel.).]

Psittacula longicauda [*defontainci* Chas.]

Halcyon chloris [*cyanescens* (Oberh.).]

Eurylaimus javanicus [*harterti* van Oort]

Aplonis panayensis [*heterochlorus* (Oberh.).]

The second, third and last of these subspecies occur southwards in the Lingga group, and on other of the islands between Borneo and Sumatra. The range of one, *H. c. cyanescens* (Oberh.), also extends east and west to include Sumatra and Borneo. The remaining two forms on the list, *T. s. suscitator* (Gmel.) and *E. j. harterti* van Oort, occur in Sumatra, but are not known from the Lingga islands or from any of the islands eastward.

Clearly there is a minor line of separation along the Singapore Strait, though its influence is apparently slight. It is appreciably less marked than that of the transition zone through Patani and the most northerly Malay States, dividing northern and southern peninsular forms. The birds of the Lingga-Singkep islands provide a further six instances of species which are represented by races different from those inhabiting the Rhio or Singapore areas, and undoubted evidence of the occurrence of *Caprimulgus a. affinis* Horsf., a nightjar resident in Sumatra, Billiton and Java, but not known from the Malay Peninsula. The six "new" races which we encounter here are,

Turnix suscitator kuiperi Chas.

Sitta f. frontalis (Swains.)

Chloropsis cochinchinensis billitonis Chas.

Irena puella criniger Sharpe

Pycnonotus plumosus billitonis Chas.

Anthreptes singalensis sumatrana Kloss

Five of these are found on Billiton, and one on Banka, further south: only three also occur in Sumatra, and one in Borneo. The recorded avifauna of the Lingga-Singkep group thus remains essentially Malayan, but it includes as residents one species not known from that area, and nine birds subspecifically distinct

from the peninsular populations. It is also of interest to note that Lingga apparently has some areas of woodland with moderately dense undergrowth: the Timaliidae are fairly well represented in Hartert's list, which includes three species known from the mainland of Malaya but seemingly absent from Singapore Island.

An examination of Mr. de Bruyn's collection of Singkep birds, considered in conjunction with Chasen's paper on the birds of Billiton (*Treubia*, 16, (2), 1937: 205-238), shows a further minor division south of the Lingga group. Nine of the resident species recorded from Singkep or Lingga, and one of the Rhio birds, *Eurylaimus javanicus*, not known from the southern islands, are apparently represented on Billiton by races different from those occurring in our area, namely,

- Spilornis cheela* [*natunensis* Chas.]
- Pelargopsis capensis* [*cyanopteryx* (Oberh.)]
- Eurylaimus javanicus* [*billitonis* Kloss]
- Malacocincla malaccensis* [*saturata* (Rob. & Kloss).]
- Macronus gularis* [*ruficoma* (Oberh.)]
- Pycnonotus simplex* [*perplexus* Chas. & Kloss]
- Copsychus malabaricus* [*tricolor* (Vieill.)]
- Terpsiphone affinis* [*australis* Chas.]
- Aplonis panayensis* [*strigatus* (Horsf.)]
- Gracula religiosa* [*prasiocara* Oberh.]

while in a further three birds,

- Treron c. curvirostra* (Gmel.)
- Hypothymis azurea prophata* Oberh.
- Anaimos thoracicus* (Temm.)

the Billiton population possibly differs in a minor degree from the forms found on Singkep and northwards (*vide* Chasen, *loc. cit.*: 208, 223 & 230). Here the separation from the Singapore fauna is more strongly marked. The great majority of the birds inhabiting the Malay Peninsula cannot be distinguished from examples of the same species from the lowlands of the middle section of Sumatra, but differences occur in a few cases. Passage southward down the Rhio-Lingga Archipelago, and on to Billiton, in addition to producing several South China Sea island forms, brings the bird population still closer to that of southern Sumatra. An analysis of the local distribution of the different subspecies of the birds listed above is given in the table on page 353, *antea*.

To facilitate setting the notes have been printed together at the end of this list.

BIRDS KNOWN FROM THE RHIO-LINGGA ARCHIPELAGO

The birds known from one or more parts of the Rhio-Lingga Archipelago	Rhio-Lingga Archipelago, recorded from,			Also recorded from adjacent groups as follows			
	P. Sava	Lingga group	Rhio group	P. Billiton	Karimata Island	Tambelan Island	Singapore group
In the column below a bird which also occurs in Singapore and/or Malaya has its Malayan checklist number printed on the left, before its name. Where the Rhio-Lingga bird is replaced in the north by a different race or race of the same species the checklist number is enclosed in brackets. In the three birds not found in Singapore or Malaya this space is left blank.							
Scolopacidae							
117. <i>Numenius phaeopus variegatus</i> (Scop.)	—	+	+	+	—	—	+
118. <i>Numenius arquata orientalis</i> (Brehm.)	—	—	+	+	—	—	+
119. <i>Numenius madagascariensis</i> (Linn.) 9	—	—	+	+	—	—	+
122. <i>Tringa totanus curvirostris</i> (Oberh.)	—	—	+	+	—	—	+
127. <i>Xenus cinereus</i> (Gmel.)	—	+	+	+	—	+	+
128. <i>Actitis hypoleucos</i> (Linn.)	—	+	+	+	—	+	+
132. <i>Capella stenura</i> (Bp.) 10	—	+	+	+	—	+	+
139. <i>Fregata ruficollis</i> (Pal.) 11	—	—	+	+	—	—	+
Burhinidae							
<i>Orthorhamphus magnirostris</i> (Vieill.)	—	—	+	—	—	+	—
Glareolidae							
147. <i>Glareola maldivarum</i> (Forst.) 12	—	+	—	+	—	—	+
Laridae							
153. <i>Sterna s. sumatrana</i> (Raffles)	+	—	+	+	+	—	+
154. <i>Sterna a. anethetus</i> (Scop.) 13	—	—	—	—	—	—	—
155. <i>Sterna albifrons sinensis</i> (Gmel.)	—	+	—	—	—	—	—
156. <i>Sterna bergii cristatus</i> (Steph.) 14	—	+	+	+	—	—	+
Columbidae							
162. <i>Butorion capellei magnirostris</i> (Swains.)	—	+	—	—	—	—	—
163. <i>Treron c. curvirostris</i> (Gmel.) 15	—	+	+	+	—	—	+
164. <i>Treron f. fulvicollis</i> (Ward.)	—	+	+	+	—	—	+
165. <i>Treron a. olax</i> (Temm.)	—	+	+	+	—	—	+
166. <i>Treron vernans griseicapilla</i> (Schlegel)	—	+	+	+	—	—	+
168. <i>Ptilinopus jambu</i> (Gmel.)	—	+	+	+	—	—	+
169. <i>Ducula aenea polia</i> (Oberh.)	—	+	+	+	+	+	+
170. <i>Ducula bicolor</i> (Scop.)	—	+	+	+	+	+	+
171. <i>Columba argentea</i> (Bp.)	+	+	+	+	+	+	—
175. <i>Streptopelia chinensis tigrina</i> (Temm.)	—	+	+	+	—	+	+
177. <i>Chalcophaps i. indica</i> (Linn.)	—	—	+	+	—	+	+
178. <i>Caloenas n. nicobarica</i> (Linn.) 16	+	—	—	+	—	+	—
Psittacidae							
(179). <i>Psittacula longicauda defontainei</i> (Chas.) 17	—	+	+	+	+	—	(+)
180. <i>Psittinus c. cyanurus</i> (Forst.) 18	—	+	+	—	—	—	+
181. <i>Loriculus g. galgulus</i> (Linn.)	—	—	+	+	—	—	+
Cuculidae							
182. <i>Clamator coronatus</i> (Linn.)	—	+	—	—	—	—	+
185b. <i>Cuculus f. fagax</i> (Horsf.)	—	—	+	+	—	—	+
186. <i>Cuculus n. micropterus</i> (Gould)	—	+	—	+	—	—	+
<i>Cuculus canorus telephonus</i> (Holme) 19	—	+	—	—	—	—	—
189b. <i>Penthocyx sonneratii fasciolatus</i> (S. Mull.) 20	—	—	+	—	—	—	(+)
190a. <i>Coromantis merulinus threnodes</i> (Cab. & Heine)	—	+	+	—	—	—	+
193. <i>Chalcites x. ruficollis</i> (Horsf.)	—	+	—	—	—	—	+
196b. <i>Surniculus lugubris barussarum</i> (Oberh.)	—	+	—	—	—	—	+
197a. <i>Eudynamis s. scolopacea</i> (Linn.) 21	—	+	(+)	+	—	—	(+)
199. <i>Rhopodytes s. sumatrana</i> (Raff.)	—	+	+	+	—	—	+
206. <i>Centropus bengalensis javanensis</i> (Dum.)	—	+	+	+	—	—	+

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The birds known from one or more parts of the Rhio-Lingga Archipelago	Rhio-Lingga Archi- pelago, recorded from			Also recorded from adjacent groups as follows			
In the column below a bird which also occurs in Singapore and/or Malaya has its Malayan checklist number printed on the left, before its name. Where the Rhio-Lingga bird is replaced in the north by a different race or races of the same species the checklist number is enclosed in brackets. In the three birds not found in Singapore or Malaya this space is left blank.	P. Sava	Lingga group	Rhio group	P. Billiton	Karimata Island	Tambelan Island	Singapore group
Strigidae							
217. <i>Ketupa k. ketupa</i> (Horsf.)	—	—	+	—	—	—	—
219c. <i>Ninox scutulata malaccensis</i> (Lyton) 22	—	—	+	—	—	—	—
Podargidae							
224. <i>Batrachostomus stellatus</i> (Günth)	—	—	+	—	—	—	—
225. <i>Batrachostomus affinis</i> (Blyth)	—	—	+	—	—	—	—
Caprimulgidae							
228. <i>Caprimulgus indicus-jotaka</i> (Temm. and Schleg.)	—	—	—	—	—	—	—
<i>Caprimulgus a. affinis</i> (Horsf.) 23	—	—	?	—	—	—	—
229. <i>Caprimulgus nuchurus bimaculatus</i> (Peale)	—	—	+	—	—	—	—
Apodidae							
235. <i>Collocalia esculenta cyanoptila</i> (Oberh.) 24	—	—	—	—	—	—	—
237a. <i>Hirund-apus g. gigas</i> (Temm.)	—	—	+	—	—	—	—
239a. <i>Apus p. pacificus</i> (Lath.) 25	—	—	?	—	—	—	—
240. <i>Apus affinis subfasciatus</i> (Blyth)	—	—	+	—	—	—	—
241. <i>Cypselurus parvus infusatus</i> (Selat.)	—	—	—	+	—	+	—
Hemiprocidae							
242. <i>Hemiprocne longipennis barterii</i> Stres.	—	+	+	+	+	—	—
243. <i>Hemiprocne c. emula</i> (Temm.)	—	+	+	—	—	—	—
Trogonidae							
245. <i>Harpactes diardii sumatranus</i> Blas. 26	—	+	—	—	—	—	—
247. <i>Harpactes ducanensis</i> (Temm.)	—	—	+	+	—	—	—
Alcedinidae							
250. <i>Alcedo althia bengalensis</i> Gmel.	—	+	+	+	+	—	—
251. <i>Alcedo meninting verrucosus</i> De La Rue	—	—	+	+	—	—	—
254. <i>Ceyx r. rufidorsum</i> Strickland	—	—	+	+	—	—	—
256. <i>Pelargopsis capensis malaccensis</i> Sharpe 27	—	—	+	(+)	—	—	—
257. <i>Laerla p. pulchella</i> (Horsf.)	—	—	+	—	—	—	—
258b. <i>Halcyon coromanda minor</i> (Temm. and Schleg.)	—	—	+	+	—	—	—
259. <i>Halcyon emyranensis fusca</i> (Bodd.) 28	—	—	+	—	—	—	—
260. <i>Halcyon pileata</i> (Bodd.)	—	—	+	+	—	—	—
(261). <i>Halcyon chloris cyanescens</i> (Oberh.) 29	+	+	+	+	+	+	(+)
Meropidae							
264. <i>Merops superciliosus philippinus</i> Linn.	—	+	+	+	+	—	—
265. <i>Merops v. viridis</i> Linn.	—	—	+	+	+	—	—
Coraciidae							
268a. <i>Eurystomus a. orientalis</i> (Linn.) 30	—	+	+	+	—	—	—
Bucerotidae							
273. <i>Aceros n. undulatus</i> (Shaw)	—	+	—	—	—	—	—
277. <i>Anthracoceros cornutus concervus</i> (Temm.)	—	—	+	—	—	+	—

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BIRDS KNOWN FROM THE RHIO-LINGGA ARCHIPELAGO

The birds known from one or more parts of the Rhio-Lingga Archipelago	Rhio-Lingga Archipelago, recorded from			Also recorded from adjacent groups as follows		
	P. Sava	Lingga group	Rhio group	P. Billiton	Karimata Island	Tambelan Island
In the column below a bird which also occurs in Singapore and/or Malaya has its Malayan checklist number printed on the left, before its name. Where the Rhio-Lingga bird is replaced in the north by a different race or races of the same species the checklist number is enclosed in brackets. In the three birds not found in Singapore or Malaya this space is left blank.						
Picidae						
304. <i>Dinopium j. javanense</i> (Ljungh)	—	—	+	—	—	—
309. <i>Mulleripicus p. pulcherrimus</i> (Temm.)	—	—	+	—	—	—
310. <i>Dryocopus j. javensis</i> (Horsf.)	—	—	+	—	—	—
311. <i>Dendrocopos canicapillus auritus</i> (Eytou)	—	—	+	—	—	—
312. <i>Dendrocopos m. malaccensis</i> (Gmel.)	—	—	+	—	—	—
317b. <i>Chrysocolaptes lucidus chersonesus</i> Kloss 31	—	—	+	—	—	—
Eurylaimidae						
318a. <i>Calyptrornis v. viridis</i> Raffl.	—	—	—	—	—	—
322. <i>Eurylaimus o. ochromalus</i> Raffl.	—	—	—	—	—	—
(323.) <i>Eurylaimus javanicus hartei</i> van Oort 32	—	—	—	(+)	—	(+)
Pittidae						
328. <i>Pitta brachyura cyanoptera</i> Temm.	—	—	+	—	—	—
329. <i>Pitta megahyacha</i> Schleg.	—	—	+	—	—	—
Hirundinidae						
331. <i>Delichon urbica dasypus</i> Bp. 33	—	—	+	—	—	—
332. <i>Hirundo rustica gutturalis</i> Scop.	—	—	+	—	—	—
333. <i>Hirundo latidens abbotti</i> (Oberh.)	—	—	+	—	—	—
Campephagidae						
337. <i>Corocina striata sumatrensis</i> (S. Mull.)	—	—	+	—	—	—
339. <i>Hemipus kirtlandianus</i> (Temm.) 34	—	—	+	—	—	—
342. <i>Pericrocotus roseus divaricatus</i> (Raffl.)	—	—	+	—	—	—
345b. <i>Pericrocotus flammeus suluensis</i> (Raffl.)	—	—	+	—	—	—
Dicruridae						
350a. <i>Dicrurus parvifrons platyrus</i> (Vieill.)	—	—	+	—	—	—
Oriolidae						
351b. <i>Oriolus chinensis maculatus</i> Vieill. 35	—	—	—	—	—	—
Corvidae						
360. <i>Corvus corax corupator</i> Richm. 36	—	—	+	—	—	—
Sittidae						
(364.) <i>Sitta f. frontalis</i> (Swains.) 37	—	—	—	—	—	—
Timaliidae						
370. <i>Malaccocitta m. malaccensis</i> (Hartl.) 38	—	—	+	(+)	—	—
371. <i>Malaccocitta r. rostratum</i> (Blyth)	—	—	+	+	—	—
376. <i>Malacopteron c. cinereum</i> Eytou	—	—	+	—	—	—
377. <i>Malacopteron m. maculatum</i> (Moore)	—	—	+	—	—	—
379. <i>Malacopteron a. albogularis</i> (Blyth)	—	—	+	—	—	—
388. <i>Macronus g. ularis</i> (Horsf.)	—	—	+	(+)	—	—
390a. <i>Stachyris nigriceps darisani</i> Sharpe	—	—	—	—	—	—
391. <i>Stachyris p. poliocephala</i> (Temm.)	—	—	—	—	—	—
394. <i>Stachyris uncinata portorialis</i> (Blyth)	—	—	+	—	—	—

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The birds known from one or more parts of the Rhio-Lingga Archipelago	Rhio-Lingga Archi- pelago, recorded from,			Also recorded from adjacent groups as follows			
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Aegithinidae							
413. <i>Aegithinia v. viridissima</i> (Rp.)	—	+	+	+	—	—	+
414b. <i>Aegithinia tipha singapurensis</i> Chas. & Kloss	—	+	—	—	—	—	+
417. <i>Chloropsis vauvérii zosterops</i> Vig.	—	—	+	—	—	—	+
(418). <i>Chloropsis cochinchinensis billitonis</i> Chas. 39	—	+	—	+	—	—	(+)
(420). <i>Trenca puella criniger</i> Sharpe 40	—	+	—	+	—	—	(+)
Pycnonotidae							
431. <i>Pycnonotus goiavier personatus</i> (Hume)	—	+	+	+	—	—	+
433a. <i>Pycnonotus p. plumosus</i> Blyth	—	—	+	—	—	—	+
(433). <i>P. p. billitonis</i> Chasen 41	—	—	+	+	—	—	(+)
435. <i>Pycnonotus s. simplex</i> Less. 42	—	—	—	(+)	—	—	(+)
436. <i>Pycnonotus e. erythrocephalus</i> (Hume)	—	—	—	+	—	—	+
439. <i>Crinifer p. phaeocephalus</i> (Hartl.)	—	—	—	—	—	—	+
441. <i>Tricholestes c. criniger</i> (Blyth)	—	—	—	—	—	—	+
442. <i>Microcelia charlottae erythr.</i> (Oberh.)	—	—	—	—	—	—	+
444. <i>Microcelia viridescens malaecensis</i> (Blyth)	—	+	—	—	—	—	—
Turdidae							
450. <i>Copychus saularis musicus</i> (Raffl.)	—	+	+	+	—	—	+
451. <i>Copychus malabaricus malloperemus</i> (Oberh.) 43	—	+	+	(+)	—	—	+
458. <i>Turdus n. obscurus</i> Gmel. 44	—	+	—	+	—	—	+
Sylviidae							
466. <i>Cisticola juncidis malaya</i> Lynes	—	+	—	+	—	—	+
474. <i>Phylloscopus b. borealis</i> (Blas.)	—	—	—	—	—	—	+
481a. <i>Orthotomus a. atrogularis</i> Temm.	—	+	+	+	—	—	+
483. <i>Orthotomus sericeus hesperius</i> Oberh. 45	—	+	+	+	—	—	+
484. <i>Orthotomus sepium ruficeps</i> (Less.) 46	—	—	+	+	—	—	—
Muscicapidae							
487. <i>Rhipidura javanica longicauda</i> Wall	—	+	+	+	—	—	+
488. <i>Culicicapa ceylonensis calochrysea</i> Oberh.	—	+	—	—	—	—	+
500. <i>Muscicapa r. rufogaster</i> Raffl.	—	+	+	—	+	—	+
511. <i>Rhinomyias u. umbratilis</i> (Strick.) 47	—	+	—	+	+	—	—
512. <i>Drymophila p. pyroptera</i> (Temm.)	—	+	—	—	—	—	+
514a. <i>Hypothymis azurea prophata</i> Oberh. 48	—	+	+	+	(+)	—	+
515a. <i>Terpsiphone paradisi affinis</i> (Blyth) 49	—	+	+	(+)	—	—	+
515c. <i>T. p. incert</i> (Gould)	—	—	+	—	—	—	+
517. <i>Pachycephala cinerea butaloides</i> Stres. 50	—	—	+	+	+	—	+
Motacillidae							
519a. <i>Motacilla flava tairana</i> (Swln.)	—	+	—	(+)	—	—	(+)
522. <i>Anthus novaezeelandiae malayensis</i> Eyton 51	—	+	+	—	—	—	+
Laniidae							
525. <i>Lanius tigrinus</i> Drap.	—	+	+	—	—	—	+

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Sturnidae							
(526). <i>Aplonis panayensis heterochlorus</i> (Oberh.)	—	+	+	(+)	{+}	{+}	(+)
531. <i>A. p. richmondi</i> (Oberh.) 52	—	+	+	(+)	{+}	{+}	(+)
533. <i>Gracula r. religiosa</i> Linn. 53	—	+	+	—	—	—	—
Nectariniidae							
535. <i>Anthreptes m. malaccensis</i> (Scop.)	—	+	+	+	+	—	+
(538). <i>Anthreptes singalensis sumatranus</i> Kloss 54	—	+	+	+	+	—	+
539. <i>Leptocoma b. brasiliensis</i> (Gmel.) 55	—	+	+	+	+	—	+
540. <i>Leptocoma c. calcostetha</i> (Jard.) 56	—	+	+	+	+	—	+
541a. <i>Leptocoma jugularis microleuca</i> (Oberh.) 57	—	+	+	+	+	—	+
543. <i>Aethopyga s. zeyheri</i> (Raffl.)	—	+	+	+	+	—	+
545. <i>Arachnothera l. longirostra</i> (Lath.)	—	+	+	+	+	—	+
549. <i>Arachnothera c. chrysogaster</i> (Temm.)	—	—	+	—	—	—	—
Dicaeidae							
552. <i>Dicaeum cruciatum ignitum</i> (Berg.)	—	—	+	—	+	—	+
554. <i>Dicaeum l. trigonostictum</i> (Scop.)	—	+	+	—	+	—	+
557. <i>Anaimis percinus ignicollis</i> (Blyth)	—	+	+	—	—	—	—
558. <i>Anaimis thoracicus</i> (Temm.)	—	+	+	—	—	—	—
561. <i>Piprisoma agile sordidum</i> Rob. & Kloss	—	—	+	—	—	—	—
Zosteropidae							
562a. <i>Zosterops palpebrosa williamsi</i> Rob. & Kloss 58	—	—	+	—	—	—	+
Picoidae							
565. <i>Parus montanus malaccensis</i> Dub. 59	—	+	+	—	—	—	+
566. <i>Parus o. argyrea</i> (Linn.) 60	—	+	+	—	—	—	+
566. <i>Munia atricapilla siacensis</i> Blyth	—	+	+	—	—	—	+
Number of forms listed here (max. 181)	10	124	136	110	30	20	147
Total number of forms recorded from the island (S.)	—	—	—	(167)	(32)	(22)	(200)
Number of species listed here which are certainly or probably resident	10	92	102	77	25	17	104
Total number of species certainly or probably resident on the island (S.)	—	—	—	(120)	(27)	(18)	(161)
Number of species listed here which are probably passage migrants or non-breeding visitors	—	32	34	32	5	3	43
Total number of apparently non-breeding species so far recorded from the island (S.)	—	—	—	(38)	(5)	(4)	(120)

The Rhio-Lingga list as given here contains 180 species. Three of these are represented by two resident races within the group itself, but as these subspecies replace each other, and are thus mutually exclusive, they are not shown as separate entities in the totals. On the other hand one bird, *Terpsiphone paradisi*, is clearly represented by a resident race, *T. p. affinis* (Blyth), and an immigrant race, *T. p. incei* (Gould): these are treated separately, making a total of 181 recorded forms. There is no doubt that in several other cases the resident populations are augmented in the winter months by birds from further north, but in these instances either there is no subspecific difference between members of the two populations, or the occurrence of the immigrant forms has not so far been recorded.

Notes

1. Full lists of the birds recorded from the four islands included in the table for comparative purposes are given in the following papers,
 Billiton & adjacent islets—Chasen, *Treubia*, 1937.
 Karimata Islands—Chasen & Boden Kloss, *Treubia*, 1933.
 Tambelan Islands—Oberholser, *Proc. U.S. Nat. Mus.*, 1919.
 Singapore Island—Gibson-Hill, *Bull. Raf. Mus.*, No. 21, 1950: addenda, *op. cit.*, No. 23, 1950, and this journal, pp. 321-326, *antea*: adjacent islets, *op. cit.*, in preparation.

It will be noted that only 110 of the 167 species accepted for Billiton by Chasen have been recorded for the Rhio-Lingga group of islands, and only 147 out of the 290 birds accepted for Singapore Island by the present writer; but 30 of the 32 Karimata species (all except *Pycnonotus brunneus* Moore and *Zosterops chloris* Bp.) and 20 of the 22 Tambelan Islands species (namely all except *Anous stolidus* (Linn.) and *Motacilla cinerea* Tunst.) also occur on the Rhio-Lingga list.

2. 11. *Fregata a. ariel* (G. R. Gray)

Frigate-birds, probably of this species, were observed between Singkep and Lingga, on the Singkep side of the strait, in January 1950 (C.A.G.-H.), and in somewhere near this position in June 1940. We also have visual records of a *Fregata* sp. from the Lingga-Singkep area from F. G. H. Allen, and de Bruyn mentions birds seen off Singkep on several occasions which must certainly have been members of this genus. The 1950 birds, all immature with light rufous-white heads, were seen about 5-30 p.m., alt. about 150 feet, on an afternoon of low clouds after heavy rain. There are a number of visual records of *F. ariel* for the Rhio area; Kelham (1882: 202) describes an immature bird shot on 23 September, 1880 on the shore of Pulau Nongsa, a small island off the north coast of Batam, which he attributes to this species.

3. 52. *Accipiter virgatus gularis* (T. & S.)

This bird is common throughout the western lowlands of the Malay Peninsula and along the line of the small islands in the Malacca Strait from September to December and again in March and April: it also occurs widely, though in slightly smaller numbers, on the mainland at least during the two intervening months. It must be reaching all the islands listed in the table above as a passage migrant, even if it is not wintering there.

4. 61. *Icthyophaga i. ichthyæus* (Horsf.)

The Pulau Saya record is visual only, "One fish eagle, without much doubt this species, was seen on Pulo Taya (= P. Saya) by Doctor Abbott" (Oberholser, 1919: 268). The record is entered here, but without any indication of exactly what Dr. Abbott saw it does seem open to doubt. The bird might possibly have been an immature example of *Haliaeetus leucogaster*, which is much commoner in the Rhio-Lingga area. Kloss (1904: 58-59) lists the remaining seven land and shore birds quoted by Oberholser for P. Saya, but makes no mention of a bird of prey. The Rhio group record for *ichthyæus* is formal and based on a specimen taken by Robinson and Seimund on Pulau Batam in 1908 (Chasen, 1931: 120), R.M. coll.

5. 71. *Spilornis cheela bassus* (Forst.)

Chasen (1937: 214) ascribes five birds sent to him from Billiton to the North Natuna race, *S. c. natunensis* Chasen. The Singkep birds (three skins examined) cannot be separated from examples of *bassus* from the Malay States.

6. 72b. *Pandion haliaetus cristatus* (Vieill.)

The osprey appears as *Pandion leucocephalus* Gould in Dammerman (1926: 31), where it is shown, but with a query, for Batam and Durian

BIRDS KNOWN FROM THE RHIO-LINGGA ARCHIPELAGO

Islands. There is no reference to it in Siebers's list of the birds from Durian—it is not even among the several species heard on the far side of the island. Presumably the Batam reference is derived from Schot (1882). Fortunately there is now a reliable record for the Rhio group in the form of a specimen of the southern race, *P. h. cristatus*, taken on Pulau Bèlakang Padang in June 1950. The northern form, *P. h. haliatus* (Linn.) probably also reaches the area occasionally, but there are as yet no certain records of its occurrence there.

7. (91). *Turnix suscitator* (Gmelin)

Singapore birds are *T. s. atrogularis* (Eyton). With Chasen (1935: 9) I ascribe Rhio birds to the typical race, *T. s. suscitator*, type locality Java. The single skin submitted from Singkep is clearly an example of *T. s. kupperi* Chasen (*Treubia*, 1937: 208), type locality Billiton. Dammerman (1926: 321) lists the Rhio birds (Batam & Bulang) as *Turnix pugnax* (Temm.).

8. 111a. *Charadrius dubius curonicus* (Gmelin)

Dammerman (1926: 321), following Robinson (1916: 70), lists (*Charadrius*) *alexandrinus* (Linn.) for Mapor in the Rhio group—a "single male of the tropical race of the Kentish Plover in breeding plumage", taken at the end of May or the beginning of June, 1915—but it seems more likely that the bird was *C. dubius curonicus*, which has since been taken on P. Bèlakang Padang, off Batam, and is a plentiful winter visitor round Singapore Island, or even *C. peronii*, which has been recorded breeding on P. Bintan. There is no Rhio-taken skin of *C. alexandrinus* in the R.M. collection, and this bird is relatively scarce in the Malayan area; it has been recorded formally only from the Langkawi Islands, the Selangor coast (3 ex.), Singapore Island (2 ex.) and Pulau Bidong Laut (Trengganu Archipelago; Bonhote, ex Skeat Exp. coll.).

9. 119. *Numenius madagascariensis* (Linn.)

See Chasen & Kloss (1928: 68); the unique Rhio record is of a bird taken on Pulau Moro in the Durian Strait. The evidence for Singapore Island (Gibson-Hill, 1950: 146) is still only visual, five sight records of an example seen by F. G. H. Allen at the east end of Singapore Island in October and November 1948.

10. 132. *Capella stenura* (Bp.)

Dammerman (1926: 321) gives only a single record for the Pintail Snipe, a doubtful one for Batam. Presumably it is based on information given in Schot (1882), but this species must be passing through the Rhio area in considerable numbers on migration: it is certainly plentiful in suitable localities in Java during the winter months.

11. 139. *Erolia ruficollis* (Pall.)

The commonest of the stints in parts of the Malayan region, but less numerous on Singapore Island than *Erolia subminuta* (Middend.). The latter occurs freely on both muddy and sandy shores, and must, in actual fact, be reaching the Rhio area on migration, together with *Tringa glareola* Linn. at least, though in both cases we still lack formal records of their presence there.

12. 147. *Glareola maldivarum* (Forst.)

The absence of Rhio records is again surprising. The pratincole must undoubtedly pass through or over the group in considerable numbers in spring and autumn.

13. 154. *Sterna a. anæthetus* (Scop.)

There is only one reference for this bird for our area, an adult female taken by Dr. Abbott off Pulau Saya on 26 July, 1899. It may be breeding in the neighbourhood, but there is at present no evidence that it does so. According to Dr. Abbott (in Oberholser, 1919: 135-6) it probably nests in

some numbers, in company with *Anous stolidus*, on two rocky stacks known as Pulau Mandariki, situated about 12 miles west-northwest of the north-western end of the Tambelan group. The two birds also breed on Barren Island (lat. $1^{\circ} 32' N.$, long $106^{\circ} 26' E.$), north-west of the Rocky Islets, and on Witte Rots (White Rocks), an islet about a mile south-westward of Kébatoe (Tjina Pebatoen, the seated Chinaman), 31 miles south of Billiton. From the evidence available it seems that eggs are normally laid in the first two weeks of June in this area, and it would seem likely that any colony in the Lingga-Singkep area would be active in June and July.

14. 156. *Sterna bergii cristatus* (Steph.)

Also appears as *Sterna bergii polecanoides* King in Dammernan (1926: 321), a double entry. Robinson (1916: 70) reports it common off the sand spits and reefs on the western side of Pulau Mapor at the end of May and the beginning of June (1915), and F. J. Kuiper took a male on Langkocan Island, off the north-west point of Billiton, at the end of July, but there is still no evidence of nesting in the region between the Gulf of Siam and the Java Sea. De Bruyn's Singkep birds were taken on 1 September and 29 November.

15. 163. *Treron c. curvirostra* (Gmel.)

Reported from Pulau Mapor (*Treron nipalensis* Hodgson, in Robinson, 1916: 70) and Pulau Bintan (Chasen, 1931: 115 & 120) in the Rhio group: the Bintan and Singkep birds are large, but seem inseparable from representative examples from the Malay States. See Chasen (1937: 209) for a note on the Billiton birds, still retained as typical *T. c. curvirostra*.

16. 178. *Caloenas n. nicobarica* (Linn.)

In our area recorded only from Pulau Saya and the adjacent islet(s) of Niamok. According to the Eastern Archipelago Pilot (4, 2nd ed., 1939: 151) Niamok (Njamok) is a steep granite rock lying about three-quarters of a mile north-eastward of Saya, with a similar rock about midway between them. Abbott (quoted in Oberholser, 1919: 267) says the larger of the two islets is some 200 or 300 yards long, and about 10 acres in extent: neither is over 150 feet high: they are said to support a thin growth of jungle. Abbott reported seeing a few Nicobar Pigeons on Saya, but many more on the Niamok Islets. He is supported by Kloss (1903: 59), who accompanied him, and it would seem that the description of the islets given in the Pilot must be incorrect. At the time of Abbott's visit (July, 1899) Saya and the Niamok Islets were being visited by fishermen from Lingga and Singkep, 25-30 miles away, for the purpose of snaring the pigeons. In January 1950 I was told on Singkep that *nicobarica* was no longer present there. This may mean that it has been exterminated, or merely that it had become so scarce that the numbers obtainable did not justify the journey and search for them.

17. (179). *Psittacula longicauda defontainei* (Chas.)

Birds from the Malay Peninsula and Singapore Island belong to the typical race. Specimens from Bintan (Chasen, 1931: 116), Billiton (Chasen, 1937: 216) and the two examples examined from Singkep agree in being slightly larger and are referable to *defontainei* (type locality, Bunguran Island, North Natuna group), with which I am also associating the Karimata birds, though I have not examined specimens from the islands, on the strength of the general statement in Chasen, 1937.

18. 180. *Psittinus c. cyanurus* (Forst.)

Dammernan (1926: 319) gives only a doubtful record for Batam (*Psittinus incertus* Shaw), but its presence in the Rhio group is confirmed by Chasen (1931: 116 & 120), who lists specimens from Bintan and Kundur, some of which are still in the R.M. collection.

19. *Cuculus canorus telephonus* (Heine)

The *Cuculus canorus canoroides* S. Müll. of Hartert (1900) and Dammerman's list probably refers to this bird: see Chasen (1935: 124).

20. 189b. *Penthoceryx sonneratii fasciolatus* (S. Müll.)

Recorded by a single specimen taken on Pulau Bintan, which Chasen (1931: 117) refers to this race, "the dark Sumatran form which is also found in Singapore Island." I have never handled a Singapore specimen of *sonneratii*. The Raffles Museum collection includes an example from Pulau Ubin, in the Johore Strait, which Chasen ascribes to *fasciolatus*, but it seems a little too pale to me: the other material which I have examined from Ubin and other parts of southern Malaya seems clearly to be *P. s. malayanus* Chas. & Kloss, and for the present I include Singapore Island in the range of this later race.

21. 197a. *Eudynamis s. scolopacea* (Linn.)

Dammerman (1926: 319) lists *Eudynamis honorata* Linn. as occurring on Durian, in the Rhio group, but an examination of his source (*tom. cit.*, *antea*: 306) shows that no specimen was taken, and it may even be that the bird was only heard: Siebers says "The only cuckoo on the island; the cry of this species was often noticed in the mangrove wood". Chasen (1937: 220) ascribes a Billiton bird to *E. s. scolopacea* (Linn.), though earlier (1935: 128) he had placed all Malaysian records except a few examples from the Malay Peninsula and two birds from the Natuna Islands under *E. s. malayana*. I put the female sent up from Singkep by Mr. de Bruyn as typical *scolopacea*, and accordingly have used that name as the basic one here, but this bird is badly in need of revision.

22. 219c. *Ninox scutulata malaccensis* (Eyton).

These records all suggest resident birds, but there is no doubt an influx of winter visitors or passage migrants, which presumably include a few examples of the typical race. Dammerman's record for Durian is based on Siebers's statement that "nearly every evening and during the night the note of an owl, sounding like 'oo-hoop', was heard", but fortunately Robinson and Seimund took specimens on Batam and Karimon in 1908.

23. *Caprimulgus a. affinis* (Horsf.)

Dammerman (1926: 319) includes the Rhio group in the range of this bird on the strength of Siebers's statement (*tom. cit.*, *antea*: 307) "*Caprimulgus affinis* Horsf. On the 9th November while aboard the steamer this bird was heard on the shore (Durian). Also in the evening a *Caprimulgus* was observed a few times near our tent." Apparently no specimen was ever taken, and the record seems very tenuous. I have, however, let it stand with a query (not a positive as Dammerman does), and included it in the totals, in the light of the bird from Singkep sent up by de Bruyn, but this species may not occur in the northern part of the group. Chasen (1931: 219) records four examples (♂ 2, ♀ 2) from Billiton.

24. 235. *Collocalia esculenta cyanoptila* (Oberh.)

Appears as *Collocalia linchi* Horsf. & Moore in Dammerman's list: the latter also notes a *Collocalia* sp. from Batam and Durian (the latter another of Siebers's vague sight records), which may be the same bird, though it seems highly probable that some of the edible-nest swiftlets are present in the group. Chasen (1931: 219) reports examples of *C. v. vestita* (Less.) and *C. francica* subsp. from Billiton. While on Singkep I was told that edible nests were collected on Lingga, and in Singapore it is believed that there are small colonies on islets west of Batam and possibly on Karimon.

25. 239a. *Apus p. pacificus* (Lath.)

The only record for the Rhio group is another of Siebers's visual notes from Durian, taken without question by Dammerman, and rather more guardedly by Chasen (1935: 118). Nevertheless *A. pacificus* must be reaching and passing over the Rhio islands as a migrant, and presumably the typical race, the only form so far recorded from further south and with certainty from Singapore Island.

26. 245. *Harpactes diardii sumatranus* (Blas.)

Not the Borneo-Banka form (the typical race).

27. 256. *Pelargopsis capensis malaccensis* (Sharpe)

Dammerman (1926: 319) lists *Rhamphalcyon capensis hydrophila* Oberh. but this form is inseparable from *P. c. malaccensis*, to which Chasen (1931: 116 & 120) ascribes birds from Bintan, Kundur and Batam. Chasen (1937: 217) attributes three examples from Billiton to the Sumatran form, *P. c. cyanopteryx* Oberh., but this race is weak. The single example available to me from Singkep is in no way distinguishable from specimens from Selangor and Johore in the R.M. collection, and I have therefore used *malaccensis* for it and the Lingga records: the Lingga record, it may be remarked is not included on Hartert's original list (1900: 549-550), which gives only 39 different forms; it may have been added on Kloss's authority (he visited Lingga with Abbott, see Kloss 1904: 54-58) when he revised Dammerman's list for him.

28. 259. *Halcyon smyrnensis fusca* (Bodd.)

Until recently Singapore Island represented the southern limit of the known range of this species, nor was it known from Sumatra. Early in 1949 Baron van Lynden found it fairly common in the neighbourhood of Tebing Tinggi, Deli, north-east Sumatra (van Bemmelen & van Lynden, *Ardea*, 36, (4), 1949). Deli is a well-explored district, and *Halcyon smyrnensis* a most conspicuous bird in both plumage and habits. It seems inconceivable that it could have escaped detection for long, and this must represent a recent extension of its range. I feel that the same explanation also applies to the Rhio-Lingga records quoted here. None of the earlier collectors noted its occurrence in the Rhio group, and the first intimation of its presence there was a bird taken on P. Belakang Padang, north of Batam early in 1950. The Singkep skin extends its known range south of the equator. The spread south and west from the Malay Peninsula must almost certainly be a natural one: *smyrnensis* is not a "cage-bird", and its early salutation of the coming day can be very trying.

29. (261). *Halcyon chloris cyanescens* (Oberh.)

The peninsular race, *H. c. humii* Sharpe, does not apparently extend south of Singapore and its adjacent islands. Birds from Singkep, Saya and Billiton and the Rhio Islands are clearly *cyanescens*.

30. 268a. *Eurystomus o. orientalis* (Linn.)

This is the resident form. No doubt *E. o. abundus* Ripley also occurs in the area as a winter visitor, but all the specimens that I have seen have been examples of the typical race. Siebers ascribes a bird seen on Durian to *Eurystomus calonyx* Hodgs. (= *abundus* Ripley), on the grounds that "as this bird was observed in November only, it was most probably a migrant, in which case they belong to the subspecies *calonyx*." It is difficult to believe his earlier statement that the Koel was the only cuckoo on the island at the time of his visits. *E. o. abundus* appears to be the more numerous of the two forms in the migratory stream, but examples of the typical race are certainly also present, and on an island like Durian a winter bird need not have come from far in the north.

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31. 317b. *Chrysocolaptes lucidus chersonesus* (Kloss)

Appears as *C. guttaeristatus* Tick. in Dammerman's list, two specimens taken on Durian, June and November 1923. Chasen (1931: 117) records it from Bintan, three examples, May-June 1930.

32. 323. *Eurylaimus javanicus harterti* (van Oort)

Chasen (1935: 155) ascribes the Rhio birds, two specimens from Bintan, taken May-June 1930, to the Sumatran race *harterti*, type locality Deli, and accepts Kloss's *E. j. billitonis*, confined to Billiton, for the Billiton birds. The latter seems to be a weak race which might well be dropped. Unfortunately this species does not appear to be present on Singkep or Lingga. Birds from Singapore and further north are *E. j. pallidus* Chas.

33. 331. *Delichon urbica dasypus* (Bp.)

This is a very weak record, accepted positively by Dammerman (1926: 321), and repeated with obvious mistrust by Chasen (1935: 160). The source is Siebers again, for Durian, "*Chelidon dasypus* Bp. On the 16th November a few specimens of a migratory swallow were observed above the valley, which were thought to be this species".

34. 339. *Hemipus hirundinaceus* (Temm.)

Appears as *Hemipus obscurus* Horsf. in Dammerman's list, under Laniidae, quoting Hartert (1900). The Rhio record is a female taken on Bintan in May-June 1930 (Chasen, 1931: 119).

35. 351b. *Oriolus chinensis maculatus* (Vieill.)

This bird, which is now a well-established resident and plentiful on Singapore Island and in the southern states, appears to have spread to the area of the Malay Peninsula in the second or third decade of the present century, or to have been introduced here. It is interesting to find it on Singkep. Perhaps it now occurs among the Rhio Islands.

36. 360. *Corvus enca compiler* (Richm.)

This is a slightly surprising record, but it is based on a skin (♂) taken on Pulau Galang on 1 January, 1925 (Chasen, 1925: 97), which is still in the Raffles Museum collection. The crows on Singapore Island are the thickbilled *C. m. macrorhynchus* Wagl. and the introduced *C. splendens protegatus* Madar.

37. 364. *Sitta f. frontalis* (Swains.)

The Lingga birds are ascribed to the typical race following Chasen (1935: 262): I have not examined any examples from the area. Hartert (1900: 549) and Dammerman (1926: 320) list them binomially. The Malay Peninsula race is *S. f. saturator* Hart., which also occurs in north Sumatra but not on Singapore Island.

38. 370. *Malacocincla m. malaccensis* (Hartl.)

Chasen (1937: 227) ascribes the Billiton birds to *M. m. saturata* Rob. & Kloss, from west Borneo (type locality, Raram, Sarawak). Rhio birds are certainly the duller, typical race, to which I have ascribed the Lingga examples, following Chasen (1935: 216). Unfortunately this species has not been taken on Singkep.

39. (418). *Chloropsis cochinchinensis billitonis* (Chas.)

Chasen (1935: 190) includes the Rhio and Lingga Archipelagos, Banka and Billiton in the range of *C. c. icterocephala* Less. In 1937 (*Treubia*, 16, (2): 225) he separated the Billiton birds as *C. c. billitonis* Chas., "male like *C. cochinchinensis icterocephala* Less., of Sumatra and the Malay Peninsula, but the golden wash on the nape less extensive and intense, and the posterior part of the crown olivaceous, not yellow or golden. Adult

female rather less golden on the nape than the female of *icterocephala*." I can find no record of the occurrence of *Chloropsis cochinchinensis* among the Rhio islands, though it may well be present there. The Lingga record is one of Everett's skins, listed by Hartert (1900: 549), and not re-examined recently. The two skins available to me from Singkep (δ 1, ϕ 1) appear to be *billitonis*, and I have therefore for the present list ascribed the Lingga reference to the same form. The Rhio entry is withdrawn, pending formal confirmation: the race, if *Chloropsis cochinchinensis* is represented in the group, is possibly *icterocephala*, which certainly occurs south to Singapore and in Sumatra (type locality, Palembang).

40. (420). *Irena puella criniger* (Sharpe)

Irena puella is not known from the Rhio group, and has not yet been recorded from Lingga, though it probably occurs there. The Singkep birds appear to intermediate, but nearer to *I. p. criniger* of Borneo, Sumatra and Billiton than to the Malay States and Singapore race, *I. p. malayensis* Horsf. & Moore.

41. (433). *Pycnonotus plumosus billitonis* (Chas.)

Birds from the Rhio Islands are certainly assignable to the typical race, *P. p. plumosus* Blyth (type locality, Singapore), which also occurs in east Sumatra, Banka, Java and the Bawean Islands (Chasen, 1935: 200). Billiton birds have been separated as *P. p. billitonis* Chasen (*Ornith. Monatsber.*, 1935: 148. See also *Treubia*, 16, (2), 1937: 226). The example available to me from Singkep seems to be nearer to the Billiton race than to typical *plumosus*, and is listed accordingly. No material is known from Lingga, though this species must almost certainly be present on the island. It is widespread and common in the Rhio group, reported from Bintan, Bulan, Mapor and Durian, and no doubt occurring on all the larger islands.

42. 435. *Pycnonotus s. simplex* (Less.)

Chasen (1935: 201) includes the Rhio and Lingga Archipelagos in the range of this bird, but it has never been reported from Lingga and so far as I am aware de Bruyn's specimens are the first examples recorded from Singkep. Billiton birds are ascribed by Chasen to the Borneo race, *perplexus* Chas. & Kloss, which is said to differ from the typical race only in having red instead of white irides in the adult. Both the Singkep birds examined had white irides.

43. 451. *Copsychus malabaricus malloperenus* (Oberh.)

Singkep (transcribed rather unkindly as Sing kep) is the type locality of Oberholser's *K. m. malloperena* (Smiths. Misc. Coll., 76, (6), 1923: 5), range Rhio-Lingga Archipelago, Singapore Island and the Malay Peninsula. Chasen (1937: 228) ascribes birds from Billiton to *K. m. tricolor* (Vieill.), type locality West Java (Rob. & Kloss, *Journ. Nat. Hist. Soc. Siam*, 1924: 314), range West Java, Karimata Islands and Sumatra. As Chasen has pointed out (1935: 237), *malloperena* is not a well-defined race, but it serves for birds of the intermediate area between *tricolor* of Java and Sumatra, and *interposita* of northern Peninsular Thailand and northwards. Unfortunately I have not had an opportunity of examining material from Billiton, and have only one skin from Singkep. Accordingly the present list follows Chasen (1937), and shows the Billiton birds as subspecifically distinct, though there is probably no sharp, marked difference between the forms of *C. malabaricus* on Billiton and Singkep.

44. 458. *Turdus o. obscurus* (Gmel.)

This species, like *Phylloscopus borealis* (Blas.) and *Motacilla flava* Linn. below, is one of a number of migrants which must, in actual fact, be reaching all the suitable islands in the Rhio-Lingga area, and not only the one or two from which they are at present recorded.

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45. 483. *Orthotomus sericeus hesperius* (Oberh.)

Appears as *O. ruficeps* Lesson in Dammerman (1926: 320) and other early lists: for the change of name, see Oberholser, *Bull. U.S. Nat. Mus.*, 139 (1932: 87).

46. 484. *Orthotomus sepium ruficeps* (Less.)

Appears as *O. cineraceus* Blyth in Dammerman, etc.

47. 511. *Rhinomyias u. umbratilis* (Strick.)

Appears as *R. pectoralis* Salvadori in Dammerman (1926: 320) and other early lists.

48. 514a. *Hypothymis azurea prophata* (Oberh.)

The Karimata Islands form has been isolated as *H. a. karimatensis* Chas. & Kloss (see *Bull. Raff. Mus.*, 7, 1932: 8). Chasen (1937: 223) notes "that the Billiton bird is verging towards *H. a. karimatensis* (sic)" and it would be interesting to examine more material from Billiton." Singkep birds (♂ 1, ♀ 2, examined) appear on a very short series to be definitely *prophata*; there is no trace of blue in the tails of the two females, and the male has a well-marked black gorget.

49. 515a. *Terpsiphone paradisi affinis* (Blyth)

Appears as *T. affinis* Hay in Dammerman's list. This is the resident race of the Paradise Flycatcher, type locality "Malacca". Chasen (1937: 223) places the Billiton birds as *T. p. australis* Chas., type locality Lampong (south Sumatra), to which he gives the range South Sumatra, Billiton, West Java and probably the extreme south of Borneo. The Singkep birds, as recorded here, are clearly *affinis*, range Rhio and Lingga Archipelagos, mid-Sumatra and the southern Malay States.

50. 517 *Pachycephala cinerea butaloides* (Stres.)

Appears as *Muscitrea grisola* Blyth in Dammerman (1926: 320) and other early lists. It is surprising that this bird has not been recorded from Singkep and Lingga: it is common in the mangrove and casuarina zones along the whole coast of the Malay States and on nearly all the larger islands, including Singapore. I have not been able to examine specimens from the Karimata Islands; Chasen (1935: 260) inadvertently attributes birds from them to both *P. c. butaloides* and *P. c. secedens* Stres., type locality South Natuna Islands.

51. 522. *Anthus novaeseelandiae malayensis* (Eyton)

Dammerman (1926: 321) also lists *Anthus richardi* Vieill., but there is no authentic record for this form from the Malaysian sub-region, though it is known from south-west Siam.

52. 526. *Aplonis panayensis* (Scop.) subsp.

Dammerman (1926: 321) lists *Calornis chalybea* Horsf. as occurring in the Malay Peninsula, Sumatra and on Batam, Bulan, Mapor, Durian and Saya in the Rhio-Lingga group. He also gives *C. c. richmondi* Oberh. for Pulau Saya: both cannot be present on the latter island. I have not been able to examine specimens from P. Saya, but Chasen (1935: 298) accepts *A. p. richmondi* and he is followed here. *C. chalybea* Horsf. is a synonym of *A. panayensis strigatus* (Horsf.), which occurs in the Malay Peninsula (including Singapore), Sumatra, Java and Borneo, and on Billiton and Banka (Chasen, 1937: 232). Birds from the Rhio group (Bintan, Bulan and Batam) and from Singkep seem nearer to *A. p. heterochloris* (Oberh.) of the Anamba Islands. This list follows Chasen & Kloss (1933: 158) and Chasen (1935: 298) in ascribing birds from the Karimata and Tambelan Islands to the same race.

53. 533 *Gracula r. religiosa* (Linn.)

Gracula javana Cuvier in earlier lists. Chasen, following Oberholser (1917: 55), ascribes the Tambelan Islands birds to *G. r. prasiocara* Oberh., type locality in the Anamba group; and (1937: 232) also the birds from Billiton.

54. (538). *Anthreptes singalensis sumatrana* (Kloss)

C. singalensis sumatrana Kloss, type locality Ophir District, central Sumatra. Birds from Sumatra and Billiton seem alike (Chasen, 1937: 231). The skin examined from Singkep appears to be nearer to the Sumatran race than to the typical race which occurs in the Malay States, from northern Perak south to Gunong Pulai in Johore, but the female racial character, "rather more greenish below", is weak and we have skins from the Malay States and mid-Sumatra which are virtually indistinguishable.

55. 539. *Leptocoma b. brasiliiana* (Gmel.)

Appears as *Cinnyris hasselti* Temm. in Dammerman (1926: 320).

56. 540. *Leptocoma c. calcostetha* (Jard.)

Appears as *Chalcostetha insignis* Temm. in Dammerman.

57. 541a. *Leptocoma jugularis microleuca* (Oberh.)

Dammerman also lists *Cinnyris pectoralis* Horsf. = *Leptocoma jugularis pectoralis* (Horsf.) of Java, Bali, the Kangean Islands and Bawean Island, and Chasen (1931: 119) gives the synonym *L. j. ornata* (Less.) to Bintan birds, but the birds of Rhio and adjacent areas are clearly *L. j. microleuca* (type locality, P. Saya).

58. 562a. *Zosterops palpebrosa williamsoni* (Rob. & Kloss)

Replaced on Billiton and the Karimata Islands by races of *Zosterops chloris* Bp. (see Chasen, 1937: 230).

59. 563. *Passer montanus malaccensis* (Dub.)

A fairly persistent follower of man in this part of the world. Recorded by Chasen (1925: 97) from Pulau Galang and from P. Bintan (1931: 119): the latter, 1 ex., is described as "much darker than any other member of this race we have seen", but it would appear to be an individual aberration.

60. 565. *Padda o. oryzivora* (Linn.)

Probably introduced wherever it occurs in the Rhio-Lingga area, as in Malaya (see Gibson-Hill, 1949: 247-48).

Appendix

Distribution of Resident Land Birds among the Rhio Islands

The following table shows the reported distribution among the Rhio islands of the land birds likely to be resident in the area. Data are from the sources given in the introduction to this paper (see pages 345-8, *antea*), including skins still in the Raffles Museum collection, and others examined in 1949-50. A few records have also been added from Chasen's Handlist of Malaysian Birds (1935). Reports from very small islands and islets are shown under the adjacent larger island: the Pulau Nongsa records appear under Batam, those for P. Merah under Great Karimon, and so on.

BIRDS KNOWN FROM THE RHIO-LINGGA ARCHIPELAGO

The occurrence of a species is indicated only when we have a definite record of its presence on the island. Conjectural "compensated" totals, arrived at by the simple little mathematical dodge of adding the commoner birds to the lists of all the islands on which they are likely to occur, irrespective of whether or not their presence there has been reported, are shown in brackets in the last column in the table on page 352, *antea*. The adjustments made for that purpose err on the conservative side.

There is no doubt that the records as given below are far from complete. They suffer from the absence of evidence of the occurrence of the rarer birds, due to hurried collecting, and the failure of early workers to report the commoner species from all the islands that they visited. Dr. Abbott, Robinson, Kloss and Chasen were all primarily interested in novelties—specimens that could be used to found new species or races. With this in view they concentrated on the mammals in areas such as the present one, and gave scant attention to the birds. Their attitude is shown clearly in Kloss's comment on Batam, "I have no notes of value about birds for they were scarce and of common species and I soon left off shooting them" (Kloss, 1908: 71), and on Lingga, where after a list of eighteen mammals recorded from the island, six of which are marked as "sp. nov.", he adds, "The birds of Linga (sic) show no peculiarities and do not differ from those occurring in the adjacent mainlands. The most complete collection recorded is that made by the native hunters of the late Mr. A. H. Everett. The list of species is given in "Novitates Zoologicae" (Kloss, 1903: 57-8); just that and nothing more, in spite of the obvious gaps in Hartert's list. Chasen to some extent moulded himself in imitation of Kloss, who was a great man in his way, and accordingly held much the same views: "The birds (of Pulau Bulan) are of no particular interest being mostly representative of the common lowland fauna of the Malay Peninsula and Sumatra" (1924: 61), and "There is, as usual when dealing with the birds of small coastal islands in the Malayan region, little of interest to record concerning Pulau Galang" (1925: 96).

In part these men were right, and from the standpoint of specialists in the Bird Room at the British Museum (N. H.) they were wholly correct. But knowing the birds alive, and realising that the small islands are real, one would have a great deal more sympathy and respect for them as workers if before

dismissing the avifauna as of no interest they had first determined what birds really are on the small coastal islands, what they are doing there, and why. This they never did. Their attitude to birds was very similar to that of many good and ardent philatelists who classify their stamps as rare or common from their occurrence in collections, and have no concern with their life on letters, and their part in the traffic and commerce of the world. More than half Chasen's comments on the habits of *Pycnonotus b. brunneus* Blyth are devoted to the simple statement "It is still numerous in Singapore, and sitting under one tree, I have in a single morning obtained specimens of this species together with *P. simplex*, *P. erythrophthalmos*, *P. plumosus* and *Iole olivacea*, all very much alike in plumage. It is common in the vicinity of villages." (Birds of the Malay Peninsula, 4, 1939: 261).

In nearly all cases, residence of the birds shown in the following table is merely assumed from our knowledge of the habits of the species in question, and the month in which its presence was reported. The only published records of breeding known to me are the notes given by Chasen (1924: 61-62), who says of

Treron vernans griseicapilla Schlegel, (No. 166)

Hirundo tahitica abbotti (Oberh.), (No. 333)

Rhipidura javanica longicauda Wall., (No. 487)

Aplonis panayensis heterochlorus (Oberh.), (No. 526)

Munia atricapilla sinensis Blyth, (No. 566).

that nests and eggs (or nestlings) were seen or obtained on Pulau Bulan at the beginning of April. I have also been told that,

Streptopelia chinensis tigrina (Temm.), (No. 175)

Hemiprocne longipennis harterti Stres., (No. 242)

Pycnonotus goiavier personatus (Hume), (No. 431)

Copsychus saularis musicus (Raffl.), (No. 450)

Orthotomus a. atrogularis Temm. (No. 481)

Leptocoma jugularis microleuca (Oberh.), (No. 540)

all common birds, nest on Pulau Bèlakang Padang in the first half of the year, together with the five birds on Chasen's list, but the record lacks precise dates and verification.

BIRDS KNOWN FROM THE RHIO-LINGGA ARCHIPELAGO

Name of Species and Malayan Checklist Number	Recorded from							
	Great Karimon	P. Kundur	P. Durian	P. Bulan	P. Galang	P. Batam	P. Bintan	P. Maper
Anatidae								
11. <i>Nettion c. coromandelianus</i> (Gmel.) 1 ..	—	—	—	—	—	+	—	—
Accipitridae								
71. <i>Spilornis cheela baxus</i> (Forst.) ..	+	—	—	—	—	+	?	—
Turnicidae								
191. <i>Turnix s. suluator</i> (Gmel.) ..	—	—	—	+	—	+	—	—
100b. <i>Amurornis phoenicurus javanica</i> (Horsl.) ..	—	—	+	—	+	+	—	—
Columbidae								
162. <i>Treron s. curvirostris</i> (Gmel.) ..	—	—	—	—	—	—	+	—
164. <i>Treron f. fulvicollis</i> (Wagl.) ..	—	—	—	+	—	—	+	—
165. <i>Treron s. olax</i> (Temm.) ..	—	—	—	+	—	+	+	—
166. <i>Treron vernans arisicapilla</i> Schlegel 2 ..	—	—	?	+	—	+	+	—
168. <i>Phasianus jumbo</i> (Gmel.) ..	—	—	?	+	—	+	+	—
169. <i>Ducula aenea polia</i> (Oberh.) 3 ..	—	—	?	+	—	+	+	—
170. <i>Ducula bicolor</i> (Scop.) ..	+	—	—	+	—	+	+	—
175. <i>Streptopelia chinensis tigrina</i> (Temm.) ..	—	—	—	—	—	+	+	—
177. <i>Chalcophaps i. indica</i> (Linn.) ..	—	—	—	+	+	+	+	—
Psittacidae								
(179). <i>Psittacula longicauda defontainei</i> Chas. ..	—	—	—	—	+	+	+	—
180. <i>Psittinus c. cyanurus</i> (Forst.) ..	—	+	—	—	—	+	+	—
181. <i>Loriculus g. galgulus</i> (Linn.) 4 ..	—	—	—	—	—	+	+	—
Cuculidae								
185b. <i>Cuculus f. fuscus</i> Horsl. ..	—	—	—	—	—	—	+	—
189b. <i>Pendulocorys nasutus javanica</i> (S. Mull.) ..	—	—	—	—	—	—	+	—
190a. <i>Cacomantis merulinus theinodes</i> Cab. and Heine ..	—	—	—	—	—	—	+	—
195b. <i>Surniculus lugubris barusanus</i> Oberh. ..	—	—	—	+	—	—	—	—
199. <i>Rhopodites s. sumatranus</i> (Raffl.) ..	—	—	—	—	—	—	+	—
206. <i>Centropus bengalensis javanensis</i> (Dum.) ..	—	—	—	+	—	—	+	—
Strigidae								
217. <i>Ketupa k. ketupa</i> (Horsl.) ..	—	—	—	—	—	?	+	—
219c. <i>Ninox scutulata malaccensis</i> (Exton) ..	+	—	+	—	+	+	+	—
Pedargidae								
224. <i>Batrachostomus stellatus</i> (Gould) ..	—	—	—	—	—	—	+	—
225. <i>Batrachostomus affinis</i> Blyth ..	—	—	—	—	—	—	+	—

Name of Species and Malayan Checklist Number	Recorded from							
	Great Karimon	P. Kundur	P. Durlan	P. Bulan	P. Galang	P. Balam	P. Bintan	P. Maber
Caprimulgidae								
229. <i>Caprimulgus macurus binaculatus</i> Peale	—	—	—	+	+	—	+	—
Apodidae								
237a. <i>Hirundo apus g. gigantea</i> (Temm.)	+	+	—	—	—	—	—	—
240. <i>Apus affinis sulfuratus</i> (Blyth)	+	—	+	+	—	+	+	—
Hemiprocidae								
242. <i>Hemiprocus longipennis bartelsi</i> Stres.	—	—	—	—	—	—	—	—
243. <i>Hemiprocus c. conata</i> (Temm.)	—	—	+	+	+	+	+	—
Trogonidae								
247. <i>Harpactes duvaucelii</i> (Temm.)	—	—	—	—	—	—	+	—
Alcedinidae								
251. <i>Alcedo meninting verrauxii</i> De La Rue	—	—	—	—	—	—	+	—
254. <i>Ceyx r. rufidorsum</i> Strickl.	—	+	—	—	—	—	—	—
256. <i>Pendragopsis capensis malaccensis</i> Sharpe	—	+	+	—	+	+	+	—
257. <i>Iaccho p. pulchella</i> (Horsf.)	—	—	—	—	—	—	+	—
258b. <i>Halcyon coronata minor</i> (Temm. and Schleg.)	—	—	—	—	—	—	+	—
259. <i>Halcyon sumranensis fusca</i> (Bodd.)	—	—	—	—	—	—	—	—
(261.) <i>Halcyon chloris cyanus</i> (Oberh.) 5	—	—	—	+	+	+	—	+
Meropidae								
265. <i>Merops v. viridis</i> Linn.	—	—	—	—	—	—	+	—
Coraciidae								
268a. <i>Eurystomus a. orientalis</i> (Linn.)	—	—	+	—	+	—	—	—
Bucerotidae								
277. <i>Anthracoceros coronatus concolor</i> (Temm.) 6	+	—	+	+	+	—	+	+
Picidae								
304. <i>Dinopium j. javanense</i> (Linnch)	—	—	+	+	—	+	+	—
309. <i>Mallotopus p. pulchellus</i> Temm.	—	—	—	—	—	—	—	—
310. <i>Dryocopus j. javensis</i> (Horsf.)	—	—	+	—	+	—	—	—
311. <i>Dendrocopos canicapillus auratus</i> (Eyton)	—	—	+	—	—	—	—	—
312. <i>Dendrocopos m. malaccensis</i> (Gmel.)	—	—	—	—	—	—	—	—
317b. <i>Chrysocolaptes lucidus cherriei</i> Kloss.	—	—	+	—	—	—	+	—
Eurylaimidae								
322. <i>Eurylaimus a. ochromelas</i> Raffl.	—	—	—	—	—	—	+	—
(323). <i>Eurylaimus javanicus bartelsi</i> van Oort.	—	—	—	—	—	—	+	—

BIRDS KNOWN FROM THE RHIO-LINGGA ARCHIPELAGO

Name of Species and Malayan Checklist Number	Recorded from							
	Great Karimon	P. Kundur	P. Durlan	P. Butan	P. Galang	P. Balam	P. Bintan	P. Mapor
Pittidae								
329. <i>Pitta megarhyncha</i> Schleg. ..	+	—	+	—	—	—	+	—
Hirundinidae								
333. <i>Hirundo tahitica abbotti</i> (Oberh.)	—	—	+	+	—	+	+	—
Campephagidae								
337. <i>Coracina striata sumatrensis</i> (S. Mull.)	—	—	+	—	+	—	+	—
339. <i>Hemipus hirsutianus</i> (Temm.)	—	—	—	—	—	—	+	—
Dicruridae								
350a. <i>Dicrurus paradiseus platyrus</i> (Vieill.) ? ..	—	—	+	+	+	+	—	+
Corvidae								
360. <i>Corvus enca compilatus</i> Richm. ..	—	—	—	—	+	—	—	—
Timaliidae								
370. <i>Malacocincla m. malaccensis</i> (Hartl.)	—	—	—	—	—	—	+	—
371. <i>Malacocincla r. rostratus</i> (Blyth)	—	—	—	—	—	—	+	—
376. <i>Malacopteron c. cinereum</i> Eyton	—	—	—	—	—	—	+	—
388. <i>Macronus y. gularis</i> (Horsf.)	—	—	—	+	+	—	+	—
394. <i>Stachyris unculata postoralis</i> (Blyth)	—	—	—	—	—	—	+	—
Aegithinidae								
413. <i>Aegithia v. viridissima</i> (Bly.) ..	—	—	—	—	—	—	+	—
417. <i>Chloropsis sonnerati zosterops</i> Vie. ..	—	—	—	—	—	—	—	—
Pyrenonotidae								
431. <i>Pyrenonotus galactes personatus</i> (Hume)	—	—	—	+	—	+	+	—
433a. <i>Pyrenonotus p. planiceps</i> Blyth ?	—	—	+	—	+	+	+	—
435. <i>Pyrenonotus z. simplex</i> Less. ..	—	—	—	—	+	—	+	—
439. <i>Crinifer p. phaeocephalus</i> (Hartl.)	—	—	—	—	—	—	+	—
442. <i>Microscelia viridaceus malaccensis</i> (Blyth) ..	—	—	—	—	—	—	+	—
Turdidae								
450. <i>Coppychus nularis musicus</i> (Raffl.)	+	—	+	+	+	+	+	—
451. <i>Coppychus malabaricus walloperensis</i> (Oberh.) ?	—	—	+	—	—	+	+	+
Sylviidae								
481a. <i>Orthotomus a. atropurpureus</i> Temm.	—	—	—	+	+	+	+	—
483. <i>Orthotomus viridis</i> Lesperius Oberh.	—	—	+	—	—	+	+	—
484. <i>Orthotomus sepium ruficeps</i> (Less.)	—	—	+	+	—	—	—	—

Name of Species and Malayan Checklist Number	Recorded from							
	Great Karimon	P. Kundur	P. Durian	P. Bulan	P. Galang	P. Batam	P. Bintan	P. Mapor
Muscicapidae								
487. <i>Rhipidura javanica longicauda</i> Wxall, 10	—	—	—	+	—	+	—	—
500. <i>Muscicapa r. ruficastra</i> Ramm.	—	—	+	—	—	—	+	—
514a. <i>Hypothymis azurea prophata</i> Oberh.	—	—	+	—	—	—	+	+
515a. <i>Terpsiphone paradisi affinis</i> (Blyth)	—	—	—	—	—	—	+	—
517. <i>Pachycephala cinerea butaloides</i> Stres.	—	—	—	—	—	+	+	+
Motacillidae								
522. <i>Anthus novaeseelandiae malayensis</i> Eyton	—	—	—	+	—	—	+	—
Sturnidae								
(526). <i>Aplonis panayensis heterochlorus</i> (Oberh.)	+	—	+	+	+	+	+	+
533. <i>Gracula r. religiosa</i> Linn.	—	—	+	+	+	+	+	+
Nectariniidae								
535. <i>Anthreptes m. malaccensis</i> (Scop.)	—	—	+	+	—	+	+	+
539. <i>Leptocoma b. brasiliensis</i> (Gmel.)	—	—	+	+	—	—	+	+
540. <i>Leptocoma v. calceathea</i> (Jard.)	—	—	+	+	—	+	+	+
541a. <i>Leptocoma jugularis microleuca</i> (Oberh.) 12	+	+	—	+	+	+	+	+
543. <i>Aethopyga s. siparaja</i> (Ramm.)	—	—	+	+	+	+	+	+
549. <i>Arachnothera a. chrysogenys</i> (Temm.)	—	—	—	—	—	—	+	—
Dicaeidae								
552. <i>Dicaeum cruentatum ignitum</i> (Berg.)	—	—	+	—	+	+	—	+
554. <i>Dicaeum t. trigonostigma</i> (Scop.)	—	—	+	+	+	+	+	+
557. <i>Amisops perousus ignicapillus</i> (Eyton)	—	—	—	—	—	—	+	—
561. <i>Piprisoma agile sordidum</i> Rob. and Kloss	—	—	—	—	—	—	+	—
Zosteropidae								
562a. <i>Zosterops palpebrosa williamsoni</i> Rob. and Kloss	—	+	—	—	—	—	—	—
Ploceidae								
563. <i>Passer montanus malaccensis</i> Dub.	+	—	—	—	+	+	+	—
565. <i>Padda o. oryzivora</i> (Linn.) 13	—	—	—	+	+	+	—	—
566. <i>Munia atricapilla sinensis</i> Blyth 14	—	—	?	+	—	+	+	—
Total (Max. 96)	12	6	32 + 13	36	29	45 + 11	71 + 11	20

Notes (Appendix)

1. 41. *Nettapus c. coromandelianus* (Gmel.)

De Bruyn took specimens of this bird on Singkep. The only record of its occurrence in the Rhio area is from Schot.

2. 166. *Treron vernans griseicapilla* Schlegel

Robinson (1916: 70) describes this bird as very common on Mapor, and it would seem to be the most numerous and widespread of the green pigeons all through the Rhio group. Kelham (1883: 24) found it "very plentiful throughout the country (Malaya), particularly about the well-wooded islands to the south of the peninsula". Chasen (1924: 61) reports nesting on Pulau Bulan at the beginning of April 1924. The query for Durian is Siebers (1926: 309), "Sometimes a green pigeon was observed, probably *Treron vernans* L."

3. 169. *Ducula aenea polia* (Oberh.)

Durian: Siebers (*loc. cit.*) "Fruit pigeons were not abundant. Now or then (sic) a single specimen came flying over; possibly it was *C. aenea* or *rosacea*." *Ducula rosacea* (Temm.) occurs on the Thousand Islands in the West Java Sea, on the Kangean Islands, on the Karimoun-Java Islands, on the islands of Solombo Besar and Arenda in the East Java Sea, and on Christmas Island in the Indian Ocean, but there is no record for it from near the Rhio group. The Batam record for *C. argentina* Bp is from Chasen 1935: Chasen 1931 (p. 120) gives only P. Bintan and Great Karimoun.

4. 181. *Loriculus g. galgulus* (Linn.)

The Bintan record is a specimen taken by Seimund. Kelham (1882: 133) says "During December, I came across a small party of them (*L. galgulus*) on Pulau Battam, a large thickly wooded island near Singapore."

5. (261). *Halcyon chloris cyanescens* (Oberh.)

Kelham (*loc. cit.*: 127) describes *Halcyon chloris* as "Particularly plentiful on Pulau Battam, Pulau Nongsa, and all the small islands near Singapore." Robinson (1916: 71), strangely, found it not very abundant on Pulau Mapor. The northern race occurs widely among the Singapore Islands.

6. 277. *Anthracoceros coronatus convexus* (Temm.)

This hornbill appears to be plentiful and widespread throughout the Rhio group, but there are probably seasonal variations in the numbers at any one point, as the birds move round in search of suitable blocks of fruiting trees. It has not been taken on Singapore Island, or any of the off-lying islets, though I have several times seen it in flight among the islands off the north coast of Batam.

7. 350a. *Dissemurus paradiseus platurus* (Vieill.)

Durian: Siebers (*loc. cit.*), "In June rather abundant _____ In November a few only were seen." Robinson (*loc. cit.*: 72) found it very common on Pula Mapor. We have no records of it from any of the Malayan islands south of Singapore (it is known from Pulau Ubin and Pulau Pisang), in spite of the fact that it appears to be at least fairly plentiful in the Rhio group.

8. 433a. *Pycnonotus p. plumosus* Blyth

Robinson found this bird "fairly common in secondary growth" on Mapor. This seems to be its status throughout the Rhio Islands, and among the islands south of Singapore, on the north side of the Strait. It is the commonest of the bulbuls on the islands there, followed by *P. goiavier personatus* (Hume), and then *P. s. simplex* Less.

9. 451. *Copsychus malabaricus mallopercnus* (Oberh.)

Robinson reports the Shama as common on Mapor. Siebers says it was not numerous on Durian, "at least in November". From experiences in Malayan waters it seems surprising that this bird is not more widespread among the Rhio Islands: it ranks high among the island-haunting *La-serines* further north, and off the east coast of the Peninsula it is more widespread in such localities than *C. saularis musicus* (Raffl.).

10. 487. *Rhipidura javanica longicauda* Wall.

Breeding on Pulau Bulan in the early part of April Chasen (1924-62).

11. (526). *Aplonis panayensis heterochlorus* (Oberh.)

Breeding on Pulau Bulan at the beginning of April (Chasen, *loc. cit.*).

12. 540. *Leptocoma jugularis microleuca* (Oberh.)

This species has a peculiarly strong affection for small islands, frequenting the shore trees round the beaches if there is no other clear space for it. *Anthreptes malaccensis* (Scop.) usually joins it if coconut palms grow there. Robinson found *L. brasiliensis* (Gmel.) as plentiful on Pulau Mapor as *L. jugularis*, but in my experience *Aethopyga s. siparaja* (Raffl.) is generally the third most common species on islands and near beaches.

13. 565. *Padda o. oryzivora* (Linn.)

On his visit to Pulau Bulan, Chasen writes, "The Java Sparrow seems to have established itself fairly well, but the only bird shot showed unmistakable signs of having been kept in captivity". It is recorded as feral on P. Galang and a small islet off Batam.

14. 566. *Munia atricapilla sinensis* Blyth

Breeding on Pulau Bulan at the beginning of April (Chasen, *loc. cit.*).

Summary

The present paper gives a revised list of the birds known from the Rhio-Lingga Archipelago (the islands of the Rhio group, the Lingga-Singkep group, and Pulau Saya and adjacent islets), lying south of the Malay Peninsula, between latitudes $1^{\circ} 14''$ N. and $0^{\circ} 47''$ S. A total of 180 species are now recognised as occurring in this region, with a further five doubtful records. The avifauna of the Rhio-Lingga chain of islands is clearly an impoverished southward extension of that of Singapore Island, but the influence of the latter weakens slightly as we pass down the archipelago: the Rhio Islands have five subspecies distinct from those further north, the Singkep-Lingga group a further six subspecies and a new species. On the whole, the affinities of the Rhio-Lingga birds, where they differ from the Peninsular ones, are with the small islands of the southern extremity of the South China Sea and Billiton rather than with Sumatra, though an increased approximation to the forms found in South Sumatra is noticeable as one passes through the group from the Singapore Strait to Billiton. A slightly fuller analysis of the hitherto unrecorded avifauna of Singkep will be given in a later number of the *Bull. Raff. Mus.*

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