



GEOGRAPHY

THE area with which this work is concerned is the Malay Peninsula in its widest sense, from the Isthmus of Kra and the Pakchan estuary on the north, to Cape Roumania, in Johore, on the south, the southernmost extremity of the Asiatic continent. The islands adjacent to the Peninsula are also included.

The area is a natural but not a political unit, the greater portion forming part of the British Empire, either as the Crown Colony of the Straits Settlements, the Protectorate of the Federated Malay States, or the rather more loosely attached states, the suzerainty over which passed to Great Britain by the Anglo-Siamese Treaty of 1909, and by later treaties entered into with these states individually. These states are collectively known as the Unfederated Malay States.

The northern third of the Malay Peninsula forms part of the kingdom of Siam.

I. THE CROWN COLONY OF THE STRAITS SETTLEMENTS

(A) SINGAPORE

Singapore is an island at the southern extremity of the Malay Peninsula, commanding the ocean route from Europe and India to China, and within a hundred miles of the Equator. It is roughly diamond-shaped, with a length east and west of about twenty-two miles, and a breadth north and south of fourteen, and an area of 217 square miles.

The coastal districts of Singapore are flat, much of them having once been swamp, and to the north and west there is a good deal of mangrove; to the east and in the south there are short stretches of sand. The interior is undulating land, and there are numerous low hills, rising to a maximum elevation of about 500 ft.

Although reasonably good snipe and pigeon shooting was to be had on the island, there is now little to attract the sportsman. A few acres of forest still exist on the higher ground in the interior, but the island has mostly been cleared of its original forest for the purpose of rubber-growing, other agricultural pursuits and military purposes. The shore-shooting seems always to have been poor, and wading birds are never really common, a condition probably due to the absence of extensive mud-flats. Occasional congregations of plovers and sandpipers may be observed on the exposed coral reefs south of the island.

(B) PENANG

Penang, situated on the west coast of the Peninsula, in lat. $5^{\circ} 20' N.$, about three hundred and fifty miles from Singapore, is a mountainous island, in area rather over 100 square miles, or slightly smaller than the Isle of Wight. It is separated from the mainland by a shallow strait about four miles wide and much encumbered by mudbanks. On the south and west there are considerable areas of flat, alluvial land devoted to the cultivation of coconuts and rice, but the core of the island is steep and mountainous, composed of granite, and rising, in several peaks, to an altitude of over 2700 ft. Originally the island was covered with heavy forest, but much has been cleared and devoted to cultivation of various kinds. A fair amount of original jungle still remains on the crests of the hills and at the north-west corner of the island.

Although the museums of Europe contain much material from Penang, our knowledge of its fauna is by no means exact, and many birds attributed to the island have, in all probability, never really been found there. Our knowledge of the shore-birds visiting Penang is very scanty, and an interesting field of work is, therefore, still open to the ornithologist who is prepared to devote the leisure time of years to the subject.

The study of the sea-birds frequenting Pulau Perak, an isolated and barren rock some seventy miles from Penang on the direct course to Ceylon, may be commended to his notice.

(C) PROVINCE WELLESLEY

Province Wellesley is a strip of land from ten to fifteen miles deep, on the coast of the Peninsula facing Penang, with an area of 280 square miles. The country is mainly flat alluvial land, though there are hills on the eastern and southern border. Little original forest remains. In the period 1840-1870, however, not a few collections were made there, and many of the specimens attributed to Penang were really from this province.

(D) THE DINDINGS¹

Administratively part of the settlement of Penang, but separated from Province Wellesley by the whole of the coast-line of the state of Perak, the Dindings consist of two large islands, Pulau Pangkor and Pulau Pangkor Ketchil, a group of islands off the estuary of the Perak river, known as the Pulau Sembilan or Nine Islands; an isolated island, Pulau Jarak, in the middle of the Straits of Malacca, and a strip of mainland running north from Pangkor, with a total area of about 180 square miles.

The birds have not been exhaustively studied, but are fairly well known. The avifauna of Pangkor is of special interest as including in its members the Argus pheasant, not known on any of the larger islands.

¹ Since the above was written the Dindings have been ceded to Perak and are, therefore, no longer part of the Straits Settlements.

The Sembilan Islands—all quite small and rocky, though covered with jungle and scrub—are a halting-place for multitudes of birds during the migration season from October to December. The same may be said of Pulau Jarak, where also the Nicobar pigeon (*Caloenas nicobarica*), unknown on the mainland of Malaya, breeds.

Mr A. T. Edgar has recently obtained much valuable information about the shore-birds visiting the Dindings, which is a favourable locality for collecting.

(E) MALACCA

The territory of Malacca, the largest of the settlements comprising the Crown Colony of the Straits Settlements, lies between the Protected State of Johore and the Federated Malay State of Negri Sembilan on the west coast of the Peninsula, with a coast-line of somewhat over forty miles. Malacca itself is some hundred and twenty miles by sea from Singapore. The site of an historic Malay sultanate—and then one of the great emporia of trade in the Far East—Malacca was conquered by D'Albuquerque in 1511, and remained under the Portuguese flag until 1650, when it passed to the Dutch, and finally became British in 1824. Malacca has given its name to the whole Peninsula, and even now has in many quarters, especially on the Continent, a far wider significance than in strict accuracy the size of the town or settlement justifies.

The settlement is of special interest to the ornithologist as being the country from which nearly all specimens of Malayan birds originally reached Europe, and as being, therefore, the *terra typica* of very many species.

There is still a certain amount of jungle in the settlement, which has an area of some 720 square miles, and a good many plains and low hills, covered, in part, with lalang grass and secondary scrub.

II. THE FEDERATED MALAY STATES

(A) PERAK

The Malay State of Perak, the senior of the Federated Malay States, lies entirely on the western side of the Peninsula.

Briefly it comprises, since the Anglo-Siamese Treaty of 1909, the whole drainage basin of the Perak, and parts of the Krian river to the north, and the Bernam to the south, and has an area of about 8000 square miles.

The coast of the state is flat alluvial land fringed with mangrove forest, and fronted by islands of similar character intersected by fairly deep water channels, but to seaward there is a broad and very shallow bank of mud and sand. The birds of the mountains in the interior have been investigated in considerable detail, but, as in the case of all the Malay States, little is known about the visiting wader-birds.

(B) SELANGOR

Selangor is the state south of Perak, with an area of about 3100 square miles. It is watered by four principal rivers—the Bernam, forming the Perak boundary, the Selangor, the Klang and the Langat.

The sea-coast, north of the mouth of the Langat river to the Bernam, is deeply fringed with mangrove. Off the mouth of the Klang river there are several large alluvial islands, also covered with mangrove, and broad mud-flats. South of the Langat, where the coast is more exposed, conditions are somewhat different. The mangrove and mud-flats disappear and their place is taken by sandy beaches, with groves of *Casuarina* trees. There is also a group of small islets near the mouth of the Selangor river. Behind the mangrove zone on the coast there is, in many parts of the state, a belt of fresh-water swamp, overgrown with thorny palms and many other plants peculiar to the zone, which is also the habitat of some birds that are rare in other types of country, as, for instance, the finfoot.

As in the state of Perak, the low-country forests, where they have not been destroyed for planting purposes, have been heavily cut over, but above about 2000 ft. much of the original primeval forest remains.

(C) NEGRI SEMBILAN

The group of small states collectively known as the "Negri Sembilan" (nine countries) are situated between Selangor to the north, and Malacca and Johore to the south; a good deal of the territory, notably that of Jelebu, drains into the China Sea. The main ranges of the Peninsula terminate towards the south of the state and dwindle in height. The terrain is mainly undulating, and there are many winding valleys of great beauty, given over to the cultivation of rice, surrounded by low hills, originally jungle-covered, the lower slopes of which are now largely cleared for rubber cultivation. Near the coast, which is sandy, there is a good deal of coconut-land.

(D) PAHANG

Pahang, with an area of nearly 14,000 square miles, is by far the largest of the Federated Malay States. It lies entirely on the eastern side of the Peninsula, and the Pahang river, the longest in the Peninsula, is entirely within its borders. The coast is low and sandy, with much swampy land behind it, and the lower courses of the rivers run through flat alluvial land, but to the west especially, and on all its borders, the land is hilly or mountainous.

The agricultural and mining industries are less developed than in the western states and the population is smaller, largely confined to the banks of the bigger rivers. There is, therefore, a much greater extent of untouched jungle, and the native fauna has, consequently, been less interfered with, though the big game animals have been much harried and stand in serious danger.

Except for the swampy south-east corner, and the coastal districts, the fauna, especially of the mountains, is well known. The big white-crested Argus pheasant (*Rheinardius ocellatus nigrescens*) is at present known only from Pahang, where it is found on the lower slopes of several mountains, although it is almost certain to occur in the neighbouring states of Trengganu and Kelantan.

THE TIOMAN ARCHIPELAGO

Off the coasts of Pahang and Johore, and at varying distances from the coast, lies a group of islands of differing size and altitude. The largest and loftiest, Pulau Tioman, belongs to Pahang, while most of the others, including Pulau Tinggi, Pulau Pemanggil, Pulau Aor, Pulau Babi and Pulau Sibul, are Johore territory. There are numerous smaller islands, some little more than tide-way rocks.

Many of the islands are within the ten-fathom line, while others, including the larger ones, Pulau Tioman, Pulau Pemanggil and Aor, are in depths exceeding twenty-five fathoms. In none have the birds differentiated into races which at the most are more than *very* slightly distinct from the adjacent mainland forms, though the mammals have varied to a much greater degree.

The avifauna is limited ; no barbets, trogons or woodpeckers, and but few of the jungle babblers, occur, but pigeons of several species are numerous, and there are breeding colonies of terns and swiftlets (*Collocalia*) producing the edible birds' nests of commerce.

From their situation, and owing to difficulties of access during the north-east monsoon, these islands have been studied only during the summer months. It is probable that in October and November, and again in April, they are a halting-place for large numbers of migratory birds, breeding in China, Japan and Siberia, and wintering in Malaya.

III. THE UNFEDERATED MALAY STATES

The Unfederated Malay States are connected with the British Empire in a somewhat looser manner than is the case with the Federated Malay States. Taken together, they cover an area only slightly less than that of the Federated States.

(A) JOHORE

The state of Johore, with an area of about 7500 miles, occupies the southern portion of the Malay Peninsula. It is drained by three fair-sized rivers (the Muar, the Endau and the Johore) and comprises a larger extent of level country than the states to the north. There is much swamp, and a good deal of mangrove toward the south and south-west, but also several mountains and hill ranges. The ornithology is well known.

(B) TRENGGANU

This state is north of Pahang, on the east coast of the Peninsula. It contains the whole of the watersheds of three considerable rivers—the Trengganu, Dungun and Kemamun—and several smaller ones, with a total area of about 6000 square miles.

Along the coast for some distance inland there is a strip of comparatively level country, which is thickly inhabited and planted largely with coconut

and areca palms, though there is not sufficient rice grown for the use of the inhabitants, who are mainly occupied in fishing during the south-west or fine monsoon, and export considerable quantities of dried fish. The interior of the state is wild and rugged, with mountains rising in places over 5000 ft., and is very thinly inhabited. It is, of course, heavily forested.

(C) KELANTAN

An east-coast state rather smaller than Trengganu but comprising the whole basin of the Kelantan river and part of two smaller rivers.

The country on the coast for some distance is flat and thickly populated, and sufficient rice is grown for the needs of the whole state, and there is also a not inconsiderable cattle-breeding industry. There are large coconut plantations on the coast, and rubber in the interior. Towards the Pahang and Perak borders, however, where the country is mountainous and thinly populated, the original heavy forest remains, though it is, as we approach the north, of a less luxuriant evergreen type. In these regions the fauna is exactly the same as that of the more southern parts of the Peninsula, but on the coast a slight change commences to show itself, and many birds that are rare or almost non-existent in the Federated Malay States are here abundant, these birds continuing their range northwards into Siam.

(D) KEDAH

Kedah lies entirely on the western seaboard of the Malay Peninsula and to the north and east is bordered by Siamese provinces.

The type of country is diversified; much of it is flat land which is given over to wet rice, while the rest is "gĕlam" (*Melaleuca*) swamp. There is a good deal of undulating hill-land, formerly planted with tapioca and pepper, and now with rubber, and there is also much secondary jungle.

In Kedah the watershed between the Straits of Malacca and the China Sea is low, not exceeding a few hundred feet, and the seasons are far more marked than to the southward. There are, therefore, corresponding differences in the fauna, as in the case of Kelantan, and many Malayan species here attain their northern, as do Burmese species their southern, limit.

(E) THE LANGKAWI ISLANDS AND THE BUTANG ARCHIPELAGO

The Langkawi group, lying off the coasts of Kedah and Siam, consists of two large islands—Langkawi, which belongs to Kedah, and Terutau, separated from Kedah by a narrow strait, which is Siamese. The sea between them and the mainland certainly does not exceed fifteen fathoms in any part and is mostly a good deal less.

The surface of Langkawi is varied, but there is a good deal of flat land, on which rice and rubber are grown. Gunong Raya, the highest mountain, is nearly 3000 ft., and is covered with jungle.

Terutau is smaller and much more rugged, with little flat land, though it does not attain so great an elevation as Langkawi. The latter island maintains a considerable population of fishermen and agriculturists, but Terutau is almost without permanent inhabitants.

Though no peculiar species occur in the group, the birds are of considerable interest, as many species—such as trogons, woodpeckers and large hornbills, and a certain number of timaline birds—are not uncommon, which is unusual on islands of this type, and leads one to suppose that connexion with the mainland has been extremely recent, possibly more so than in the case of even Singapore and Penang.

The mammals of the islands exhibit a considerable degree of peculiarity.

Farther seaward, and separated from the Langkawi group by depths of water in the neighbourhood of thirty fathoms, is a group of three small islands, Pulau Butang, Pulau Adang and Pulau Rawi. They are practically uninhabited, very rugged and mountainous, rising to a height of about 3400 ft. on Pulau Adang, and covered with rather sparse forest.

The fauna, so far as birds and mammals are concerned, is a very impoverished one.

(F) PERLIS

Perlis is a small state to the north of Kedah, of which it was formerly an appanage, and has an area of a little over 300 square miles. Much of it is alluvial plain, covered with ricefields, but to the north there is a limestone range of about 2000 ft. elevation, and there are isolated limestone hills in other parts of the state. Old jungle, where it occurs, is thin and partly deciduous, and there is a belt of mangrove forest on the coast.

The birds are well-known and are of considerable interest, as indicating that the district is a transition area for northern and southern forms.

IV. SIAMESE MALAYA

The northern portion of the Malay Peninsula, from the Isthmus of Kra in about 9° 50' N. down to the Unfederated Malay States border, forms part of the kingdom of Siam, and covers an area of rather less than 30,000 square miles, or rather more than a third of the whole Peninsula.

The area, which is not particularly well known to English readers, is described in a certain amount of detail in the first volume of this work.

Working from south to north along the east coast we have, first of all, the *Patani States*. Patani was at one time an independent Malay kingdom of considerable renown, but it was conquered by the Siamese. Near the coast the country is flat and sandy, but up-stream there are large areas of rice-country and undulating hills, while on the Perak borders the main range of the Peninsula rises to over 5000 ft. and is covered with heavy jungle. There are also some isolated granite mountains of considerable height, and from the plains rise limestone hills, some much honeycombed with caves.

The country, like Perlis, on the western side of the Peninsula, is a transition

area between northern and southern forms, though it is probably correct to say that the fauna of Patani is more akin to that of the states to the south than to the north.

There are no islands off the coast, but the neighbourhood of Tanjong Patani, with the sheltered shallows under its lee, is a great resort for sea- and shore-birds, and a point of arrival and departure for many migratory birds crossing the China Sea.

Senggora is the province immediately north of Patani, with *Patelung* to the north of it and Kedah to the west. It is a small district, largely sandy plain or secondary scrub with a little rice-country round the margin of the "Inland Sea." On the Kedah border the country rises to low rolling hills, but there is little old forest in the district. Patelung has much flat land and reed swamps round the "Inland Sea."

The "Inland Sea," known as the Tale Sap, with its northern prolongation the Tale Noi, merits a few words. It is a considerable stretch of water cut off from the China Sea to the east by a long, low ridge of land, terminating in a hill opposite Senggora town. At its southern end it communicates with the sea by a narrow channel with a dangerous bar at its mouth. Towards its northern end the lake broadens and is studded with islands of limestone in which swiftlets breed. At its entrance the lake is entirely salt and teems with marine fish, but travelling north it becomes less saline, and at its northern end it is only slightly brackish; it is everywhere extremely shallow. The reed-beds round the lake would yield a rich harvest of water-birds.

Still travelling northwards, the next province we come to on the eastern side of the Peninsula is *Nakon Sri Tanmarat*, marked in old maps as Ligor. Near the coast and for some distance inland the country is level and sandy, but on the western border the mountains rise to a considerable height. These mountains have yielded several birds of considerable interest—in part allied to those of the southern Peninsular mountains, and in part to those of Tenasserim—including a peculiar form of sunbird.

North again of Nakon is *Bandon*, which, in its lower levels, resembles the other east-coast states, but has a very flat and muddy shore, except at the north-east corner, where the land is high and craggy. Inland there are the usual low hills and plains.

In the Bight of Bandon are the two islands *Koh Samui* and *Koh Pennan*, which are by far the largest on the east coast of the Malay Peninsula, and have a large bird population.

Chaiya, *Langsuen* and *Kuwi* are three small and narrow districts north of Bandon and bring us to the northern termination of the Malay Peninsula. Little is known of the ornithology of this area, which is not, however, likely to differ from that of the adjacent provinces.

Turning now to the west coast of Peninsular Siam and starting from the southern border, marching with the Unfederated Malay State of Perlis, is the small district of *Setul*, very similar in character, with heath-like plains and rocky hills covered with dry and partially deciduous vegetation. Farther north is *Palean*, and then the larger and more important district of *Trang*,

with a considerable agricultural and fishing population of Chinese, Malays, and Siamese, and a mixed breed known as Samsams, as well as a few primitive sea-gipsies, Selungs or Orang Laut, who frequent this coast as far north as the Mergui Archipelago.

Off the coast, which is indented and has a good deal of mangrove, are numerous limestone islands, many of curious outline. Inland, the country is flat, in part devoted to grazing and to the cultivation of wet rice. On the eastern border the country, where it runs with Patelung and Nakon, is mountainous. This part of Peninsular Siam has been very thoroughly worked from a zoological point of view. The district is noted for the number of water- and swamp-birds that frequent it, and which here find their southern limit.

Junk Zeylon, also known as Salanga, Tongkah, Puket or Thalang, is a long island, about twenty-five miles in maximum length north and south, by about ten miles in maximum breadth, and is separated from the mainland to the north by a very narrow and shallow channel, not more than three fathoms in depth.

The surface of the island is diversified with many alluvial flats, which are very rich in tin, and with steep hills. The western side of the island is steep and rugged, with a rocky shore, but the east is much indented and in many places faced with mangrove swamp. The island is thickly populated, mainly with Chinese miners, and the principal town, Puket, is a large and flourishing place.

The zoology of *Junk Zeylon*, and the archipelago of which it is the largest island, is very well known. As might be expected from its vicinity to the mainland, and the shallowness of the adjacent seas, the birds of the archipelago are in no respects distinct, though two or three nominal species have been founded. Large numbers of migrant species occur during the winter months.