ITINERARY IN PERAK, SELANGOR, AND THE SIAMESE MALAY STATES

By NELSON ANNANDALE AND HERBERT C. ROBINSON

As accurate information regarding the Malay Peninsula, and especially those states under Siamese rule, is difficult of access, or altogether inaccessible, we have thought it well to add to our report a brief general account, personal as well as zoological and anthropological, of the places at which we stayed and the country we traversed. Those sections of the itinerary deal with districts we visited together which have been prepared jointly, but as each of us worked in places of which the other can have little or no first-hand information, one or other has added his name at the end of other sections, which treat, chiefly or wholly, of places for the facts regarding which he is alone responsible.

PART I. PERAK AND SELANGOR

South Perak

We stayed rather over two months in the Batang Padang district of South Perak, the greater proportion of our time being devoted to anthropological work, though conditions relatively more favourable than in the Patani States enabled us to get together a considerable zoological collection, representing nearly all terrestrial divisions of the animal kingdom. The district, as a whole, has only been opened up within the last twenty years, and before was entirely buried in primaeval jungle, with only a few scattered Malay hamlets and a comparatively large number of Sakai camps. It is now, under British administration, one of the most important mining districts in the state of Perak, while planting operations have also been commenced on a considerable scale, though the high price of labour, due to the mining industry, has militated against this form of activity. Under these circumstances, it will be readily understood that the district is by no means a favourable one for studying the
indigenous Malay, who is to be found chiefly in the more agricultural districts of Kuala Kangsar and Krian; as a matter of fact, even the Malay population, such as it is, consists, to a large extent, of Achinese and other island folk, as the official census would seem to indicate.

The case is different when we come to consider the Sakais (Mai Darát). The whole of the main range of the Peninsula, which here attains a height of over seven thousand feet, as well as the subsidiary foot-hills, is still untouched by civilization, and only occasionally visited by wandering Chinese and Malay pedlars; while the mountains are inhabited by a considerable Sakai population, who still retain, in many respects, their primitive habits and customs. As far as the tribes living in the higher hills are concerned, there has not been time for the purity of the race to be affected by Chinese and Malay admixture—a contingency which the comparatively strict ideas of sexual morality held by the Sakais also postpones for the present.

We give a short account of each village visited in the Batang Padang magistracy, with a record of the work accomplished.

**Bidor.** A large village some seven miles from Tapah, which was, at the time of our visit, the administrative centre of the district, though now that the railway from Penang to Singapore has reached Bidor, the headquarters have been transferred to the latter place. The population is considerable but mainly Chinese, though several Sakai communities exist within a few miles. In the immediate proximity of the village there is no old jungle, the land consisting of worked-out tin diggings, with a few badly cultivated rice-fields.

We stayed at Bidor, which has an unenviable reputation for unhealthiness, for two or three days at a time on several occasions during January and February, 1902. During this time we measured a fair number of Perak Malays as well as several Sakais from Perangkap, a clearing at the base of the main range, seven or eight miles away, and paid a visit to a Sakai camp at Paku. We also investigated some interments, and obtained an imperfect skull of a Sakai woman, and a small ethnographical collection. Practically no zoological collecting was done, but a few Hymenoptera and Heterocera were obtained, and here, for the first time, we met with the nocturnal wasp, *Vespa doryloides*, which is usually so common in Malayan countries, but which appears to be absent from, or very scarce in, the Patani States.

**Gedong.** A small Malay clearing, with about forty inhabitants, a few miles from Bidor. The clearing is surrounded by bamboo jungle, and we visited a small camp of Sakais in the immediate neighbourhood, obtaining some ethnographical specimens and the measurements of several individuals.

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A number of birds belonging to the ordinary Malayan lowland fauna were obtained, among them a young individual of the rare *Baza sumatrensis*, which was brought to us by a Sakai, but nothing else of note. Among the insects the most striking point was the great abundance of beetles belonging to the family *Languridae*, which we only met with elsewhere sporadically.

We stayed at Gedong from January 6th to 13th, 1902.

*Jeram Kawan.* A small hill-rice clearing four or five hours up stream from Sungkei, at the limit of navigation for canoes. The place is surrounded by high jungle, and some thermal springs close by are much frequented by big game, including gaur, sambhur, rhinoceros, pig, and tapir. A good many species of animals not elsewhere collected were secured here, among the vertebrates being specimens of the recently described bat, *Emballonura peninsularis*, Miller, and skins of *Heliornis personata* and *Phodilus badius*. The crocodile *Tomistoma schlegelii* was also noticed on a log on the river. Several camps of the Mai Darât existed at no great distance from Jeram Kawan, and the members of one party who visited us were measured.

We stayed at Jeram Kawan from February 12th to 16th, 1902.

*Jor.* A public works bungalow on the banks of the Jor river at its point of junction with the Batang Padang, about twenty miles from Tapah, and about two thousand feet above the level of the sea. We stayed at Jor for two or three nights in January, 1902, on our way to and from Telôm, and collected a few species of insects. Jor seems to be about the superior limit of the lowland fauna in the Batang Padang valley, and we noticed that *Ornitoptera brookeana*, still common in the remoter parts of Batang Padang, though almost extinct in the rest of Perak, was not found beyond this point. Dragon flies were very numerous at Jor;¹ but we did not obtain specimens. A species of the Rhopaloceran genus *Lepwocircus*, always local in the Peninsula, is here abundant. Between Jor and Tapah we captured two specimens of a tortoise allied to *T. emys*, which has been described by Mr. Boulenger as *Testudo pseudemys*.

In a restricted belt below Jor the hillsides are covered with clumps of a giant bamboo, which reach an enormous height and girth, producing beast-like sounds as they swing together in the wind, and providing one of the most magnificent manifestations of vegetable growth to be found anywhere in the tropics.

*Sungkei.* A large Malay village fifteen or sixteen miles from Tapah, on the river of the same name. Being situated in a district largely agricultural, the place has only a small Chinese population, and the Malays are probably of a rather less mixed type than at any other place in the Batang Padang district which

we visited. Through the exertions of the Penghulu (headman of the sub-district), a man of considerable influence among his compatriots and a relation of the Sultan of Perak, we managed to obtain measurements of a considerable number of Malays and of several Sakais, who happened to be visiting the village. In the immediate vicinity the country is mainly arable and orchard land, but at no great distance there are tracts of old jungle. A good many species of birds not elsewhere seen were obtained at Sungkei, including *Treron nipalensis*, *Platymuruus leucopterus*, and a species of *Platylophus*, as well as a new rat, *Mus annandalei*, which is very distinct from any hitherto known from the Peninsula. The situation of the rest-house, near the bank of the river, was very attractive to moths and nocturnal Orthoptera, and a considerable number were captured at light.

We stayed at Sungkei from February 6th to 11th, 1902.

**Tapah.** A considerable town on the Batang Padang river, about six miles from the railroad between Kinta and Telok Anson, the port of South Perak. Until quite recently it was the headquarters of the district magistrate, but has now been superseded by Bidor. As it is the centre of an important mining district, the population is mainly Chinese, but there are also a large number of Klings (Madras Tamils) and Bengalis. The small and mixed Malay population of the neighbourhood is principally settled in surrounding hamlets, not in the town itself.

We stayed in Tapah on several occasions during January and February, but our time was almost entirely occupied in preparations for other journeys, and we did little or no scientific work in the place; two Sakai skeletons were, however, obtained from deserted clearings in the vicinity.

**Telôm.** A dilapidated bungalow in the mountains separating Perak from Pahang, about forty miles from Tapah. Though within the jurisdiction of Perak, Telôm is technically in Pahang, as it is situated three or four miles east of the main watershed, on the headwaters of a small stream running into the Telôm River, which is itself a tributary of the Pahang. The height of our collecting station was between three thousand five hundred and four thousand feet above sea level, but the mountains in the immediate vicinity ran up to over seven thousand feet. The district round Telôm is inhabited by tribes of Sakais, of whom, for a variety of reasons, we were unable to see as much as we desired. A large number of them, however, were met with, a few measurements were taken and a small ethnological collection was obtained from them.

Zoologically, Telôm was quite the most interesting place that we visited, as the fauna was entirely a mountain one, differing in important respects from
that of the surrounding lowlands, and assimilating in many features to that of the Himalayas, and of the mountains of the Greater Sunda Islands. The rainfall must have been extremely heavy, and the jungle was denser than that met with anywhere else in the Peninsula. The trees were loaded with epiphytes of various orders, orchids being especially numerous, though but few were in flower at the time of our visit, and the myrmecophilous fern, Polypodium cornosum, or an allied species, was common. Of other plants, a fine rhododendron with large umbels of salmon pink flowers, a species of violet, which grew in great abundance among the rocks at the edge of the stream, and a Rubras, bearing small, tasteless fruit, may be mentioned. Curiously enough, no species of pitcher plant was observed on the Batang Padang mountains, though several are abundant on the Larut hills and were also found on the Selangor mountains, further to the south. The Sakais form large plantations, some of them over fifty acres in extent, at an altitude of from one thousand five hundred to five thousand feet, in the neighbourhood of Telôm, in which they grow a kind of millet and a coarse tapioca, bananas and rice not flourishing at these altitudes, and their methods of agriculture are very destructive to the jungle, as no more than two or three crops are ever taken from a clearing.

Mammals were scarce, but one species of rat, three squirrels, one of which, Sc. macellandii leucottis, does not seem to occur in the Peninsula except on high ground, and a tree shrew (Tupaia), were obtained, as well as the skulls of a very large bear and of a wild pig, these being purchased from the Sakais. Reptiles and Amphibia were very rare, and no species of Draco, so abundant on Bukit Besar and the Selangor hills, was even seen.

Birds, on the other hand, were abundant both in species and in individuals, though the thickness of the undergrowth and the precipitous nature of the ground rendered collecting very difficult. Flocks of a small babbler (Stachyridiopsis locager?) flitted about the clearing round the bungalow, and were so fearless that it was difficult to get far enough from them to obtain specimens in an undamaged condition. Imperial pigeons (Carpophaga badia) were common on the neighbouring peaks, though we never obtained specimens, and on our downward journey both of us saw several individuals of a dull grey pigeon which Robinson has little doubt was the rare Columba grisea, G. R. Gr., only known with certainty from Borneo and Sumatra. Other species seen but not obtained were Melanocichla peninsulae, afterwards found on Gunong Semangko, Selangor, and a ground thrush that from its strongly hooked beak was probably a Zootbera. Ali, our headman, persisted in saying that he had seen a silver

2. Information regarding the birds of those districts which we visited together is due to my collaborator. N. A.
pheasant on more than one occasion, but we did not come across it ourselves. The most interesting specimen obtained was a small Ploceid belonging to a genus (*Chlorura*) hitherto only known from the mountains of the Sunda Islands and the Phillippine highlands. Altogether, the Batang Padang mountains, which had previously been explored by Mr. L. Wray of the Perak Museum, would undoubtedly yield a rich harvest to any ornithologist who was prepared to stay at elevations exceeding three hundred feet for some considerable time, and who would be content with quality rather than quantity in his collection.

With the exception of butterflies, which were very numerous, and amongst which were several Tenasserim forms and also a fine new *Prioneris*, the insects were not particularly striking, though small and inconspicuous forms were enormously abundant. Among the beetles, red and black Malacoderms of various genera were especially noticeable, while a magnificent new species of the Longicorn *Lysinda*, a moth and several Diptera were evidently members of the same mimetic association. Dragon flies of all families were very scarce, and not more than three species were even observed. The collections of invertebrates, so far as they have been worked out, show that the fauna, as might be expected, is largely made up of species that are also found in Tenasserim on the one hand and the mountains of Borneo and Sumatra on the other, while the Burmese element, which is so marked in the lowland fauna of the Patani States, is almost absent.

We stayed at Telóm from January 16th to 28th, 1902.

**Selangor**

*Kuala Lumpur*. Kuala Lumpur is the capital of the State of Selangor and the administrative centre of the Federated Malay States. While Annandale was in Upper Perak and the Siamese States, I spent some three months in the town, but, with the exception of a few insects captured at light, no collections from this locality are included in the present report. The town is situated in the midst of a thickly populated mining district, and there is no considerable area of jungle nearer than five or six miles. At Batu, about seven miles away, there are large limestone caves similar to those at Biserat, and a few spiders and other Arthropods, including species of *Scutigera*, were collected there, as well as the 'moon snake,' *Coluber taeniurus*.

*Sembangko Pass*. I spent a week in May, 1902, at this locality, which is exceptionally well situated for zoological collecting. It is a rest-house on the border between Selangor and Pahang, on the main watershed of the Peninsula, at a height of two thousand seven hundred feet. On either side the mountains rise steeply to over five thousand feet, and the whole country for miles
around is almost untouched jungle. On Gunong Semangko, to the north of the Pass, an alluvial tin mine has recently been opened, with its main workings situated at a height of over four thousand feet. The path from the trunk road to this mine leads through deep jungle and afforded an admirable collecting ground. Among other vertebrates, a new species of lizard (*Lygosoma miodactylum*) was collected, as well as other forms recently described from the Larut Hills in central Perak, while in birds, specimens of *Cutia cervinicrissa* and *Melanocichla peninsulae*, hitherto only known from the types collected by Mr. Wray in 1887, were secured. Some thirty or forty species of moths were captured at light in the rest-house, and of these some ten or a dozen have been described as new to science by Colonel Swinhoe.¹

Labuansara. A small jungle clearing some eight miles from Kuala Lumpur, inhabited by a tribe of ‘Orang Bukit,’ a people of mixed Sakai stock. We visited them together on two occasions in June, 1902, and obtained a series of the more important physical measurements, as well as a small ethnographical collection. On our way to Labuansara we incidentally captured a specimen of the rare butterfly, *Charaxes durnfordi*, Dist., being the third known specimen of the typical form of the species.

HERBERT C. ROBINSON

Central Perak

My personal knowledge of this part of the state is slight, being confined to a visit to the town of Kuala Kangsar and a drive thence to Upper Perak. There appears to be a considerable amount of cultivated land in the districts of Kuala Kangsar and Krian, and not much mining, so that the population has a larger element of indigenous Malay blood than in Batang Padang. Much of the country, however, especially towards the main range, has never been cleared, still supporting the jungle tribes, who, in this region, from what we could hear, are very largely of a mixed Semang stock.

Kuala Kangsar. An important Malay centre in Perak, being the residence of the Malay sultan. The town, which is on the railway, is small, but well laid out. The Malays here take their share in petty commerce, having many shops of their own, though even in Kuala Kangsar the majority of the larger stores are in the hands of Chinamen or Bengalis. From what I saw, I am certain that even the Malay of this district is not a homogeneous type, having probably absorbed a deal of Arab or bastard Arab blood.

I spent four days in Kuala Kangsar in March, 1902, and obtained a series of photographs of native-born Malays.

NELSON ANNANDALE
Upper Perak

The district of Upper Perak, including the 'New Territory,' which was ceded or restored by the Siamese in 1899, occupies a considerable area, but is mainly covered with jungle, there being very little cultivated land and few or no mines, though deposits of gold are said to exist at Berusong, on the Temongoh River. The settled population is small, being centred in the villages of Lenggong, Grit, and Temongoh, or scattered in small clearings on the banks of the Perak River, which here forms a very important ethnological barrier. The jungle tribes living north of it have no settled place of abode or permanent dwellings, while the hill clans to the south make large plantations, which keep them in the same place, at any rate for a time, and there is a marked difference between the Malays of the two regions thus naturally separated; there is said also to be a difference in the gibbons' found on the two banks, but this question has not been properly investigated. I spent a month (March 18th to April 18th, 1902) in Upper Perak, doing very little but anthropological work, except to collect some butterflies.

Grit. The most important place in the New Territory, being situated only a few miles from the Rhaman border, at a point where large numbers of cattle are brought over into Perak. Formerly the village consisted of a collection of rather small Malay houses, but since 1899 a new settlement, with Chinese stores and government plank buildings, has come into being on the opposite side of the Grit River, a small tributary of the Perak. There is now a school for Malay boys at the place, and the district magistrate has a bungalow, which he frequently visits. The Malays of the place and of the surrounding hamlets are of a somewhat different type both from those of Kuala Kangsar and those of the East Coast States, having shorter faces, rather shorter heads, a slightly greater stature, straight hair, and clear yellowish complexions. Many Semangs inhabit the neighbouring jungle, coming regularly into the village to obtain tobacco and the like in exchange for jungle produce. Immediately round the houses the land has been cleared, and there are large wet rice-fields; many patches of secondary jungle and of grassy savannah exist in the vicinity, though most of the jungle is evidently old. The high woods abound in game birds, such as the fire-back pheasant, Lophnia ignita, and the long-beaked partridge, Rbizothera longirostris; and the butterfly, Melanocyma faunula, a very local form, is common. In comparatively open places in the jungle I found other species, such as Papilio megarus, P. antiphates, Appias nero, enormously prolific in individuals; but the scarcity of Danaids was noteworthy.

I stayed at Grit from March 21st to April 3rd, 1902, and obtained there a considerable series of photographs, specimens (including a skeleton), and measurements illustrating the anthropology of the Semangs, and also a collection of the butterflies typical of the district, which differed considerably in its Rhopaloceran fauna from any we had visited, approaching the Jalor-Rhaman border most closely in this respect.

Janing. The government headquarters in Upper Perak at the time of my visit were here, though possibly they may have been moved elsewhere by this date. The place, situated on the Perak River, was very largely of European origin, and consists principally of government buildings and Chinese shops. The district magistrate, who until recently was the only European in the district, has an extremely comfortable house, with a large garden. The members of the Semang camps in the neighbourhood visit Janing regularly, where, it is said, they often get drunk. Rogue elephants have frequently broken down the telephone poles on the road between this place and Lenggong, and my men declared that one had attacked them as they loitered by the roadside behind my bullock cart. The road is not metalled, but is sufficiently good in dry weather to permit the passage of a gharry, or one-horse carriage. There is a good jungle-track, along which I walked twice, between Janing and Grit—a distance of about twenty-two miles. I stayed at Janing for a night or two on two occasions in March and April, 1902.

Lenggong. This is really the biggest and most important place in Upper Perak, but it has an unfortunate reputation for gang robberies. The Malays here chiefly claim descent from Rhaman or Kedah, but have a fabric of pottery that appears to belong to the characteristic Perak type. There are Klings, Chinamen, and other Oriental foreigners in the village, which is a model of orderliness and respectability, as far as outward appearances go, as compared with the dirty little mining centres of Batang Padang; a fine rest-house, a hospital, and a school have a wonderfully civilized aspect. Janing is thirty-two miles distant from Kuala Kangsar, and the road is well metalled and in good condition, there being no government railway to compete with it. I left Kuala Kangsar by gharry at daybreak, and reached Lenggong in time for lunch, staying there for a night on my way to Janing, which is about twenty-six miles further on.

Temonggob. The only other village but Grit of any importance in the New Territory, being in the centre of a region occupied by numbers of jungle folk, who bring in the rattans and other natural produce they collect. The inhabitants of the village are Malays, evidently with a considerable admixture of native blood in their veins, and a Chinese store has lately been set up.

Two separate tribes inhabit the neighbouring jungle, one living near the village, in subjection to the Malays, the other leading an independent existence on the hills, where they make large clearings for the cultivation of tapioca, yams, bananas, and millet—rice they refuse to eat. These two tribes, however, do not appear to be racially distinct from one another; we have called them ‘Sakais’ in the text, but it is evident, I think, that they are merely Semangs with some Malay blood in their ancestry, so that the term ‘bastard Semangs,’ which is used on the map, defines them more clearly. I reached Temonggoh on foot from Grit; the journey, along a very bad elephant track for the greater part of the way, should only have taken two days, but my guide lost the way, and I only discovered that we were travelling in a circle by noticing a hornbill’s feather on the ground beside a tree trunk, where I remembered seeing it before, so that we were obliged to spend two nights in the jungle. On this journey I was very much struck by the variety of frogs and toads in the old jungle, where I noted eight species in one day, and also by the sounds produced by stridulating insects at night and by small birds early in the morning; indeed, the fauna of the tree-tops appeared to be richer than in any locality where we made zoological collections.

I stayed at Temonggoh for four days in April, 1902, obtaining some photographs, anthropological measurements, and ethnographical specimens, as well as four skulls of one of the jungle tribes, known as Sakai Jehehr.

NELSON ANNANDALE
PART II. SENGGORA, PATALUNG, AND TRANG

Senggora

The state of Senggora, called Sun-kra or Sun-kla by the Siamese, has, if the districts of Tibaw and Chenaw be included, an area rather greater than that of Rhaman (q.v.). Of Tibaw and Chenaw very little is known, our own experience consisting merely of two days' hasty march along the coast; they seem to be sparsely populated in the interior, and to consist chiefly of jungle country. Senggora proper, on the other hand, has mostly been cleared, where the ground is not too barren to render clearing a work of supererogation, and it is doubtful whether any old jungle now remains within the district. The coast land of all three districts resembles that of the Patani States, but it is obvious that the sea is here rapidly eating into the land, as we saw many Casuarina trees that had been undermined by the waves and had fallen on the beach. A remarkable feature of the vegetation along this coast, especially in the immediate vicinity of Senggora town, is the abundance of certain myrmecophilous plants; in some places there is hardly a tree other than a Casuarina—for the Casuarina harbours few epiphytes or creepers—but gives support to one or more plants of a Discidia, which we found also growing on the same stump as a species of Myrmecodia, or an allied genus. We noticed, however, that the modified leaves of the Discidia were very liable to have holes eaten in them by some insect or mollusc, and that the ones so injured, which permitted water to enter their cavities, were not frequented by ants; the species inhabiting the bulbous stem of the Myrmecodia was not the same as that which lived in the leaves of the Discidia that grew a few inches away. On our walk along the shore from the mouth of the Tibaw River to Senggora town, we saw several sea snakes (Hydrophinae) which had been buffeted in the tremendous surf, which broke all along the coast, and cast ashore; they were evidently in a very vicious condition, attempting to bite any object thrust in their way. We were obliged to travel very light, and accomplished the journey from Kampong Anak Bukit, in Nawngchik, to Senggora in three days, although the foot track between the former village and the Tibaw River was almost entirely submerged, owing to the heavy rains which had fallen—it was December—and although the sand of the seashore, to which we took in order to avoid the floods, provided very heavy going. It is doubtful whether we could have moved with anything like the same rapidity, had we not gone barefoot, clad in the lightest of Chinese clothing, which the wind dried almost as soon as the rain had soaked it.
Kuala Zircom. A small Malay fishing village, at the mouth of the Chenaw River, where we spent a night on our way to Senggora. Near Kuala Zircom we entered a curious encampment, the huts in which were roughly built on the ground of slabs of bark. The people who occupied it were Malays, who said that they had never heard of white men, and asked whether white men were like Malays, i.e., were Mahommedans. After we had warmed ourselves over a fire in one of the huts, and had grown more friendly with its inhabitants, who were very curious to know what manner of men we were, they told us that they were all just recovering from smallpox, and that the people of the village had driven them out of it. Little pieces of white bark, displayed on sticks at the Zircom side of the camp, were a sign that no one coming from that quarter might approach it, but no objection was made to us proceeding on our way in the opposite direction.

Senggora. The town of Senggora is externally a Chinese city, surrounded with a high castellated wall, and formerly closed at nights by heavy gates, which are now fixed permanently open to admit the entry of telephone and telegraph wires. The principal buildings also are Chinese, except some of the many Buddhist monasteries, whose high-gabled roofs appear amidst the foliage of the trees with the softest of mellow orange-brown, dull copper-green, and emerald-green tiles; they are built in the true Siamese style of architecture, which is founded on the Chinese, but is less solid and even more fantastic. The population, a large proportion of the Buddhist part of which must be in celibate orders, is partly Chinese, partly Siamese, and partly Malay, but the Siamese official element is large, as Senggora is the centre of the administration of all the country between Kelantan and Ligor, and the Malays, who retain el Islam, have mostly foregone their proper language in favour of Siamese. Indeed, we found that English carried us further than Malay in the town, for many of the officials could speak English well, though there are no pure bred Europeans resident in the state. Across the straits from the modern town, which has been built by former Chinese governors on the south bank of the entrance to the Taleh Sap, lies old Senggora, now chiefly occupied by Malays, the descendants of prisoners of war brought from Kedah two generations ago. These people occupy themselves in fishing, and the size of their families is so notorious that childless Siamese women in the town procure all their drinking water from a well in one of the Malay villages, attributing the fecundity of its inhabitants to this source. The Malays have also, in the vicinity, several villages entirely to themselves in which the houses are erected partly on dry land and partly on piles in the lake, so that they can draw up their dug-outs directly from the surface and suspend them beneath the platform on
which their dwelling-rooms are built. Altogether, the environs of Senggora offer a strange study in contrasts; for while phonographs and acetylene bicycle lamps are on sale in several of the Chinese shops in the town, real lake dwellings are in actual occupation within a mile or two. The town market dues are very heavy in Senggora, and a most irksome regulation was made at the beginning of 1902, forbidding women to carry on their heads, in the immemorial manner, anything intended for sale within the walls, the reason being that all such goods must be inspected by the police, who objected to pry too closely into things which had been sanctified by being placed on the head of a human being.

We spent ten days in Senggora in December, 1901, recruiting our health and preparing for a journey to Kedah, and one of us returned for another short visit at the end of the spring of 1902. A few spiders and one or two ethnographical specimens were all that we collected here, but on both occasions we thoroughly appreciated the kind hospitality of His Excellency the Siamese High Commissioner.

**Patalung**

This state, the south of which marches with Senggora, the west with Trang and other West Coast States, and the north with Ligor, or Nakawn Sitamarat, is thickly populated in the neighbourhood of the Taleh Sap, but there appear to be only scattered villages in the interior, where considerable numbers of Semangs probably still exist in the jungle. The country is flat near the coast, but dotted over with limestone peaks, and the central range sends down low spurs to within a few miles of the lake. I travelled by boat from Senggora to Lampam in May, 1902, and from Lampam overland to Trang.

**Lampam.** This place, the capital of Patalung (Muang Talun in Siamese), is a neat little Siamese town, with handsome government offices, a fine temple, and a curious shrine in which crocodile skulls are reverenced. The population consists of Siamese, a few Chinamen and a considerable number of half-castes, the children of Chinese fathers and Siamese mothers. These people, who in the Patani States are confused with the race of their fathers, are here recognized as a class apart, wearing their hair hanging on the shoulders, but not in a queue; they are called Baba. The country all round Lampam is very highly cultivated, chiefly by Siamese, who have evidently a full share of Semang blood in their veins, and, to a less extent, by Malays, who dress and speak like their neighbours, though they live in their own villages and cling to the Mahommedan religion. The land is very fertile, producing two crops of rice in a year, and

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1. It is the pointed conical form of some of these peaks which is believed to give the medicine-men of Patalung such great magical power (Cf. Fascic. Malay.—Anthropology, part I, p. 60).
the orchards of the district are famous throughout Lower Siam. The journey from Senggora to Lampam can be done in a day by boat, if there is no wind, and if sufficient boatmen be employed, but it took me two days and part of a night, owing to the choppy character of the waves in May. I spent two nights at Lampam, waiting for an elephant to take my baggage to Trang, and there procured the skeleton of a Siamese child. I also noted a curious insect that I had taken at the same place in 1889, namely, an aquatic glow-worm (apparently the larva of some Malacoderm beetle), which is common in the swamps round the town.

The Taleh Sap. This extraordinary lake, known to the Malays as Laut Dalam (the Inner Sea), is nearly fifty miles long and of very variable breadth, but not, save for a few deep pockets, more than a few feet deep. To the south it communicates freely with the sea, and a canal has been cut between a point near its northern limit and the coast, though there does not appear to exist any such natural channel as that marked on many maps, which very possibly, however, has recently disappeared. Another artificial channel, known as Klong Sukhum, in honour of Phya Sukhum, the Siamese High Commissioner, who directed its construction, now joins the Taleh Sap to the Ligor River. The waters of the lake, at any rate in December, March, April, and May, are only slightly brackish, though the tides are felt in the Lampam River. The islands with which it is dotted are either low and marshy or consist of limestone peaks rising abruptly from the water. The latter afford in the caves with which they are riddled a breeding-place for Collocalia innominata, the edible nests of which are extremely valuable, while the reed-beds round the other islands and along the shore shelter innumerable water-fowl, especially the cotton teal, Nettapus coromandelianus, and the tree-duck, Dendrocygna javanica, which is generally called a teal in the Straits. There is a small cetacean, probably a species of Platanista, in the lake, and a viviparous sting-ray is caught off Lampam, where sharks are said also to occur. The centre appears to be almost devoid of animal and vegetable life, though a few minute worms were taken by Mr. Richard Evans and myself in 1899; but beds of Potamogeton and other water-weeds at the mouth of the Lampam River have evidently a very rich insect and crustacean fauna, while the fish from the same locality are partly marine and partly freshwater forms. The marine or lacustrine zoologist who was willing to be satisfied with minute and inconspicuous specimens would find a most interesting hunting-ground in this lake and its northern adjunct, the Taleh Noi, and although the people who inhabit the shores have an unenviable reputation among the Malays and Siamese, I never experienced anything but courtesy from them.

NELSON ANNANDALE
Trang

This state marches with Patalung on the east and reaches the sea on the west, including within its jurisdiction a number of islands which the native Mahommedans regard as appertaining to the sultanate of Kedah. The interior of Trang, where Semangs are said to have been formerly numerous, is occupied partly by Siamese rice cultivators and partly by Chinese pepper planters, but the coast people are either Mahommedan, Samsams, or pagan Orang Laut. The road from Lampam, a good sandy track recently set in order, passes through little but cultivated ground between the base of the western slope of the main range, which reaches an altitude of several thousand feet at this point, and the large market town of Tap-tien, formerly the capital of Trang, from which I proceeded by boat to Kantang, the whole journey taking three days. The banks of the Trang River are here densely wooded, but the jungle has a peculiar character, due to its estuarine nature at a considerable distance from the sea, for, even as high as Tap-tien, there are a number of small floating islands, composed of the roots of nipa palms with other vegetation entangled among them, which float up stream with every tide. In the neighbourhood of Kantang this palm is largely cultivated for the sake of its sap, out of which sugar is made, and of its young leaves, which serve in place of cigarette papers.

Chau Mai. A place on the coast, a few miles north of the estuary of the Trang River. Formerly the limestone cliffs at this place, and the caves which they contain, were regarded as sacred by the Orang Laut, who deposited their dead in the latter, but Chinese pepper planters, searching for bats’-dung guano, have dispelled the sacred influences. The character of the vegetation on this coast is strikingly varied, for immediately along the shore there is usually a belt of casuarina trees, and behind them there are vast tangled mangrove creeks, the trees of which give support to many orchids and other epiphytes, while the characteristic flora of the cliffs resemble that on the limestone islands of the Taleh Sap, having as its most conspicuous member a large candelabra-like euphorbia. I saw among these cliffs a land crab some six or eight inches across the carapace; it appeared to be one of the *Oxypodidae*, which has ventured further from the sea than many of the species of this family are in the habit of doing, but my men unfortunately left a specimen which I had obtained behind. The duck, *Asarcornis scutellata*, so scarce in collections, appears to be common on the Trang coast, going inland every evening and passing in numbers over the town of Kantang.

Kantang. The new capital of Trang, founded about ten years ago by the Chinese hereditary governor, who has now been promoted to the high

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1. The 'Skeat' specimen was procured by myself in the interior of Patalung, and the note on my label gave the statement that the species was migratory as a native belief (Cf. Bonhote, *P.Z.S.*, 1901, Vol. I, p. 85).
commissionership of the 'circle' of which Trang forms a part. To the ethnologists and naturalist Kantang is not a place of any interest, except, perhaps, as regards the butterflies common in its vicinity, which struck me as being different from those seen elsewhere. The town consists chiefly of government offices and elegant villas, in which the officials live, and it is far more modern in all essentials than any place on the East Coast which we visited. I was obliged to wait at Kantang for some days to get a boat to take me to the coast, and again to catch the steamer for Penang, and during my stay was much indebted to the kind offices of Mr. A. Steffen, a German engineer in the employ of the Siamese Government, the native officials' being here suspicious of me. From Mr. Steffen I procured some valuable ethnographical and antiquarian specimens.

Ban Phra Muang. A large 'Malay,' or, more accurately, Samsam, village at the mouth of the Trang River. I spent several days there in May, 1902, obtaining some ethnographical specimens and a series of anthropometrical data. The people, who call themselves Malays, are recognized as Samsams by their neighbours, that is to say, as being of mixed Malay and Siamese origin. They speak a dialect of Siamese mixed with Malay words and phrases, and resemble the Malays of Upper Perak in appearance.

Pulau Mentia. A little island lying off the Trang coast. Part of it is high, and there edible birds' nests are collected. The part facing the coast, however, is flat, with the most beautiful white sand, and is occupied for part of the year by a Samsam community which has its permanent village some distance up the Chau Mai River. A family of Orang Laut Kappir were also encamped on the island at the time of my visit. The fauna between tide-marks was very varied, owing to a plentiful growth of sea grass (Zostera), among which Holothurians, some of which were captured as trepang, were particularly numerous, while the 'pearl oyster,' Arenga magaritifera, or an allied species, was taken in great numbers from the sand, rather as an article of diet than for its pearls, a few of which were, however, collected. A Sipunculid worm, Phymosoma japonicum in all probability, was dug out from the sand and eaten by the Samsams, as well as several bivalves and a lantern shell (Lingula). On Pulau Mentia, where I was only able to spend one night, I obtained two skulls, which I believe to be those of Samsams.

Pulau Telibun. This island is partly the delta of the Trang River, but has also a limestone basis. It is densely wooded except along the coast opposite the mouth of the river, where it has a muddy shore, in which a variety of

1. The High Commissioner at Sengora had given me a letter of introduction, of course written in Siamese, to the Governor of Trang, and in this letter it was stated that I had come 'to inspect knowledge,' so that I was naturally regarded as some new kind of spy.
molluscs, crustaceans, and coelenterates abound. When the tide goes out, the whole shore becomes covered in a moment with vast numbers of little pinkish crabs, resembling the Australian genus *Mycteris*; they are perpetually on the move, not infrequently walking right across the discs of gigantic mud-coloured sea anemones, which remain expanded, but very inconspicuous, in little pools caused by the tide swirling round their bases. Hundreds of the crabs cling to their tentacles, but the rest proceed on their way, without apparently learning by experience to avoid them. A Patani man, who accompanied me, and who had never seen so many crabs together, exclaimed when I pointed them out to him, ‘What a fine relish they would make!’ and rushed forward to capture them, but they sank instantaneously into the sand. I spent several days on Pulau Mentia, staying in the Siamese revenue station recently established on the island, and obtained some interesting musical instruments and other specimens from a Samsam camp, where I also measured a few of the men.

NELSON ANNANDALE
PART III. THE PATANI STATES AND KEDAH

Rhaman

Rhaman is the largest of the seven Patani States, bordering on the north with Tibaw, Jalar, Patani, Jhering, and Telubin; on the west with Kedah; on the east with Kelantan, Legeh, and Telubin; and on the south with Perak. We spent a few days at Ban Kassot on the Jalar border in 1901, and I made a hasty journey from Upper Perak to Patani through Rhaman in April, 1902, so that our acquaintance with this state is comparatively slight. Kota Bharu, the capital, we did not visit, but I was there in 1899; it is a small and unimportant village, not situated on any navigable river, and therefore only of note as a centre of the cattle trade between the East Coast and Perak.

Only a small proportion of Rhaman is under cultivation, the rest being buried, for the most part, in dense jungle, and only a few unimportant tin mines, all worked by Chinamen, now existing, though there are said to be rich mineral deposits. The district between Jarum and the Perak border, however, is an undulating savannah, covered with long buffalo grass, but intersected with many streams, the banks of which are thickly wooded and give shelter to numerous birds and to several of the scarcer jungle butterflies and dragon flies, such as *Kallima buxtoni* and a fine species of *Gomphus*, in comparatively large numbers.

The following villages were visited on my journey:—

*Betong.* Now the Siamese headquarters in the Hulu Rhaman district, which is often known as Neg’ri Jarum. Betong is a large and flourishing Malay village, evidently, from the size of the fruit trees, and the enormous masses of orchids upon them, of considerable age; the only non-indigenous inhabitants being a few Siamese officials and police and a couple of Chinese traders. The prevailing type of Malay is that noted at Grit, and a Semang tribe has its hunting grounds in the neighbourhood. The village fauna is that characteristic of the central region of the Peninsula, the common squirrel being *Sciurus vittatus*, not *Sc. concolor* or *Sc. caniceps*. The savannah near is said to be inhabited by large herds of Sladang (*Bos gaur*) and Sapi (*Bos sondaicus*?), with possibly a third species (*Bos frontalis*?); but the habits of these wild cattle, if what was told me is true, differ from those of jungle individuals, for the former are said to be mild and inoffensive, while the latter are notoriously savage. The jungle fowl (*Gallus gallus*) is very abundant, and the cocks frequently come into the village and interbreed with the tame poultry. The domestic cattle

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1. The hunting dog (*Canis aureus*) is also comparatively common in this district, and also, very possibly—in my opinion, probably—a species of jackal.
are chiefly of the ‘Siamese’ breed; but zebu blood has been lately introduced, and many buffaloes are kept.

The journey from the Perak border to Betong took me three days on foot, but could have easily been accomplished in two, had it not been for the state of the track between Grit and Krunei—a regular slough of despond, churned into mud, and rendered filthy beyond description by the passage of cattle from the Patani States to Perak, and of elephants in both directions. It appeared to swarm with a parasite (possibly a Nematode allied to Strongyloides intestinalis), which penetrated the skin of the feet, especially between the toes, and caused extreme irritation and discomfort. We had experienced the same pest in places on Bukit Besar where elephants had been, and the Malays say, probably with truth, that it originates in elephants’ dung. I found the only way to obtain even comparative immunity from it was to walk barefoot and to wash my feet very carefully at every stream we crossed, as footgear of any kind, which, at any rate, the tenacity of the mud rendered irksome, appeared to harbour the parasite, which it was difficult to eliminate.

Jarum. A smaller Malay village, some six miles north-west of Betong, and probably at one time a more important place than at present. It still contains a residence of the Raja of Rhaman—a miserably dark and dirty old house, swarming with parasitic Acari, which are said to come from the goats stabled under it, sand flies and mosquitoes, especially Anopheles, which breed in enormous numbers in puddles of filth in the village, and which are the probable cause of the great prevalence of malaria in the neighbourhood. I stayed here for some days in April, 1902, waiting for an elephant to carry my luggage to the Patani River, and obtained a few butterflies and ethnographical specimens, but only caught a glimpse of the Semang tribe whose Malay master is the headman of the village.

Krunei. A straggling village, wholly Malay, close to the Perak border, which is here marked by a small cairn of stones standing at the edge of a pool called Lubong Gajah Puteh, or the pool of the white elephant. The chief of the Semang tribe whose Malay master lives at Krunei has obtained the right from a former raja to call himself Penglima Sakai; he and his followers acted as my porters for a short distance, and I did not stay at Krunei because he told me that he owed five dollars to a Malay and was afraid to enter the village. I spent the night at Kampong Jong (not the one marked on the map), a mile or two distant; it was evidently a place of recent foundation, as the fruit trees were just beginning to bear for the first

1. Fascic. Malay.—Zoology, vol. 1, p. 44.
2. See Dr. Paul Van Durme’s Embryons de Strongyloides intestinalis, University Press of Liverpool, 1903
time. The headman, in whose house I stayed, told me that his people had come from a place called Kampong Lalang, the ruins of which I passed the next day a few miles to the north-west. It was interesting to notice that the crow (Corvus enca (?)), which in the Malay Peninsula is rarely found at any distance from human dwellings, still haunted the site of this and other deserted villages that I passed in this tract of country.

_Ban Maiwas._ A small Siamese village near the point where the Maiwas River enters the Patani. Judging from the curly hair and dark complexions of many of the people, they have absorbed a considerable proportion of Semang blood, and they call the Semang tribe of the neighbouring jungle 'Sakai Perak,' saying that the jungle men have only recently come from over the border. It is probable, from the age of the fruit trees and from what we know of the Siamese invasions of this part of the Malay Peninsula, that the inhabitants of Ban Maiwas represent a comparatively recent Siamese settlement, which has intermarried to a great extent with the aboriginal inhabitants of the country, and, therefore, it is worthy to note, that while a large proportion of the population approximate to the aboriginal type, a minority appear to have the characters usually associated with purer Siamese blood than that habitually found in the Patani States, having clear yellow skins, straight hair, and somewhat Mongoloid features.

From a zoological point of view, Ban Maiwas is interesting, as being the village furthest west in this latitude in which I found the common village squirrel to belong to the _Sciurus concolor_ type. The fauna in the neighbouring jungle seemed to be very rich, and at one point I found the cast pupal skins of _Flata limbata_, the Chinese wax insect, or an allied species, covering the leaves of a shrub in enormous numbers, while the moth-like adults of the same species clung to tree trunks in the vicinity, having much the appearance of a fungus that grows in the same situation.

The journey from Betong to Ban Maiwas took me three days, though the distance is short in a straight line. Several steep spurs had to be surmounted, and the track crossed and re-crossed the Patani River in such a way that the stream had to be forded fourteen times in the course of one morning; though the water was low, I had to swim at one ford. At Maiwas, owing to the kindness of the district magistrate at Betong, a well educated Bangkok Malay, who entertained me most hospitably, rafts were waiting to take me to Bendang Stah, another journey of three days, and from there to Patani, three days more. On the way I was able to obtain some interesting information regarding the popular religion of the people of the district from my raftsmen, especially about the cult, common to Mahommedans and Buddhists, of 'Joh Ni' a late raja of Rhaman.

NELSON ANNANDALE
Patani

Of late years much confusion has arisen from the very varied meaning given in the Straits, in Europe, and in Siam to the term, 'Patani,' and it may, therefore, be well before commencing a description of the country in which the greater part of our time was spent, which was the original goal of our expedition, to explain the three different senses in which this term is used.

1. Until about a century and a half ago the kingdom of Patani, which was frequently governed by a female sovereign, appears to have been one of the largest and most powerful in Malaya, exceeding the modern states of Perak, Pahang, or Kelantan in size. It comprised the whole watershed of the Patani and Telubin Rivers, a part of the Upper Perak valley, and probably some of the northern tributaries of the Kelantan; but very possibly it consisted rather of a confederation of petty native rajas under a powerful chief than of a single state, and Malay domination may never have extended much north of the Patani River, except immediately along the coast.

At the end of the eighteenth and the commencement of the nineteenth century the Siamese finally conquered the country, which had long owed them a feebly defined and easily broken allegiance; and 'Patani' was divided into seven minor states, each independent of its neighbours, and each under a Siamese nominee, who was in some cases a Malay and in some a Siamese. It is from these Siamese governors, who were tributary to the Chinese governor of Senggora, himself a vassal of Siam, that the present Malay rajas of the seven states are descended. The names of the seven states are Nawngchik or Tojan, Patani or Tani, Jhering, and Sai or Telubin, along the coast; and Jalor or Yala, Rhaman, and Ra-nge or Legeh, in the interior. During the greater part of our visit their local administration was kept separate, each state being under a Malay raja nominally and a Siamese governor or commissioner practically, except Nawngchik, the governors of which never became Mahommedans and which was entirely under Siamese rule. In 1902, however, the seven states were reunited, with the title of the Division of the Seven Provinces, under a commissioner resident in Patani town but responsible to the High Commissioner of the Ligor Circle, who resides at Senggora.

The term 'Patani' is usually held in the Straits to include these seven provinces, which are indicated when we talk of the 'Patani States.' We are indebted to the High Commissioner of the Ligor Circle for the following particulars regarding their population and that of the neighbouring states. His Excellency regards the figures as substantially correct, and if they are only moderately accurate, the curious and unexpected fact is shown that, even including the nominally independent principality of Johor, there are more Malays under Siamese than under British rule in the Malay Peninsula.
Population of Monthon Nakon Sri Thamarat (Ligor Circle).

'The following figures are from the census, and may, therefore, be taken as accurate:

<table>
<thead>
<tr>
<th>Province</th>
<th>Siamese</th>
<th>Chinese</th>
<th>Malays</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ligor (Nakon Sri Thamarat)</td>
<td>130,034</td>
<td>32,439</td>
<td>32,580</td>
<td>195,053</td>
</tr>
<tr>
<td>Senggora</td>
<td>78,307</td>
<td>31,323</td>
<td>15,662</td>
<td>125,292</td>
</tr>
<tr>
<td>Patalung</td>
<td>45,635</td>
<td>3,563</td>
<td>5,563</td>
<td>54,761</td>
</tr>
<tr>
<td>Division of the Seven Provinces</td>
<td>39,563</td>
<td>19,780</td>
<td>138,466</td>
<td>197,809</td>
</tr>
</tbody>
</table>

The following figures for Kelantan and Trengganu are only approximate, as no census has been taken:

Kelantan has about 250,000 inhabitants, of whom about 20,000 are Siamese, 15,000 Chinese, and the rest Malays.

Trengganu has about 120,000 inhabitants, of whom very few are Siamese; there are about 1,000 Chinese, and the rest are Malays.

There are no Europeans, and few Indians or Arabs, resident in the Patani States, Senggora, or Patalung.

2. The modern state of Patani, or, as the Siamese call it, Tani, is a small strip of territory, with a coast line less than ten miles long and a length of rather over twenty miles, the northern part of which extends on both sides of the Patani River, while the southern half is bounded by it to the west. Except in the immediate vicinity of the coast, where the soil is sandy and barren and supports large open woods of casuarina trees, the country is well cultivated, under artificial irrigation, and supports a population probably as dense as that of any part of the Malay Peninsula which is not occupied by tin miners. There is little or no old jungle left in the state.

3. Patani town, locally known as Kuala Bukar, is the most important place in the Division of the Seven Provinces, both as the seat of government and as the only port with a reasonably safe anchorage between Kuala Kelantan and Senggora. Patani Roads, indeed, enjoyed considerable reputation among the old voyagers, and formed a nucleus for the trade of 'Further India' in the seventeenth century, at which date there was a factory of the East India Company at Patani; but nowadays, at any rate, anchorage is only possible in them from March to October, and they are so shallow that vessels drawing more than twelve feet must anchor over two miles from the mouth of the river, which is blocked by a bar rarely covered with more than four feet of water.
The town was situated, in 1901, on the east bank of the stream, about a mile and a half from the sea, but in the course of its history it has frequently been moved from one bank to the other, and in the summer of 1902 preparations were being made to build a new town across the stream. It is divided into two quarters, one occupied by Mahommedans, the other by Chinamen and Siamese, and the government buildings, consisting of a post and telegraph office, a police station, and the commissioner's residence, are situated between them on the river bank. Here also are the buildings of a Siamese waṭ, or monastery (almost the only solid buildings in the place except the mosque in the Malay quarter); they are surrounded by a balustraded wall with ornate gateways in Chinese style, and separated by a row of fine sugar palms from the river, over which a gorgeously painted and gilded guest-house has lately been built.

The Chinese quarter, in which the greater part of the local trade is conducted, contains numerous large houses of brick and rubble, and in its shops articles of European manufacture, such as crockery, hardware, cotton goods, and a limited selection of tinned provisions, can be bought at prices but little in excess of those current in the Singapore bazaars. Much of the purchasing, however, is carried on by means of little perforated pewter coins of Malay manufacture, and only current in the state of Patani, of which eight hundred go to the Straits dollar.

The Malay quarter, in which we rented a house during six months of our stay in the Patani States, is much less pretentious, and also less odorous, than the Chinese, consisting chiefly of a few large compounds belonging to the raja and other wealthy Mahommedans, and a street of small houses with open booths in front of them. This street leads from the raja's compound, in the open space in front of which a daily market is held, to a landing stage on the river, and in the opposite direction the town gradually merges into the cluster of hamlets which surround it, large open spaces being left for the cemetery and for cultivation. Two broad sandy roads, excellent except for their heat in dry weather, lead to Jambu and to the sea from the Malay quarter.

When we talk of 'Patani,' we refer to the town, unless it is otherwise stated or inferred.

The trade of Patani is probably less extensive than it was even at the middle of last century, and is carried on, as far as imports are concerned, almost exclusively with Singapore. A certain amount of jungle produce and a small quantity of inferior tin are brought down from the interior, and silk garments, woven in the town, are exported to Kelantan and Trengganu, being of better quality than the rather shoddy goods manufactured in these places; but the staple industries are the curing of salt-fish and the manufacture of salt in brine.
pits on the coast. The crude salt is carried, chiefly to Kelantan but also to Trengganu and Senggara, in flat-bottomed sailing barges of five or six tons burden. A steamer called about once in five weeks on its way to Singapore, and as often on its way to Bangkok, during the first half of 1901, but it was discontinued later, and we are not aware in what way communication of the kind is now kept up.

Leaving Chinamen out of account, the population of Patani town is chiefly Malay, and those Siamese who live there belong largely to the official class and are not natives of Lower Siam. The Chinamen, however, have a large proportion of Siamese blood in their veins, and it is probable that half of them are really half-breeds. There must have been a considerable Bugis element at one time, and Anderson\(^1\) states that in the seventeenth century there were many Japanese traders settled at Patani. When we reached Patani most of the shops in the Malay quarter were in the hands of Malays, but later in the same year a sudden irruption of Arabs and Tamils took place, who occupied many of them. The immigrants apparently came from Singapore. It is difficult to estimate the population of the town with any approach to accuracy, but, excluding the surrounding hamlets, it may reach the total of about five thousand, while the remainder of the state probably supports five or six times that number of people.

During the nine months of our stay in the Patani States (April to December, 1901), Patani was practically our headquarters, and we spent, in the aggregate, many weeks in the town, to which one of us returned for a brief visit in May, 1902. We collected a considerable proportion of our ethnographical collection here, and one of us conducted investigations, with interesting results, into the customs and beliefs of the fishermen.\(^2\)

Our zoological work at Patani was chiefly marine, and in Patani Bay we obtained several species of sea-snake, including the anomalous *Thalassophis annandalei*, only known from this locality, and the rare *Distira wrayi*. We also took surface tow-nettings at different hours of the day and night, and Mr. Andrew Scott tells us that they include representatives of a new family of Copepoda. The ‘porter’ crab, *Dorippe facchina*, which lies in the mud clasping a sea anemone to its back by means of modified ambulatory claws, was taken in shallow water, and we noted that a specimen from which the anemone had been forcibly removed seized hold of a Rhizostomous medusa, which had been accidentally placed in a jar with it, and carried it in the same position. When the anemone from another individual was placed in the jar, the crab dropped the medusa and snatched up the anemone.

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Jual. A large Malay fishing village on the east bank of the Patani River at its mouth. We obtained some specimens of fishing apparatus there.

Kampong Uban Tras. A Malay village, some eighteen miles above Patani, where one of us collected some zoological specimens.

Jalor

The state of Jalor has an area about three times greater than that of Patani, from the northern third of which it is separated by the Patani River. The Patani River also separates it to the east from Rahanan, which bends round to the south so as to march with it on this border too; it marches with Tibaw to the west, and with Nawngchik to the north. The revenue of the state, owing largely to the amount of opium consumed in it, is larger than that of any other of the Seven Provinces, or, as the Malays call them, the ‘Seven Fruit of Countries’ (Tujoh Buab Neg’ri). The northern half is rather thickly populated, partly by Malays and partly by Siamese; that is to say, by Mahommedans and by Buddhists, for we can find very little difference, except that of religion, between the two peoples in Jalor. South of Petai there is much primaeval jungle, and the tin mines, which are the largest in the Division, occupy only a small area, being, compared to those of South Perak, small and unproductive. A considerable proportion of our time was spent in Jalor, and we made two journeys through the southern half of the state to the Rahanan border or its vicinity.

Biserat. Biserat, which is known to the Siamese as Ta Sap, has been the Siamese headquarters in Jalor for some years, and the Malay Raja, whose residence is at Kampong Jalor, some miles away from the river, has lately been persuaded to take up his abode in a house on the outskirts of the village. The population is considerable, consisting almost entirely of Siamese officials and their families and of Chinamen and Chinese half-castes engaged in river transport or petty trade. At the time of our visits all the houses were of a flimsy nature, being built chiefly of bamboo and palm-thatch; the largest was the old government offices, one wing of which was assigned to us by the Commissioner, as they were being replaced by more substantial timber buildings; among these a telephone station in direct communication with Senggora, Patani, and Kota Bharu (the chief place in Rahanan), which is also connected with Biserat by a good track.

The country round Biserat consists of a large and fertile plain, most of which is in use as rice-field or orchard, and the only jungle that remains in the district is that on two limestone hills, called Bukit Tapang and Bukit Bayu, which rise abruptly from the midst of swamps behind the village. Their
sides are more or less precipitous at all points, in many places so much so that there is no lodgement for soil, and vertical crags are exposed. Thus the hills, though they are certainly not more than about six hundred feet in height, have a massive and solid appearance, belied by the fact that they are penetrated in all directions by natural tunnels, which here and there expand into lofty domed chambers of considerable extent. Bukit Tapang and Bukit Bayu, in fact, are precisely similar in geological formation to many hills and islands on both sides of the Malay Peninsula. The stone of which they are formed is highly crystalline and has been exposed to metamorphic action of a kind that leaves little hope of the discovery in it of organic remains. It is evident that they represent the ancient land surface, now much eroded, through which the central range of plutonic rock has been erupted. In certain places, especially in the neighbourhood of Kampong Jalar and Tanjong Luar, the two formations meet and become confused together in a very curious way, and in such localities metalliferous veins appear to be common.

The fauna of Bukit Tapang and Bukit Bayu may be divided into two distinct sections, one of which is found on the exterior, while the other inhabits the caves. The former is prolific, for the vegetation that grows in the scanty soil which covers the limestone is more luxurious than might be expected from the rapidity with which the ground dries up after rain, and rich vegetation always means a rich fauna. It is noteworthy, however, that the fauna of these hills is by no means so characteristic, to all appearance, as the flora, which differs, on the one hand, from that found on granite mountains like Bukit Besar, and, on the other, from that which covers marine or semi-marine cliffs like those of Chau Mai or the islands of the Taleh Sap. Speaking generally, while the number of tall trees, epiphytes, and ferns is smaller than it would be in the former situation, the number of fleshy-leaved or fleshy-stemmed species is smaller than in the latter. The animals are mostly those found in the plains, though certain species, for example, the Malay serow, or 'kambing gurun' (Nemorhaedus swettenbami), do not occur on level ground. This antelope, the only one that penetrates down into Malaya, is especially common on limestone hills of the kind, taking shelter from the rain in the caves; but it also abounds on Bukit Besar. The avi fauna is not particularly noteworthy; an ant thrush (Pitta cyanoptera) becomes common at the base of the cliffs in November, and is partly responsible for the heaps of broken snail shells at the mouths of the caves, but a species of Myiophonus, whose cry we frequently heard, probably contributes its share, for on a previous visit one of us collected a young specimen in just such a place on Bukit Tapang. Insects are rather scarce, but in some patches of jungle the tailor ant (Oecophylla smaragdina) is so abundant,
and so vicious, that passage through the thorny undergrowth is difficult. A careful search would probably reveal a large molluscan fauna, always rich on limestone, but we were unfortunate in this respect in the dryness of the year, which probably caused the majority of the species to disappear into the earth. As a member of the ‘Skeat’ Expedition one of us took on Bukit Tapang several new slugs of the brilliantly coloured and peculiar genus *Atopos*, as well as a very curious snail, *Rhizostoma jalorense*, Sykes, which has a shell that looks as if it had become partially uncurled and had then been joined together by a tubular bridge running between two whorls. Its operculum is also peculiar, being very thick and fitting into the shell with a regular spiral screw, probably as a protection against the evaporation of moisture, as the species is found, at any rate in dry weather, buried in leaf mould, only dead and eroded shells occurring on the surface of the ground, where they are very common in certain places.

The cave fauna is mainly interesting because it is not a true cave fauna in the sense that that of the Mammoth Cave of Kentucky is one, probably because the Jalor caves, though they penetrate into the hills for a considerable distance, are not uniformly dark throughout, the roof having fallen in in many places and so permitted light and moisture to enter, and with them the fauna of the outside world. Nevertheless, there are several species found in the darker parts of the caves which are, at any rate, very rare elsewhere, notably the so-called ‘moon snake,’ *Coluber taenius*, which, however, is not so common as in the caves of Selangor. A very large whip-spider, *Stygophrynus cerberus*, Simon, is extremely abundant on the walls, and a wingless grasshopper belonging to the family *Stenopelmatidae* is even more so. The latter has extremely long antennae, one of which is longer and stouter than the other, and the whip-spider’s first pair of legs, which it carries crossed over its back, are even longer than those of some of its allies, largely taking the place of eyes, though these organs, which would appear to be useless to the animal, are well developed even as regards their internal structure. Certain Isopods, found under stones in the caves, may possibly have degenerate eyes, but they have not yet been examined.

We stayed at Biserat for some weeks in June, July, October, and November, 1902, and there obtained a considerable proportion of our anthropometrical data regarding the Malayo-Siamese, as we have thought it best to call the very mixed indigenous population of the Patani States. Our subjects were partly prisoners in the jail and partly inhabitants of the neighbouring hamlets. We also made large zoological collections in the neighbourhood, and, as regards insects, were particularly fortunate because of two events, viz., the

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1. Detailed measurements show that this is usually, but not invariably, the left antenna.—N.A.
discovery in an accessible position of a flowering shrub which attracted enormous numbers of beetles and other insects not elsewhere obtained, and, secondly, the arrival of the High Commissioner with a large train of elephants, which were followed or accompanied by some interesting beetles of the genus *Heliocoris*. The situation of the house in which we stayed, in an open space surrounded by orchards, proved attractive to moths, of which large numbers were taken round our lamp in the evenings. Several species of Diptera belonging to the family *Celyphidae* were collected, together with a Phytophagous beetle which some of them resembled very closely, as well as a number of ant-like spiders (*Attidae*), in some cases with their specific 'models.'

On each occasion we came to Biserat by boat from Patani—a dull and tiresome two days' journey, for the boat, a large flat-bottomed punt with a low-roofed cabin amidships, a small kitchen behind and a sloping platform for the polers in front, kept constantly sticking on a snag or sand bank. The river is so shallow and the currents are so variable that no steersman can know it intimately from one month to the next. The country on both banks is tame, covered with a succession of Malay and Siamese villages, which are separated from one another by patches of secondary growth and clumps of bamboo. The only interesting feature of the journey is the Sungei Bharu or 'New River,' a canal cut across a bend of the river by a late raja of Patani, who wished at one stroke to shorten the journey from the interior to his capital, to bring more water into the river which reached the sea through his territory, and to deprive the governor of Nawngchik of the revenue accruing to him through the passage of goods through his state. All of this the canal has performed satisfactorily, and it is a good instance of what can be affected in engineering by sheer force of numbers of workmen, though, of course, no great difficulty had to be surmounted in its construction. It is about six miles long, broad enough for two house-boats to pass one another with some difficulty, and very fairly straight.

*Bayu*. A village of indigenous Siamese about two miles from Biserat, from which it is separated by a stretch of level ground and then by Bukit Bayu. The village is surrounded with large orchards, especially of durian trees, which prove most attractive to the giant squirrel, *Ratufa bicolor*, when in fruit. It is separated from a considerable Buddhist monastery by a winding lake which occupies the hollow at the base of the cliff, immediately below which the monastery buildings have been erected. The monks have charge of a cave a little above their residence in which, about a century ago, a Chinese governor of Senggora on tour through the Seven Provinces caused a colossal recumbent statue of Buddha to be built. Since then many other figures of

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1. But the Siamese did not permit him to levy tolls at both ends of the canal, as he wished to do.
Bukit Tapang, from near Biserat
inferior size, but still gigantic, have been set up round it, and the cave is regarded as being sacred by Malays and Siamese alike.

We paid several visits to Bayu to measure the people, who were of the Siamese type normal in Jalor, many of them having wavy hair. From the lake we obtained specimens of a freshwater sponge and a freshwater Polyzoan.

Bendang Stab. An important village, partly Chinese and partly Siamese, a full day’s journey, going down stream, above Biserat. Its importance lies in the fact that it is the point of embarkation of the tin from the Jalor mines, with which it is in constant communication by means of elephants and pack buffaloes, which we did not see elsewhere in the Patani States. We made no collections at this place, but spent a very uncomfortable night, tormented by minute Acari, in a Chinese house in the village, on our way from Tanjong Luar to Biserat.

Kampong Jalor. This village, which is marked as Raja Jalor on some maps, was until recently the most important in the state, being the residence of the raja at a date when the Siamese rule was merely nominal. It is still a considerable Malay centre, and its most important feature is the raja’s compound, in which there is a large balei, or audience hall, built of flimsy materials and now much dilapidated, and reported to have been constructed at the cost of $40. It contains the raja’s insignia, which consist of a large drum, made of a hollow palm-trunk, and a huge wickerwork torch-holder. The village itself is dirty and crowded, and its inhabitants, very few of whom are Siamese, are mostly opium-smokers, many of them being employed in connexion with the raja’s elephants, and all elephant mahouts, it is commonly said, being addicted to this habit. Few, however, indulge to excess, the majority merely taking a pipe in the morning and another at night; it appears to do them little harm so long as they can get their two pipes a day, but if this is impossible for a single day they become very weak and miserable. The opium monopoly in the village was held at the time of our visit by a Chinaman who had married a Siamese woman notorious as a witch who kept familiar spirits. She had originally been married to a member of the raja’s family, being the daughter of a Bangkok noble, but several husbands had divorced her in succession, because of her reputation in respect of black magic.

The country round Kampong Jalor resembles that round Biserat, from which it is some five miles distant, but the limestone hills are rather higher and occur in close proximity to granite outcrops, on which vegetation is extremely scanty. The mammalian fauna is richer, owing to the neighbourhood of extensive tracts of jungle, and a number of species were brought us by the Malays, who appeared to be rather better jungle men than in some parts of the
Patani States. Among these was the type of a new species of civet cat, Paradoxurus minor. We also obtained, chiefly from the same source, several interesting reptiles, including a new tortoise of considerable size, Cyclenys annandalii, and a new snake, Dipsadomorphus pallidus. As heavy rain fell during the greater part of our stay at Kampong Jalor, we were able to do very little collecting ourselves, but we were fully occupied in preserving the specimens brought to us and in anthropological work. With the rains came numerous wading birds, which had hitherto been absent or scarce, including several species of heron and at least two of stork. Vultures of two species were very abundant, and specimens were obtained of both. The Siamese Commissioner had caused a house to be built for us outside the village, but it had been erected on an abandoned rice-field on which dead cattle and dogs had formerly been cast out, and the remains of these, and of the animals we had skinned, proved most attractive to the vultures, which sat on the ground in rows, often too fully gorged to fly, within sight of our verandah.

As regards anthropology, we obtained a considerable series of anthropometrical data, but not so large a one as we desired, owing to a rumour, spread we know not how, that we were measuring people in order to enlist them against their will in the white men's army. A large collection of ethnographical specimens were made, and much information concerning native beliefs and customs obtained. The specimens included some very fine neoliths, which were preserved as charms against lightning and as hones for the artificial spurs which were formerly attached to the legs of fighting cocks but are now illegal.

We stayed at Kampong Jalor in October and November, 1901, arriving from Biserat, and starting from the former village for our trip to the Rhaman border. Between Biserat and Jalor there is a road which is fairly good in dry weather, except that most of the planks in the bridges spanning the numerous runnels of water which traverse it have been stolen; during the rains the road becomes mostly mud, though cattle and elephants are warned off it by means of elaborate signs, such as a model of the elephant hobbles used in the country, suspended across the track or from a pole set up at its side.

Mabek. A small community of Malays in the interior of Jalor, situated near the point where the fauna and flora commence to take on a true jungle character, which is practically absent, except on Bukit Besar, northwards towards the sea. We noticed a very marked difference between the fauna of this place and that of the country round Biserat, especially as regards the dragon flies, which were more numerous here than at any other collecting
station, in species and individuals. Among mammals, a gibbon was common, and we obtained a specimen of the monkey Presbytes (Semnopithecus) femoratis, which seemed to replace the common P. obscurus. Several specimens of the rare porcupine, Hystrix grotel, were brought us by the natives.

Our object in visiting Mabek was to meet a small tribe of Semangs, calling themselves Hami or 'Men,' whose Malay lord resided there. In this we were, so far, successful, for we saw and talked with five adults and obtained from them several interesting ethnographical specimens, as well as taking measurements and photographs of them, but their master was afraid that we intended to kidnap them and so hindered us from seeing as much of them as we desired. At the same time, he arranged that the people of the village should refuse to sell us supplies, so that we could obtain little to eat. The Hami are probably of purer Semang stock than the Semán of Upper Perak.

Petai. A small Malay village some miles north of Mabek. Here we spent a night on the way to Tanjong Luar, incidentally obtaining some curious information regarding the Malay belief in familiar spirits and witches.

Tanjong Luar. Tanjong Luar is a small Malay hamlet only separated by the Sungei Groh, a tributary of the Patani, from the Siamese community of Ban Kassöt; but as the Sungei Groh also forms the boundary between Jalar and Rhaman, the two hamlets, or rather quarters of the village, are in different states, Ban Kassöt being on the Rhaman and Kampong Tanjong Luar on the Jalar bank. The two together contain some fifteen to twenty houses, whose inhabitants, being too lazy to practice artificial irrigation, cultivate hill rice (which needs no such aid for its growth), maize and bananas in small clearings often some little distance from the village, living during part of the year in their plantations. The scenery in the surrounding country is magnificent. The bold outlines of the limestone hills, which are several times higher than those near Biserat, the whiteness of the exposed cliffs, and the luxuriance of the vegetation at their base afford a series of contrasts very grateful in Malaya. At one point a stream makes its way through a lofty tunnel in a marble crag, and the hills, if the natives' stories be true, are full of splendid caves. We were invited by the Luang Chin, or head of the Chinese community in Patani, to visit a tin mine which he owned in the neighbourhood, having first been warned of the precautions we must take not to scare away the tin spirit. In forming the mine, which is probably the most important in the Patani States, the side of a hill has been completely dug away, but the Luang Chin told us that it did not now pay to work it to its full capacity. He took us to see in the immediate neighbourhood a beautiful little valley at the entrance to which a pair of huge rocky pinnacles stood sentinel, strangely reminiscent of certain rocks in Switzerland, except that one
of them was partly covered with Cycads—a family of plants rarely seen in numbers in the Patani States.

The fauna at Tanjong Luar is that of the central region of the Peninsula, especially as regards the butterflies, the only animals of which we made collections there. They congregate in enormous numbers on the Sungei Groh, which is very muddy owing to the tin workings higher up, and often settle in patches a foot or more square upon the banks. The yellow, red and white species, such as *Appias nero*, *Terias* and several *Pierinae*, keeping, as a rule, densely crowded and confused together, while the more sombre *Euploeidae* and their allies remain separate, consortng with those *Papilioninae* which resemble them in coloration, and the large black members of this last family dart from place to place, settling to drink alone.

At the time of our visit the people of the Ban Kassôt were being decimated—eight adults out of about forty had died during the preceding month—by a disease which closely resembled rapid consumption in its symptoms, while the children, almost without exception, appeared to suffer from something very like tuberculosis of the intestine. The houses of the village were unusually small and close, and were built in a little hollow, shadowed by three mountains, where the sunshine barely reached. As the people themselves told us, they 'dwelt in the path of the spirits,' which were constantly passing from one hill to another. This, they agreed, was the cause of their sickness, from which the neighbouring hamlets appeared to be free; indeed, it was only here that we experienced in the Patani States any form of disease so rapidly or widely fatal as those frequently associated with the tropics, for cholera, plague and beri-beri, if they exist in the Division of the Seven Provinces, are very rare, while smallpox, though probably endemic in a mild variety, only becomes epidemic, virulent and awe-inspiring to the populace at intervals of several years.

We had visited Tanjong Luar in order to meet a tribe of Semangs, who were said at that time (November, 1901) to have taken up their abode for the rains in certain caves, for we had heard that their 'herdsman' or guardian was the Siamese *Nai-ban* of Ban Kassôt, and although we failed in this project, our three days' journey from Kampong Jalor—much of it through flooded rice-fields in which the horse leeches were uncomfortably common—was richly rewarded by the acquisition of an authentic Semang calvaria, which we found lying at the base of a cliff where the rest of the body had been completely devoured by porcupines, and of an almost complete skeleton of the same race, procured for us from a cave, in which the corpse had become partially mummified, by the medicine-man, or *môr*, of the village. The *Nai-ban*, herdsman of
View at Nawneglick town, with Bukit Besar in the distance.
the 'Sakais,' and his friends allowed us to loot their houses in our search for ethnographical specimens, which we did with great satisfaction both to them and to ourselves, having some difficulty in persuading them to accept the remuneration that we considered fair, but they regarded as altogether extravagant. Altogether we spent nearly a week in this neighbourhood, where we had the opportunity of inspecting the preliminaries of an indigenous Siamese funeral, as well as obtaining some interesting specimens.

Nawngchik

The state of Nawngchik lies between Jalor and the sea, marching with Patani to the East and with Tibaw on the other side. Its area is about a third greater than that of Patani. Seen from the flank of the mountain Bukit Besar, the greater part of the state is covered with low brushwood, and little thick jungle remains. The population in a few localities is, however, dense, and there are open plains on which a large number of cattle are pastured. We paid three visits to Nawngchik, staying for some weeks at a time on two occasions, and a considerable part of our zoological, anthropometrical and ethnographical data were obtained in the state, as the conditions were favourable in all cases.

Nawngchik town, called Tojan by the Malays, is situated on a branch of the Patani which was formerly the chief effluent of that river; it lies about two miles from the sea, and about six from Patani town, with which it is connected by a sandy track and a ferry. A wooden bridge also serves for foot-passengers across the Nawngchik River, but is too weak to support an elephant; the only vehicular traffic in the neighbourhood is conducted in Japanese 'rickshas, which have been introduced into Patani and are occasionally taken to the neighbouring places. The population of Nawngchik town cannot exceed two thousand, consisting very largely of indigenous Siamese, though there is a considerable Chinese element. The place is the headquarters of the governor, who is also recognised as raja or phya. Much of the surrounding country is waste ground, covered with short grass and clumps of bushes, among the roots of which the orchid, Phalanopsis esmeraldae, is very common and reaches a magnificent development, differing from most orchids in preferring to grow in almost pure sand.

We were detained at Nawngchik for about ten days in December, 1901, waiting for elephants to take our baggage to Senggora. There were extensive floods at that time in the neighbourhood, and we were forced at last to leave

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1. Malay children in this district call it haji naik kuda (pilgrims on horseback), owing to the shape of the flowers, but its common name is prang musang (civet cat's banana), owing to a belief that civet cats eat the fruit.
in dug-outs, which took us and our belongings in a ditch to within a few miles of Anak Bukit (q.v.), where we obtained elephants and porters with considerable difficulty. During our enforced stay we occupied a pavilion used by the raja as a grand stand when bull-fights were in progress. We shared the place with a caretaker, who spent his time in breeding fighting fish—an illegal way of encouraging gambling. The only zoological specimens collected were birds, among which were examples of the Indian roller, not hitherto been recorded from the Malay Peninsula, though it is common enough in December in the coast region of the Patani States. The most important acquisition, however, was a series of native Siamese skulls, which were obtained from trees near the town, a recrudescence of ‘tree-burial’—a primitive custom now officially obsolete and utterly illegal in Lower Siam—having recently taken place.

Kampung Anak Bukit. A small Malay and Siamese village, about ten miles from Nawngchik, which has become important as a government station and as the point where the telephone and telegraph lines from Patani to Senggora and to Jalor and Rhaman diverge. The scenery between this point and the Tibaw River is remarkable, reminding one of us of parts of Queensland. Immediately along the coast is a narrow belt more or less sparsely covered with casuarinas and Pandani; above this are wide plains, overgrown with coarse grass, which is usually low but occasionally grows as tall as a man, and, dividing the plains at intervals, stand straight rows of ‘trap’  trees which closely resemble the ti trees (Melanoleuca) of Australia, having conspicuous white bark (out of which the cattle-drovers of these parts sometimes make the walls of their houses) and small foliage not unlike that of a birch. Behind these plains thick jungle, abounding in palms, occurs. Anak Bukit means the ‘child of the hill’, and the village has gained a name from its proximity to Bukit Besar.

We stayed at Anak Bukit for a night on two occasions in 1901, passing through the village on others and collecting a certain number of birds and insects. On our first visit, in April, when the country was very parched, one of us found the remains of a freshwater sponge, which was suspended, high and dry, but full of gemmules, from the stem of a creeper overhanging the bed of a torrent.

Bukit Besar, the ‘Great Hill,’ also called Gunong Negiri, is a mountain approximately 3,500 feet high, on the borders of Nawngchik, Jalor and Tibaw. It is a very conspicuous feature in the landscape of the coast region, for it rises abruptly from the plain on three sides, being quite isolated except for a subsidiary range of no great height, with which it appears to be connected towards the west or north-west. Its formation is granitic, with

1. It is probable that this name is given to different trees in different parts of the Peninsula.
Jungle on Bukit Besar, Nawngchik.
stunniferous veins in the rock, and its flanks are strewn with large granite boulders. Towards the south it is very steep, with curious gaps and caverns, but the northern slope, with which we are best acquainted, is gradual. On this side a large area has been cleared, reaching as high as about a thousand feet, but most of it is now overgrown with secondary growth, and, above, the jungle is virgin, except for an old clearing, at about 2,500 feet, which was originally made by tin prospectors, but afterwards occupied as a place of retreat by the monks of a Buddhist monastery at Sai Kau.

This clearing, in which we stayed, is overgrown with long grass, brushwood and wild bananas; the plate of jungle on Bukit Besar gives a good idea of the vegetation both in such deserted clearings and in the ancient jungle surrounding them, but the small trees in the foreground are durian trees, which the monks have planted. On the lower slopes of the mountain the trees are high, with slender trunks, which are usually almost free of epiphytes, though ferns and orchids abound on the tree-tops. Above 3,000 feet bamboo thickets are common, while about 300 feet below the peak a sudden and complete change takes place in the flora, the trees becoming low and stunted, and their trunks being wreathed in moss, lichen, ferns, orchids and other epiphytes, among which we were surprised not to see a single pitcher plant. The ground orchid, *Annectochilus*, is abundant among the undergrowth, growing where there is a thin layer of soil over rock, and the summits of some of the large boulders in the jungle are buried in ferns and in the foliage and blossoms of a white-flowered orchid belonging to the genus *Calanthe*. Comparatively few of the tree orchids have conspicuous flowers, but a certain number were very beautiful, while the large seed-vessels of others, which scattered an impalatable powder of seed at a touch, showed that the blossoms had not been small. Two forms of vegetation may be mentioned as being connected with the fauna in a very special way, viz., (1) the gingerworts and wild bananas, and (2) certain forest trees, the trunks of which are strengthened by the outgrowth of laterally projecting buttresses at their base. Occasionally these buttresses coalesce at their free extremity, thus forming cavities in which dead leaves and rain water collect, and when this occurs, a regular microcosmos is the result.

Between the buttresses of one such tree, in the water or on its surface, the following species were taken:—the lizard, *Gonatodes affinis*, which sought shelter in the water when disturbed; the snake, *Tropidonotus chrysargus*, feeding on the spawn of the frog, *Ixalus borridus*; the water bug, *Rhagovelia insignis*, which covered the surface in a little cloud and was not seen on any pool or stream in the neighbourhood; the larva of a dragon fly; the pupa and adult of a Tipulid, and the larvae of several other Diptera and
beetles. Of these the frog is probably peculiar to this habitat, while the same is possibly true of the bug. The broad leaves of the gingerworts and bananas also have their peculiar fauna. Many species of insects—including the members of a peculiar Dipterous family (Diopsidae), which, in the Malay Peninsula at any rate, are rarely found apart from these plants—delight to run about on and to hover over their surface, and others conceal themselves during the day in the funnels formed by the young leaves; while the so-called flying gecko, Ptychozoon homocephalum, not infrequently chooses the lower surface of the adult leaves on which to lay its eggs.

The larger mammals are scarce on Bukit Besar, but we often heard the curious cry of the male serow, Nemorbaedus swettenbami—something between a bleat and a bark—and the still stranger call of the muntjac (Cervulus muntjac), which is a regular roar. One night our slumbers were disturbed by the yelping of a pack of hunting dogs (Cyon) and by the growls of a pair of tigers which wandered round our hut; while traces of the Malay bear (Ursus malayanus) and wild pig were abundant. Among rodents we took specimens of six kinds of squirrels, and saw a family of a seventh, namely the variable species, Sciurus finlaysoni. Of those actually collected, two, Sc. robinsoni and the ground squirrel, Funambulus insignis jalorensis, were new, and we also obtained two new rats, Mus bukit and M. jalorensis. The birds were neither numerous nor peculiar, though many of them had exquisite plumage; only a few, probably owing to the isolated position of Bukit Besar, belonged to the true mountain fauna of the Peninsula. The reptiles and frogs were mostly arboreal forms, and therefore difficult to collect or even see; but we obtained two new frogs, Ixalus horridus and Rhacophorus robinsoni, and some interesting lizards, including the peculiar horned species Acanthosaurus armata, and also Dibamus novae-guineae—the only representative of a family not hitherto recorded from the mainland of Asia. Insect life was rich, but not so rich as in 1899, which was a very much wetter year; we had opportunities both of collecting and also of photographing and observing, under natural conditions, a number of interesting forms, including the marvellous flower mantis, Hymenopus bicornis, the white and pink ‘varieties’ of which were proved to be mere phases in the life history, as Shelford believes, while a third phase, of a pinkish coffee-colour, was noted in connection with the flower of a creeper. We were not so fortunate as to obtain specimens of the Peripatopus discovered on Bukit Besar by the ‘Skeat’ expedition.

1. It is possible that the annual rainfall in the Patani States is fairly uniform, but that its distribution through the months differs considerably from year to year. In 1899 there was almost daily rain between April and the end of what would be the summer in Europe. In 1904, a more or less sustained drought prevailed during this period in the plains, while thunderstorms were less numerous and violent on the hills. Neither year was considered extraordinary by the natives, who expect a heavy rainfall and high winds in the latter end of November, in December and January, and a short period of calm, dry weather in March and the beginning of April.
We lived on the mountain, for three weeks in April and May and a fortnight in August and September, in a little hut of branches and palm leaves, tied together with the stems of creepers, which our coolies practically built for us in the course of about two hours, and we had also a photographic dark room, constructed over a clear mountain stream, and a stage for drying specimens erected in the clearing. But for the dampness, due rather to a fine mist, which the sun never wholly dissipated, than to rain, for consequent attacks of violent toothache, for the parasite to which one of us has already alluded, and for land leeches, which were most unpleasantly abundant, we were very comfortable, as the Malays of Sai Kau brought us up provisions, which they sold to the cook for ridiculously small prices, almost every other day. They also brought little bamboo tubes full of specimens which they had collected during the ascent, and Siamese pig-hunters often visited us with similar wares, so that we saw a good deal of the natives even on the mountain. So far as we could discover, there are now no aborigines living on Bukit Besar, though it is quite possible that the stories of spirits with which our men were regaled on their return to the plains were due to the presence of some particular shy and retiring tribe, which may or may not be extinct.

Ban Sai Kau, sometimes called Kampong Pasir Puteh by the Malays (both names meaning 'the village of white sand'), is a large village, or rather collection of hamlets, with about six hundred inhabitants, and lies immediately below Bukit Besar. The population is almost equally divided between Malays and Siamese, the two 'peoples' here, as in Jalor, being more accurately described as the followers of Buddha and Mahommed respectively. They do not, however, occupy the same hamlets, for every small group of houses is hidden in a grove of coconut and areca palms and other fruit trees, and separated by extensive rice-fields from its neighbours. Many cattle and buffaloes are also pastured in the neighbourhood, and the people, though very poor, are well able to live in comfort on the products of their fields, orchards and poultry, the sale of their cattle, many of which are sent over into Perak and Kedah, providing them with such luxuries as they desire. In type they differ somewhat from the Malayo-Siamese of Jalor, the common occurrence among them of wavy hair, a dark complexion and a very broad nose probably pointing to Semang blood, while it is possible that there has been less mixture with Chinenmen or true Siamese. Their customs and education are very primitive, though Malay boys are invariably taught to read the Koran—often without understanding what they read—in Arabic, and we found that the majority of them could not count above ten, so that a purely concrete system of decimal arithmetic had to be used in our monetary
dealings, every ten cents being placed by itself in a little heap, and the different heaps being again combined in tens to form dollars. An interesting feature of their culture was the fact that they displayed a far greater tendency, possibly inherited from Semang ancestors, to decorate bamboo articles with engraved patterns than their Malayo-Siamese neighbours, though their patterns were of a more regular and elaborate character than those common among the wild tribes of the Peninsula. Their cloth, on the other hand, was very coarse, only three kinds of dye—the bark of the jack-fruit tree (*Artocarpus integrifolia*), the wood of a species of acacia and an indigo—being at all commonly employed, and checks being the only type of pattern as a rule attempted. Unlike most of the Malayo-Siamese, however, they grew a proportion of the cotton they used, and many of their spindles and other implements were finely carved, while the stands of their cotton-winders were often ornamented in a very tasteful way with a combination of carving and painting in simple colours. The everyday language of Mahommedans, as well as Buddhists, was a dialect of Siamese, but all the older Mahommedan men, and most of the younger ones, could also speak Malay.

The country round Sai Kau is not particularly interesting, except towards the mountain, and the greater part of our work there was anthropological. We obtained large ethnographical collections during the two visits we paid, one in May, when we stayed for about a week, and one in September, when our sojourn was rather longer. A number of people were measured, photographs were taken and two skeletons of murdered persons were procured, for it is not very difficult to carry off the remains of those whose violent death has caused their ghosts, which follow the remains, to be a menace to the neighbours.

**Jhering**

The state of Jhering lies between Patani and Telubin, which we did not visit, and the most direct route from the interior of Rhaman to the coast runs through it. Although its area is considerably larger than that of Patani, the proportion inhabited is very much smaller, for the interior of the country, according to all accounts, consists chiefly of swamps and morasses, in which the Jambu River, which appears to have been at one time connected with the Patani, now loses itself. The population is chiefly Malay, being almost entirely occupied in fishing and salting fish, but we heard persistent rumours of the existence of a large Siamese village, peopled by the descendants of former invaders, and the rajas of the state are of true Siamese origin, though now Mahommedans.
Jambu: The capital of Jhering was probably the most thoroughly Malay place we visited in the Malay Peninsula, for it was of sufficient size, on the one hand, to be something of a centre for local traffic, and too insignificant, on the other, to be attractive even to Chinese traders, while Siamese influence appeared in 1901 less obvious than in other places in the Patani States. It is probable, from what one of us heard in Patani in 1902, that considerable external changes have since taken place in the town. In the summer of the previous year the place certainly had not more than 2,000 inhabitants, the great majority of whom were Malays, and the only building of any solidity was the mosque, which betrayed strong traces of Chinese design. A number of Malay rajas had houses in the town, for the place enjoyed the reputation of being very healthy, probably on account of the sea breezes which reach it through the odoriferous casuarina woods; but these 'palaces' were built for the most part of bamboo and palm thatch, though the size of some of them was considerable. One, assigned to us as a lodging, belonged to the Raja Mudah of Rhaman, at that date (June, 1901) a fugitive from justice, and was extremely commodious and cool, our quarters consisting of a large central hall, a room of the same width at the entrance for our followers, and a bedroom behind for ourselves. There was a well of good water inside the house, and the only objection to the place, according to the Malays, was that it was haunted by a spirit.

The surrounding country consists partly of barren, sandy stretches, partly of mangrove swamps, the latter following the course of the river, which is little more than a tidal creek, and of the many channels into which it breaks up at its mouth. The town lies about a mile and a half from the sea, and six miles by road from Patani.

More extensive traces of the old pagan religion of the Malays exist in this neighbourhood than at any other point on the coast which we visited, and the worship of spirits is carried on quite openly, whereas it is usually concealed. The custom of 'casting away sickness' on little models of ships is especially rife, and we were told that a few years ago, when an epidemic of smallpox raged throughout the Patani States, many children who were attacked by the disease were set adrift on rafts, in order that they might carry it away with them out to sea.

We spent ten days at Jambu, originally visiting it in search of health, as we were never well in Patani, probably because of the bad water supply. Much of our time was occupied in watching the habits of the 'walking fishes'
(periophthalimus and Boeleopthalamus) on the mud flats exposed at low tide. An interesting series of these truly amphibious forms was obtained, and a number of the specimens have been found by Mr. J. Johnstone to belong to a new species, which he has named periophthalimus phya. A few ethnographical specimens were obtained, as well as the skeleton of a murdered Malay.

Cape Patani is a narrow sand spit, ranging in breadth from nearly a mile to a hundred yards or less, which stretches out to sea for ten miles from the south bank of the Jambu estuary. Its southern beach is exposed to the open sea (the Gulf of Siam), while it protects Pantani Roads to the north, at the same time rendering them liable to be silted up.

No greater contrast could be imagined than that between the jungle on Bukit Besar and the vegetation on Cape Patani, for here we have no tropical luxuriance, except in the tiny thickets which surround the pools of water that well up in the broader parts through the sand, but either woods as open as those on the South Coast of England, or scenes as parched and dry as the sun-stricken deserts of Somaliland. In the casuarina woods, with their lawn-like glades, gnarled tree-trunks and absence of undergrowth or epiphytes, there is little to tell the eye that one is not in a northern pine-forest, while in the sandy wastes round the villages, so hot that a European cannot walk barefoot on the sand at midday, the hedges of spurge, Pandanus and prickly pear recall a country far other than Malaya.

As will be readily understood, the fauna of such a locality is peculiar and impoverished, though large numbers of cattle and sheep are pastured in the woods. Mammals, except otters and the two common monkeys, Presbytes obscurus and Macacus fascicularis, are rare; we heard stories of an enormous red rat which lived among the hedges, but saw neither it nor the civet cat which inhabits the woods; squirrels especially are scarce. Of birds, several woodpeckers are common, and a little black-and-white tit is particularly characteristic; the place of sea birds is largely taken by the fishing eagles, hawks and ospreys which nest in the highest casuarina trees, swarming on the beach wherever fishing operations are in progress. Towards the point, however, terns (Sterna sinensis and at least one other species) are fairly numerous, as is also a cormorant indistinguishable, except by its small size, from the common British species, while at the time of our visit (September and October, 1901), enormous numbers of plovers and sandpipers had just arrived on migration. The Malays who lived in the fishing villages on the Cape told us that, a little later, a bird they called burong lah paid them a visit of a few days in large flocks, and was captured for food with nets and snares. Their

1. Of course introduced; a species of Opuntia is now not uncommon in the dryer parts of Malaya.
View in the Casuarina Woods on Cape Patani.
description of its appearance and habits answered exactly to *Pitta cyanoptera*, which a Patani man later picked out from the whole collection in the Selangor State Museum as the *burong lab*, though this species is known at Jalor as *burong paechat*; but they said that there were two kinds of *burong lab*, one a little larger than the other, which did not travel together.

The insects in this locality are mostly small and inconspicuous, and there are few other invertebrates except marine forms. Among these we took, on the beach, an Opisthobranch mollusc so closely resembling a seed which commonly germinates in sea water that only a very close examination revealed its true nature. Indeed, one of us, some argument having arisen about these seeds, actually lifted the animal up under the impression that it was one of them.

The people living on Cape Patani are all Malays, who appeared to differ considerably, especially as regards their narrow faces, from any others we met with on the East Coast. Unfortunately, they were unwilling to be measured, and we only secured a very small series of physical data; their hair was straight. The nature of the soil makes agriculture impossible for them, but their cattle are valuable for export overland to Perak. The sheep are chiefly kept to be sacrificed at the shrine of ‘Toh Panjang,’ a Mahommedan saint, whose legend has been told by Mr. W. W. Skeat in his *Fables and Folk-tales from an Eastern Forest*.

There are several little fishing villages on the sand-spit, of which Kampong Datoh, the seat of the shrine, and Kampong Tanjong Budi are the most important. We stayed at the latter for some days, being literally driven to it by the mosquitoes, which rendered life a misery in the camp we had established at the edge of the woods on the other side of the Cape. It is difficult, without seeming exaggeration, to give any idea of their numbers, and the only consolations we had regarding them were that their presence was to some extent compensated for by the absence of another plague, namely land leeches, and that they included few or no specimens of the malaria-bearing genus *Anopheles*, which appears to have a very local distribution in the Malay Peninsula.

**Kedah**

Our only personal knowledge of this state was obtained during a hurried three days’ journey through it from Senggora to Alor Stah, where we stayed one night. We were able, however, to verify one important geographical fact bearing on the question of the high level fauna of the Peninsula, which differs so completely, at any rate as far as the birds are concerned, from the fauna of the plains. There is a very distinct break in
the main range in Central Kedah, for in crossing from Senggora we neither ascended higher than a few hundred feet above sea level, nor did we see a single high mountain in the vicinity of the track. This fact is interesting, because it has frequently been taken for granted that the mountain fauna of Perak, which is not found much below 3,000 feet, has a continuous distribution with that of the mountains of Northern India, to which it is so nearly related; whereas it is evident, in the light of this observation, that no such exact relationship can exist at the present day, unless, as seems improbable, the mountain forms are in the habit of migrating across intermediate tracts of level ground. In short, it seems that the Malay Peninsula, as our whole collection has served to confirm, is connected with India, as regards zoogeography, in a degree not much more intimate than that which links it to Borneo, though many mainland forms peculiar to the plains have made their way south across the Isthmus of Kra. The discovery of an elephant, known from the Upper Siwalik beds, also in Nawngchik, affords definite evidence that the Isthmus existed as long ago as late Pliocene or early Pleistocene times, and it is more probable that land has sunk beneath the sea in this region than that it has risen since the modern fauna came into existence.

The part of Kedah through which we passed was almost covered entirely with secondary jungle of no great age; ancient forest did not exist, and villages were few and far between. We noted what appeared to be an abrupt change in the population as we passed into the state, the coarse, rather flat-faced type, common on the East Coast, giving place largely to one with far more refined and delicate features, resembling those of the people of South Perak. The track across the Peninsula at this latitude has largely fallen into disrepair, but is still good at many points.

Alor Stab. The modern capital of Kedah is situated some miles up the Kedah River from the West Coast of the Peninsula. Though it has not more than half-a-dozen European residents, it closely resembles Penang or Singapore in outward appearance, having handsome public buildings and private residences, a large Chinese and a large Indian quarter. We saw, however, during a walk through the town, at least one shop devoted entirely to the manufacture and sale of the kris, a weapon which is rapidly becoming obsolete in most parts of the Peninsula and is, of course, typically Malay. A daily steamboat service exists between Alor Stab and Penang, and there is a large export trade in cattle, poultry and fish, among the last being rice-field Silurids, which can be carried alive for long distances in wooden tubs with very little water and a cover to prevent their escape.


2. Fossils of marine origin were found in Central Patalung by Mr. W. W. Skeat and myself in 1893, which Professor McKenney Hughes (Report Brit. Assn., 1901, p. 414) regards as being of late Carboniferous or Permo-Carboniferous age. N.A.
EXPLANATION OF THE MAP

The map illustrating Fasciculi Malayenses has been prepared by the Edinburgh Geographical Institute from the latest surveys of the Malay Peninsula, to which we have added the positions, as nearly as it was possible to do so, of certain villages in South Perak and the Patani States. We are also responsible for the location of the jungle tribes as indicated. With regard to spelling, we have chiefly followed that of the large map published by StAM福德 for the Straits Branch of the Royal Asiatic Society, but have attempted to standardize such common geographical terms as tanjong (Cape), and in a few instances, such as that of 'Senggora,' we have returned to an earlier form that seems to give a more accurate rendering of the Malay name. For adding an $h$ at the beginning of such words as hulu, we can plead no such excuse, but only the custom of Malay writers and scholars. Especially in the Patani States, it is often impossible to render native names with any degree of accuracy, but we have thought it best to follow a simple mode of spelling in such cases, even though it is phonetically inexact, rather than to adopt the somewhat complicated symbols used by Mr. W. W. Skeat in transliterated local names in this and the adjacent districts.¹

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Errata

For Malayensis (heading) lege, Malayenses.
For Lampan lege, Lampam.
For Nwangchik lege, Nawngchik.
