

NOTES ON THE FAUNA AND FLORA OF RATBURI AND PETCHABURI DISTRICTS.

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INTRODUCTORY.

The subject of this paper is the Fauna and Flora of Ratburi and Petchaburi, in which districts I have been working for the past few years; but unfortunately, from the zoological standpoint, have only been taking notes of specimens obtained during the past two years; viz., 1912-1913.

The area in question lies between N. Lat. $12^{\circ} 40'$ and $14^{\circ} 10'$ and E. Long. 99° - 100° . It is, of course, within the Oriental region bordering on the Indo-Malayan sub-region, and the Fauna is practically the same as that found in the adjoining Province of Tenasserim.

The country under review may be roughly divided into five fairly distinct classes, namely:—

1. The coast line in the N. W. corner of the Gulf of Siam, about the mouths of the Ratburi and Petchaburi rivers, with a belt of tidal mangrove swamps varying in width, but at no point more than 7 miles wide.

2. The alluvial paddy plains, with a soil generally lighter than that around Bangkok; and with abrupt limestone crags standing up from the plains.

3. The slightly undulating country with isolated hills and small ranges; and covered with various classes of jungle, chiefly deciduous.

4. The foothills covered with mixed jungle, deciduous and evergreen, and

5. The continuous mountains running up to the watershed dividing Siam and Tenasserim, covered with dense evergreen jungle.

The varying classes of country have each their fairly distinct populations. Along the coast are Siamese and Mons, with a number of Chinese in the larger centres engaged in fishing and cutting of firewood and attap.

In the paddy plains are chiefly Siamese, with colonies of Lao Puan and Lao Wiang intermixed; and, usually on the outskirts of the true plains, are found colonies of Lao Song, easily recognised by their distinctive dress and dwellings.

The third class of country is sparsely populated and is chiefly used by the inhabitants of the plains for the extraction of building material and fish stakes for export to the coast.

In the fourth class are found a few scattered Kariang hamlets; while in the dense evergreen forest, comprising the fifth class, are found the Karangs, who are really primitive Kariangs, using a somewhat different dialect and who, as a rule, cannot speak Siamese and sometimes fly from their dwellings on the approach of strangers.

THE COAST LINE.

In March 1909 I made a trip of some two weeks duration from Samut Song Kram to Petchaburi in small open boats, the coast line about there being only defined by the outer verge of mangroves, which are extending steadily seawards, and at low tide the mud flats are exposed for upwards a kilometre in breadth. At such times the fisher people go mud-sledging for shell fish, the sledge being composed of a box nailed to a plank, and the fisher, kneeling on the plank, uses one foot as a propeller.

South of Lat. $13^{\circ} 10'$ N. the character of the coast changes, until in Lat. $12^{\circ} 40'$ the limestone crags, which follow a general trend S. S. E., form seacliffs and islets. Between these points, the coast is slowly eroding, judging from the Sugar-Palm trees I found either destroyed or growing on the verge of the sandy beaches. Having been warned that nothing lived on the mud coast, except mosquitoes, I foolishly took no gun.

At the mouth of the Meklong or Ratburi river I saw large families of Otters (species unknown) playing on the mud banks and among the mangroves at low tide; and along the coast, and principally in the creeks in the extreme N. W. corner of the Gulf, found the Crab-eating Macaque (*M. cynomolgus*) acting up to its trivial name—eating crabs and other small denizens of the mud flats, and generally enjoying itself swimming and diving in the brackish creeks. The fisher people complain that these monkeys frequently steal rice and other edibles from their houses. Whether they also steal drinking water, which the inhabitants have to bring from a considerable dis-

tance, I cannot say; if they do not, it would be interesting to find out whether they do drink, or find sufficient liquid in the fruits and leaves of the trees in which they live. Inland, the same species comes down daily to fresh water to bathe, and presumably to drink; and in captivity this Macaque drinks daily. This long-tailed olive-brown monkey is probably well known to all members, being the one most commonly seen in captivity.

The mangrove and other trees growing in the tideway were during the day-time black with Fruit Bats (probably *Pteropus edulis*)—the largest colony I saw extending for 300 or 400 yards along the coast. These creatures get restless towards evening, and before dark are on their way to the fruit gardens several miles inland, around the town of Meklong. If disturbed during the day, they rise in a cloud and take some considerable time to settle down again in the same spot.

The Whistling Teal (*Dendrocygna javanica*), associating in flocks of some thousands, lay idly on the open water and, having no gun with me, they never seemed less disposed to take alarm. As the tide receded, and the mud flats were exposed, waders and shore birds appeared in vast numbers, but I was unable to obtain or identify any of these. Stranded one day on the mud, I was much amused watching the numerous small crabs hurriedly feeding with their "hands," from behind their one enormous claw, raised in an attitude of defence. This species has but the one nipper, which extends right across the body; and he watches the enemy (all are apparently enemies) the while he tucks in from behind this defence, occasionally stopping for a second to remove an indigestible pellet of mud—also with his lesser left hand.

To members interested in the Fauna of the tideway, I can recommend that corner of the Gulf which is quieter and more secluded than any other part of the Coast, nor are the mosquitoes troublesome during the month of March.

THE PADDY PLAINS.

In the years 1908 and 1909 my work lay chiefly in the populous paddy plains. North-east of Ratburi are found the wide plains with scarcely a tree in sight—jungle and gardens only occurring in isolated patches or on the higher ground of the river banks. With the exception of a few Fishing Cats (*Felis viverrina*), Palm Civets (*Paradoxurus hermaphroditus*) and a species of Mongoose not yet

identified, large mammals do not exist, but I was told that wild pig are found in an isolated patch of low dense scrub on the borders of Ratburi and Nakon Chaisi.

The Javan Slow Loris (*Nycticebus tradigradus*) is generally distributed (though not common), but is rarely seen owing to its nocturnal habits. In four years I have seen but two. It is the only representative in Siam of the primitive Lemur family. Various writers state that this monkey is carried aboard Chinese vessels to raise a wind by whistling, and the Siamese name, "Ling lom" (Wind Monkey), leads one to suppose that the practice is recognised in Siam.

The Malay Tree Shrew (*Tupaia ferruginea*), commonly met with in Bangkok gardens, is generally distributed, and though included in the Natural Order *Insectivora*, is omnivorous and has, I hear, recently troubled coconut planters by attacking the heads of young plants.

A feature of the broad plains N. W. of Ratburi are the huge flocks of a species of stork which, from the peculiar "misfit" in the upper and lower mandibles, can only be the bird known as the Open-bill (*Anastomus oscitans*).

The Sarus Crane (*Grus antigone*, or "Nok karian") is not common. I have seen but two pairs of this graceful bird stalking about the plains. During the present year I have seen the same pair several times in a big swamp west of Ratburi, where they probably breed, the nest being placed on the ground. It is an unmistakable bird and probably well known to members, there being several in captivity in Bangkok. The general colour is dove-grey, with a brick-red head. It stands some 4 feet or more high, and is the only crane so far recorded from Siam.

Adjutant birds (*Leptoptilus dubius*), the Black-necked Stork (*Xenorhynchus asiaticus*) and the White-necked Stork (*Dissura episcopus*) are generally distributed in suitable localities—the White-necked Stork showing a preference for the small glades and open jungle of the third class of country rather than for the plains.

In 1909 I obtained 3 nestlings of the Black-necked Stork, and the survivor of these now acts as a watchman for Mr. W. G. Johnson in Bangkok. Mr. Nunn informs me that this bird feeds largely on snakes. The nest was placed in the top of a tree some 100 metres up the side of Khao Chao Lai

To the west of Nakon Chum station and the river are several big perennial swamps—probably an old course of the river—and in these are found many species of waterfowl, notably the Purple Moorhen (*Porphyrio poliocephalus*), easily recognised by the hard red shield on the forehead. The Whistling Teal (*Dendrocygna javanica*) and the Cotton Teal (*Nettion coromandelianus*) are found from January to July and are probably permanent residents, and I obtained the Garganey Teal (*Querquedula circia*) in February. The Bronze-winged Jacana and the Pheasant-tailed Jacana (*Metopidius indicus* and *Hydrophasianus chirurgus*) also occur—the latter I found in flocks during February and March. Both are known to the Siamese as “Nok Prik” (นกพริก).

In June I saw a brown Pelican, and since Blanford states that the Eastern White Pelican is only a winter visitor, this bird could only have been the Spotted-billed Pelican (*Pelicanus philippensis*). They are said to be common in Ratburi during the rains.

Flocks of the Large Cormorant (*Phalacrocorax carbo*) appeared in February; the smaller species I have only observed in the higher and more secluded reaches of the Petchaburi river.

Of the Heron tribe, the Pond Heron and Cattle Egret (*Ardeola grayi* and *Bubulcus coromandus*) are found everywhere—the latter chiefly in the open plains, but the Pond Heron even in the more densely wooded districts.

The Common Heron (*Ardea cinerea*) appears to be confined to the brackish swamps and may usually be seen from the train, north of Petchaburi.

Of the *Columbae*, the Malay Spotted Dove (*Turtur tigrinus*) is widely distributed, occurring in all classes of country except the dense evergreen forests. Practically every clump of bamboos contains a pair. The Red Turtle-Dove (*Oenopopelia tranquebarica*) occurs in large flocks and is also very common.

Among the Accipitrine birds two species of Vulture occur—the Black Vulture (*Otogyys cabrus*), with red head, and the Indian White-backed Vulture (*Pseudogyys bengalensis*). The former is known as นกเงือกขาว by the Siamese, who say that the common grey bird is the servant of the black one. The Kites are those seen around Bangkok, viz., the Common Pariah Kite (*Milvus forficatus*) and the

Brahminy Kite (*Haliastur indus*). The tiny Black-legged Falconet (*Microhierax fringillarius*) is fairly distributed, and the massive Crested Serpent-Eagle (*Spilornis cheela*) may be found in the more isolated patches of cultivation.

Camping on the big river the most noticeable bird by day is the Pied Kingfisher (*Ceryle varia*) which is most common; and at night and early morning the Crow Pheasants (*Centropus sinensis*, Siamese นกขี้ตู่) betray their presence by hooting in unison. The country people state that they call the time, or "watches," regularly throughout the night or when the tide rises. The Indian Koel (*Eudynamis honorata*, Siamese นกกรรณ) is another common bird frequently heard. Among Passerine birds, the gorgeous Black-headed Oriole (*Oriolus melanocephalus*) is one of the most noticeable, both on account of its brilliant yellow plumage and its fine whistling note. The Magpie-Robin (*Copsychus saularis*) and the Shama (*Cittocinclama macrura*) occur everywhere—the latter most frequently in bamboo jungle bordering on cultivation.

Snakes I took little note of, beyond the fact that the black Cobra is not nearly so common as I had found it in the swamps south of Prachin. When sheltering one day in a farmer's house, he showed me the dried fat and various other internal parts of cobras, some for use as external and others as internal remedies for cobra bite. This is interesting, in that the people of the New Forest in England believe that, for the bite of a viper, the best remedy is to split the creature open and apply its fat. Speaking of remedies for cobra bite, reminds me that the country people place faith in another remedy, viz., human excrement, no matter whose, mixed with the leaves of some herb, the Siamese name of which is "Phak bung" (ผักบุง). Part of the mess is taken internally, presumably as an emetic, and the remainder placed on the wound, when "perhaps the patient will survive."

In 1909 my work lay south of Petchaburi. The paddy plains are of less extent, and frequently the bunds are planted thickly with Sugar-Palm trees. A great deal of jungle is intermixed with the cultivation, and the fruit gardens are tangled and densely overgrown, the ground beneath being frequently carpeted with pineapple plants. Such country is, of course, most suitable for the smaller birds, which abound, and in addition to those already mentioned, the Siamese Laughing-

Thrush (*Garrulax diardi*) is most plentiful. The Mynas are well represented as, in addition to the two species of Pied Myna found commonly in Bangkok (*Graculipica nigricollis* and *Sturnopastor superciliaris*), there are also the Siamese Myna (*Aethiopsar grandis*), with short crest and a white patch on either wing—the dun coloured house Myna (*Acridotheres tristis*), whose Siamese name, เจ้าฟ้า, closely resembles the Burmese name for the Talking Mynas; the migratory Chinese Myna (*Sturnia sinensis*)—a light grey and white bird seen in Bangkok during the winter months; and the Grackle or Talking Myna (*Eulabes* sp., Siamese นกขมิ้น)—a handsome black bird, with yellow wattles.

Hares are plentiful on the higher ground and presumably belong to the same species as that founded on Mr. Lyle's specimens, which have been classified as *Lepus siamensis*. They are snared, driven, and also shot at night by the aid of a lantern.

In this second class of country occur the abrupt, jagged-topped limestone hills. These are the home of the Goat Antelope (*Nemorhaedus* or *Capricornis* sp.) or "Lieng pa;" and having only seen one adult and one dead calf, I will not attempt to describe a very variable species. I have found the droppings on nearly all the limestone hills in Ratburi and Petchaburi, and I have always regarded the animal as a very alert one—quite unlike the apparently rather tame creature which has several times been shot at Koh Lak in Muang Pran. The dead kid was probably less than two months old, and was well covered with soft black hair, with a pure white patch at the base of the neck between the fore legs.

On these hills, also, may be found a Langur, one of the leaf eating monkeys (*Semnopithecus* sp.), black in colour, with poll and tail French grey. It has also bare rings around the eyes, of a pinkish white.

It is a curious fact that tortoises abound on even the steepest of these abrupt hills. Seen in captivity in Europe, the tortoise is a sluggish animal, feeding on succulent vegetables and grasses, and apparently a creature best fitted for a life on the flat. Hills of 100-300 metres elevation, both in the second and third classes of country, have seldom been visited without several tortoises having been found and brought into camp for food, and the coolies call them "Tao

Whaie" or "Tao Pek." These rocky and stony hills are as a rule sparsely covered with a small Bamboo (Siamese, "Mai Ruak") and trees of the *Shorea obtusa* and *robusta* species, with scattered clumps of coarse grass and a few deciduous trees and shrubs. But in the dry season the vegetation on these hills is baked brown; and generally jungle fires sweep over them annually. Live tortoises have been found with their shells scorched, and except for the dead leaves, fallen from the trees, it is hard to find what they feed on during the dry months of February, March and April. Two small ones brought into camp, and tethered by the hinder edges of the shells, died in 36 hours though not exposed to greater heat than they experienced on the hills, but death was probably due to exhaustion from tugging at their tethers.

The Flora of the more precipitous limestone crags is peculiar and mostly deciduous—the yellowish brown appearance of the hills in the dry season being strikingly different to the bright green of the rains. Many of the trees flower in the dry months and have acquired a bulbous trunk, presumably for storage of moisture.

A species of cactus grows up to an elevation of 400 metres—the branches being triangular in section, and both this and the flat oval-branched species occur on the wastes near the coast. Brandis, in his work on Indian trees, only mentions the branched species (*O. dillenii*) or Prickly Pear. Whether or no the three-sided species has been more recently introduced, and not yet run wild in India, I cannot say. A third species, observed only near habitations, has branches up to 1 metre in length, and in section the branch is six-winged, the flutings being about 5 cms. in depth,

Ground orchids, and the tree orchids which occur, are not conspicuous. Small maiden hair ferns, either deciduous or annual, spring up as the rains commence.

THE SLIGHTLY UNDULATING COUNTRY AND THE FOOTHILLS.

The third and fourth classes of country insensibly merge one with the other, and since the Fauna are the same or migrate from one to the other according to season, I will take both together.

Continuing with the Flora. The magnificent "Ton yang" or Wood-oil tree, growing on the river banks or near underground water, as a rule does not occur below the 6 metre line and rarely extends above the 80 metre line from sea level, where it is replaced by *H.*

odorata ("Ton takien") of the same Natural Order. This lines the river banks up to a considerable elevation, usually springing from the bank at summer level, and is used by the Kariangs for making their dug-out canoes.

Of the *Dipterocarpace* or "Ton yang" family, I only identified one (*D. alatus*), but I remember hearing the name ไผ่พลวง, so probably *D. tuberculatus* also occurs.

Large areas occur of the gregarious "Ton teng" and "Ton rang" (*Shorea obtusa* and *siamensis*) and from these areas have been cut most of the sleepers for the Southern Railway. Growing on light rocky or stony soil, the ground beneath these trees is usually clear of undergrowth, except short tufts of grass and a peculiar tree fern with a trunk from 2-3 feet high. Notwithstanding annual jungle fires, these tree ferns burst into leaf, and a species of lily flowers, immediately after the first few rains at the end of April.

Another noticeable tree is the *Xylia dolabriformis* which produces the ไผ่ตง and which, in common with some other Mimosas, has a sweetly-scented flower in March, and a big seed pod, which is frequently heard in January and February suddenly bursting open with a pistol-like report.

In the same Natural Order is another timber tree—the ต้นประดู่ (*Pterocarpus indicus*), which I have found at elevations of 300-400 metres

The Teak tree (*Tectona grandis*) does not occur, in a natural state, this side of Siam, south of 14° 20' N. Lat., where I found it gregarious; but it is frequently planted in the area under review, noticeably at Potaram.

At Khao Pah Lai, south-west of Petchaburi, I found a species of true Pine (*Pinus merkusii*) at an elevation of 400 metres, growing on bare exposed ridges. This species is recorded by Brandis from the Shan States of Burma and also from Sumatra. It is an unmistakable tree, being the only pine in which the leaves occur in clusters of two; but the trees were stunted and poor—having a diameter of only one-third that given by Brandis.

In these two classes of country are found the great majority of the mammals occurring in this area.

Among the Primates, the Agile Gibbon (*Hylobates agilis*) I believe occurs, being replaced in the mountains by *H. lar*. The Crab-eating Macaque is found, generally not far from running water, and also the Pig-tailed Macaque (*M. nemestrinus*) of the same olive-brown colour as the last, but with a tail of some 7-8 in. only; it has not yet been observed at any considerable elevation.

The Northern limit of the Langur already referred to on page 33 seems to be N. Lat. $13^{\circ} 20'$ and it is generally distributed in the plains and the highest mountains. The animals obtained in the plains appeared smaller and darker in colour. North of Lat. $13^{\circ} 20'$ I have never seen it, but its place is taken by a grigged black species, with silvery grey whiskers so long that the ears are almost concealed. I have not yet been able to identify this species, but it was very common in the Me Pachi valley and I had considerable opportunities for observing it during this year. The very young ones are light reddish fawn, with blue eyes, and the dark colour of the adult first appears on the crown of the head. The young were, on 11th April, about 7 in. long and were able to leave their mother and play among the bamboos. This and the previous species have a large vocabulary, ranging from a loud hoarse indescribable bark to a nasal "Kum on," which is repeated with emphasis if the young do not "come on," but they differ from the former species in that they frequently hoot at night. The young are never still, and while their elders are having a midday siesta in the denser tree tops, the young play in the lower branches, and on one occasion an adult came down to stop the uproar below. Both these species will endeavour to micturate on passers-by, whether out of contempt or for other reasons I cannot say, but it is not done through fear in most cases.

Frequently the Langurs and Macaques were feeding together and at such times the Macaques discovered me before the Langurs; more frequently a squirrel gave me away, starting a squittering note of alarm.

The Carnivora are well represented. Tigers, leopards, fishing cats and civets (*Viverra zibetha*) all occur—the Palm Civet (อีเห็น) being particularly common; and a Jungle Cat (*Felis chaus*) was shot close to camp while devouring a hare, and which it showed no inclination to give up or leave. This is a long legged and short tailed cat—

the tail being less than the cat's height at the shoulder and less than half its body length.

Some years ago Mr. Irwin obtained a fair-sized cat of uniform colour in the jungle north of the railway line east of Ban Pong, and which was probably the Golden or Bay Cat (*Felis temmincki*).

A Palm Civet (*Paradoxurus hermaphroditus*) came to my camp kitchen three times within an hour and a half one night, I lying in a chair within 10 yards. On the first two occasions it was chased away by a dog, and on the third it was shot. The object of its visit was a Chinese Francolin.

The jackal is more frequently heard than seen; personally I have only seen young animals, but a fairly good skin of what appears to be an adult was shot by Mr. Butler in the Pran district.

The red Hunting Dog (*Cyon rutilans*) occurs over the whole district and appears to come down to the open country in the rains, probably following the Sambar. It is curious to note that the Siamese have a similar theory to that held by the natives of India as to the hunting methods of this species and, to quote Blanford, "It is believed that the urine of these animals is excessively acrid, that they 'sprinkle with it the bushes through which they drive their prey, and then rush upon the latter when blinded by the pungent fluid. Another version is that they jerk the urine into their victim's eyes 'with their tails.'"

The child-like footprint of the Malay bear I have frequently seen on the hills, as also his wood-boring operations in search of honey.

The big Bamboo Rat (*Rh. sumatrensis*), 19 in. long, digs a burrow on the hill sides but probably is not common, as I have seen only two; and the biggest of the rodents—the Porcupine (*Hystrix bengalensis*)—is generally distributed.

Of the Ungulates, a herd of wild elephants were found this year, in August, only one day's march west of Ratburi, and they are generally distributed, moving about according to season. They feed largely on the big leaved bamboo (ไผ่พาด) and break down two or three culms together—the bamboos snapping with loud reports. Rhinoceros and Tapir occasionally visit this class of jungle during the rains; but the Sladang (กระทิง) remains in the more open jungle throughout the year, as does the กวาง, which I have not yet seen but

but which is probably *Bos sondaicus*

At present, two *Cervidae* only are known from this district, the Barking Deer (*Cervulus muntjac*) and the Sambar (*Cervus unicolor*). It is worthy of note that I have not yet found a young Barking Deer with spots, though Blanford states that the young are spotted. It is more generally distributed than the Sambar in this area and stays on in the drier jungle, which the Sambar forsakes in the hot season; and I also heard it calling one wet gusty night when camped on the watershed in the height of the monsoon at an elevation of 1000 metres. The rutting season is apparently January-February, but is not well defined if the gestatory period of 6 months given by Blanford is correct; for on the 12th February I obtained a young Barking Deer less than 2 weeks old, found in its form at an elevation of 440 metres on a hill side and still rather unsteady on its legs; and also, on the 28th March, my coolie shot a female with well developed foetus, and on the 29th March obtained a female in milk.

It is reasonable to suppose that the young should be born when there is plenty of tender herbage, rather than in the hot months when the female would have to travel considerable distance to and from water in the drier areas; and the fact that some young are dropped in the wet months appears to be recognised by native hunters, for I well remember in Pachin, in the latter part of September, carefully stalking a native hunter who was imitating the bleat of a young Barking Deer.

From this district I have only one skin of a young Sambar about one-third grown, and this has a few indistinct spots on either flank. I also, on the 1st January, in Lat. $14^{\circ} 10' N.$, saw the skin of a young Sambar pegged out to dry and this also showed indistinct flank spots, the general colour of the "skin" being a soft smoky fawn with a very dark back line. Thus, presumably, the form of Sambar found here belongs to the Malayan variety, *C. unicolor equinus*.

Blanford is probably correct in stating that Sambar horns of more than 35 in. long are seldom if ever obtained out of India. The heaviest horn of which I have any record measured 30.4 in. The circumference below the brow tine was 8.6 in. and above that tine 7 in. and above the 2nd or bey tine 5 in. This single horn was purchased by an official for 12 ticals, its enhanced value being due to a small swelling which the vendor asserted was still growing; and the belief is

that as the horn grows so do the fortunes of the possessor. Horns in the velvet also command a large price, being used as a strengthening medicine.

The Mouse Deer (probably *Tragulus javanicus*) is generally distributed in the denser jungle bordering on streams and was never obtained on the hill sides.

Of the primitive Scaly Ant-eater (*Manis* sp.) I have seen only one skin, the specimen being obtained on a hill S. W. of Petchaburi.

Of birds, the Paradise Flycatcher (*Terpsiphone affinis*) was obtained in adult breeding plumage in mixed jungle in April; and around the camp the Black-and-red Broadbill (*Cymborhynchus macrorhynchus*) was very common. The dead specimen gives a poor idea of the true colours—the brilliant azure blue of the beak fading one day after death. This species was never observed in the southern area, where the Dusky Broadbill (*C. sumatranus*) was obtained. Both species are usually sluggish and always absurdly tame.

The Blue-winged Pitta (*P. cyanoptera*) was observed around camp from April to July, in the belt of fairly heavy jungle bordering on the stream. The Great Pied Hornbill and smaller Wreathed Hornbill bred in the Wood-oil trees around the camp.

Of the big Ibis (*Thaumatibis gigantea*) I procured one specimen, of which Mr. Healey has made an excellent coloured drawing, and this is probably only the fourth specimen obtained up to the present time. It is a peculiar bird, being differently proportioned to the other species of the family, all of which appear to be tall or upright birds, with the tarsus usually one quarter to one half the length of the wing; whereas this is a "long" bird, and the proportion of of tarsus to wing is only one-fifth. Also, the habits are different—this species being seen in small open spaces surrounded by jungle, whereas the rest of the family prefer the large swamps and wider plains. It is rare and very locally distributed. In 1910 I saw one south-west of Petchaburi and this year have seen five altogether. Mr. Irwin also reports having observed the bird south of this area in Muang Pran.

The Purple Wood Pigeon (*A. puniceus*) was not obtained north of Lat. 13°. The Orange-breasted Green Pigeon (*O. bincincta*) was plentiful in the northern area and the Green Imperial Pigeon (*C. aenea*) was generally distributed and frequently fed on some species of *Ficus*

in camp. One of these was shot and borne off, as it fell, by a Sparrow Hawk. The Hawk could not rise with the weight of the bird, but glided with it to a perch.

In the open forests of *Shorea*, the Chinese Francolin is most common and, during the rains, very noisy. One I shot this year was perched in a tree upwards of 30 feet from the ground.

Jungle Fowl (*Gallus ferrugineus*) are very common, and the Silver Pheasant (*Gennaeus lineatus*) is generally distributed. I found on April 3rd a nest of this with 8 eggs, the nest being situated some 2 kilometres from water, so far as I know, but it was cavernous limestone country and there may have been some underground pool accessible.

Peacocks (*Pavo muticus*) were abundant, and a number of eggs were hatched out. Except for the morning and evening call at roost, the Peacock is a very silent bird; but these hand-reared chicks were cheeping and calling throughout the day and never happy if left alone. They became a nuisance in office. It was amusing to watch chicks of 3 weeks old erecting stumpy tails and lowering wings to intimidate a young Macaque, or a ground lizard (Siamese, "Yaa" ย่า); or when a little older, trying to frighten a Woodpecker which had excited their wrath by tapping on dry bamboo poles.

The "Yaa" (*Liolepis belliana*) are found everywhere in light, warm, dry soils, and in the cleared area of my camp there were a number of them. The big ones seemed to stay below ground during bad weather—stopping up the entrance hole from beneath. They run very fast and have the habit of sitting up to observe anything at a distance. The female, I believe, tends the young when hatched out; as I remember seeing one dug out with a number of quite young lizards in the same burrow.

The brown lizard, common in Bangkok gardens, was found at all elevations and I shot a Monitor (*Varanus nebulosus*, Siamese, ตะกวด Takuat) at some 900 metres elevation on the boundary, which had in its mouth one of these lizards. They (*V. nebulosus*) were breeding in July, and I found the eggs lightly covered with loose earth.

[To be continued.]