Field Notes on some Siamese Birds

By G. C. MADOC, M.B.O.U.

The following notes are a résumé of the detailed records made during my spare-time observation of birds whilst stationed in BANGKOK for a period of almost exactly two years (November 1947 to November 1949). During that period I visited various parts of the kingdom: CHIENGMAI in the far north, SONGKHLA in the far south, and NAKHORN SAWAN (Paknampho) in the middle west. But except at the last mentioned place I was too busy to make many useful observations; therefore I have largely excluded from these notes such sketchy records made during flying visits. In particular, I have discarded nearly all observations made in the hill-country around CHIENGMAI; because there I ran into a confusion of genera which were entirely foreign to me, and which I had not sufficient time to study or even to identify with certainty.

So most of these notes are concerned with the birds of the Central Plain—the great delta of the Mae Nam Chao Phya, extending from LOPBURI, SARABURI and PRACHINBURI in the north to the northern shores of the Inner Gulf of Siam in the south, and bounded on the west by the MEKLONG River and on the east by the PAKONG River. Most of this area is within easy reach of BANGKOK by road, railway or canal. A very great proportion of it is padi-land and marsh, criss-crossed by canals and irrigation ditches. Except along the banks of the Mae Nam Chao Phya, and around the towns and villages, there are few trees; it is absolutely flat and open country, parched in the dry season and inundated during the rains. These two seasons are: the Dry Season from December until May, and the Wet Season from June until November. At the beginning of the dry season there is an ill-defined and undependable spell of cool weather.

These notes are by no means fully representative of the ornithology of the Central Plain; two years is an entirely inadequate period for a comprehensive study of such a subject. I concentrated mainly on nidification, because that is the aspect of ornithology which I and my assistant are best qualified to study. And I much neglected migration because I could not guarantee spare time for the really regular observations which such a subject requires. Again, this open country provided such an attractive contrast to the well-wooded terrain of Malaya where I have been watching birds for fifteen years, that I concentrated on it and rather neglected the strips of wooded country.

My principal guide has been E. G. Herbert's "Nests and Eggs of Birds in Central Siam" (Journal of the Natural History of Siam 6, 1923–24). But I did not follow closely in his footsteps, for improved communications have opened up new areas and made them more accessible than some of those on which Herbert concentrated; the pursuit of his profession afforded him particular opportunities for study along the banks of the Mae Nam Chao Phya; I found it easier to work along the new highways. In particular, I scarcely touched the orchard belt on the west (THONBURI), bank of the river, opposite BANGKOK, comprising Herbert's favourites —BANGLAMPOO, BANSAKAI and SAMRAY—and I neglected equally the SAMKOK district between PATHUMTHANI and BANG PA-IN.

A great deal of spade-work was done for me by Enche Abdul Majid bin Long, my Malay assistant who has worked with me since 1936 and who accompanied me to Siam. He has great experience of bird-watching and is a reliable and conscientious observer. Nevertheless, his principal function has been to locate nests and then to take me to see them when I could spare the time; only on the few occasions when it has been impossible for me to get away have I entrusted Majid with the tasks of shooting a parent for museum identification and of making full notes of the situation, bird-behaviour, etc. This is no reflection on his reliability; it is merely that I cannot bear to let somebody else have all the fun and to reduce myself to the function of a mere amanuensis.

For a year Majid was assisted by Aziz, a younger Malay whom I recruited locally. This man had no previous experience of this kind of work, and he nearly always acted under direct supervision; but he developed into a fairly accurate observer.

The following are the names of places in the Central Plain which are mentioned in the text:—

A. Along the highway North from BANGKOK,—

RANGSIT, a small village on an important canal running west from the Mae Nam to the PAKONG River.

SARABURI, a small town at the northern margin of the Plain and on the PASAK River, a tributary of the Mae Nam.

LOPBURI, a garrison town about 40 miles north of Saraburi.

PRACHINBURI, a town on the northern margin of the Plain, and on the road and railway running East to Indo-China.

B. Along a canal running North-East from BANGKOK,—

BAN HUA MARK, a small village 7 miles from Bangkok.

MINBURI, a large village about 15 miles from Bangkok, and connected with the Lopburi highway by a fair-weather road.

BAN NONG CHOK, a small town about 30 miles from Bangkok.

HUA TAKAE, a village on the railway to Indo-China, and on a branch-canal south of Ban Nong Chok.

C. On the coast of the Inner Gulf,—

PAK NAM (Samut Songkram), a small town at the mouth of the Mae Nam Chao Phya.

BANG POO, a seaside resort on the coast road, 6 miles east of Pak Nam.

PAKONG Estuary, at the north-east corner of the Inner Gulf.

TACHIN, a town on the river of that name, and about 15 miles west of Pak Nam. It is on the light railway from Bangkok to the mouth of the Meklong River.

NA KOK, a salt-manufacturing village on the light railway between Tachin and Meklong.

D. West of BANGKOK,—

KANCHANABURI (Kanburi), a town 80 miles west of Bangkok, on the Meklong River and at a point where the open Plain marches with the hill-jungle reaching to the Tenasserim frontier.

E. Along the Mae Nam Chao Phya,—

PATHUMTHANI, a small town about 20 miles north of Bangkok.

SAMKOK, a district covering most of the river between Pathumthani and Bang Pa-In.

BANG PA-IN, a small village where the King's summer palace is situated. It is about 40 miles above Bangkok.

AYUTHIA, the old capital of Siam, 50 miles north of Bangkok.

Outside the Central Plain, the following places are mentioned:—

NAKHORN SAWAN (Paknampho), an important town at the confluence of the Mae Ping and Mae Yome rivers. Below the junction the united waters become the Mae Nam Chao Phya.

KAMPHAENG PHET, a small town on the Mae Ping, about 40 miles North of Nakhorn Sawan.

RAHAENG, a town on the Mae Ping about 20 miles above Kamphaeng Phet.

CHIENGMAI, the terminus of the Northern Railway. It stands on the Mae Ping. There are rapids and gorges between Chiengmai and Rahaeng.

HUA HIN, a well-known watering-place on the west side of the Gulf, about 120 miles from Bangkok.

PRANBURI, a small town about 15 miles south of Hua Hin.

SONGKHLA (Singgora) the most southerly port on the east coast of Peninsula Siam.

KOK SI CHANG, a large island, the most northerly of those on the east side of the Inner Gulf. It forms the deep-water anchorage for ocean vessels visting Bangkok, and is about 30 miles from Pak Nam.

KOK LEUM YAI,
KOK PHAI,
KOK KHREUNG BADAL,
KOK MAN WICHAI,
KOK RIN,

Listed from north to south, these islands comprise the outer chain extending southwards from Kok Leum Yai, which is 10 miles south of Kok Si Chang.

KOK RANG KWIEN, a rocky islet lying 10 miles east of Kok Rin, between that island and the eastern shore of the Inner Gulf.

KOK HIN CHALARM, a barren rock, most southerly of the islands extending from Laem Samae Sarn, which is a cape forming the south-eastern extremity of the Inner Gulf.

As I have not access to all lists of birds recorded from Siam, I have been unable to select exclusively fresh information from my own notes. On this sea-voyage, during which I have compiled this summary, I have used for reference:—

DEIGNAN, H. G., 1946. The birds of Northern Thailand. *Bull. U.S. Nat. Mus.*, 186.

GIBSON-HILL, C. A., 1949. An annotated checklist of the birds of Malaya. *Bull. Raffles Mus.*, 20.

HERBERT, E. G., 1923–24. Nests and eggs of birds in Central Siam. *Journ. Nat. Hist. Soc. Siam*, 6.

RILEY, J. H., 1938. Birds from Siam and the Malay Peninsula in the U.S. Nat. Mus. collected by Drs. Hugh M. Smith and William L. Abbott. *Bull. U.S. Nat. Mus.*, 172.

G. C. Madoc.

m.s. *Meonia* at sea.
12 *December*, 1949.

Family COLYMBIDAE

Podiceps ruficollis philippensis (Bonnaterre). Little Grebe.

Although I have seen this bird on only a few occasions, this does not necessarily mean that the species is uncommon, for it is a skulking creature, very easy to overlook. I have records of it in January, February, June, July and December, all on ponds in the swampy Central Plain. On one occasion I watched a single bird diving and swimming in an overgrown pond. I watched for a long time, and noted that none of its dives exceeded ten seconds in duration.

I have two records of nests. On 25 June, 1948 I found a nest on a small patch of fairly open water in the middle of a swamp in which reeds were growing to a height of about eight feet above the water—which was about three feet deep. The nest was close to the margin of the open water. It was a heap of floating, dead, vegetation about fifteen inches diameter at water-level. The eggs were completely hidden under the nest material which was piled up in a shallow pyramid. Under this covering there were five eggs laid in a slight depression five inches in diameter. One of the eggs was fresh; the others were in various degrees of incubation. The fresh one was unsullied white; the others were stained with orange to a degree roughly corresponding with the state of incubation. The shell is glossy and unusually thick; viewed through the blow-hole it is sea-green. They are long pointed ovals. The average dimensions are 1·43 × 0·96 inches. I did not see either of the parents on this occasion.

The second nest was found by Abdul Majid on 18 July, 1949. I was unable to visit it. It was on a pond only half-a-mile distant from that used last year. It contained a single egg, which Majid took as peasants were about to run their ploughs through the pool in preparation for rice-planting. The egg was covered over with nest material. It was quite fresh and unsullied. Last year's eggs were unusually long and peculiarly pointed at both ends: this egg actually had a very sharp point at one end. It measured 1·44 × 0·93 inches.

I was unable to check with the local peasants whether the name *pet phi* actually is used locally for this species.

These nests were found at the 77th kilo., Bangkok—Lopburi highway.

Family PHALACROCORIDAE

Phalacrocorax pygmeus niger (Vieillot). Lesser Cormorant.

A common species in the Central Plain, both in the brackish swamps on the coast and also far inland. I met it as far inland as NAKHORN SAWAN (PAKNAMPHO) on the only time I visited the place: there was a flight of seventeen flying high up the Mae Ping in V-formation. I have watched individuals swimming and diving for food in the shallow pools in the padi-fields; the dives were of very short duration—not longer than five seconds. At most times of the year the birds are seen in small flocks; but my rather limited observations indicate that towards the end of the dry season when many of the pools have dried up they often hunt alone. At such times I have seen a daring individual swimming and diving in the very shallow and restricted waters of a drainage channel beside a busy highway.

At the beginning of November, 1948, I found a breeding colony in the grounds of the temple at BANG PA-IN. By the end of the month four huge "bo" trees were crowded with nests and their branches had been stripped of every leaf and were white with droppings. I estimated that there were not less than two hundred nests in the colony. Breeding amongst them were also five or six pairs of *Anhinga melanogaster* and about four pairs of *Ardea cinerea rectirostris*. The breeding season was quite short, as the birds fortunately enjoyed the protection of the abbot; only a few nests appeared to have been completed on 17 November, 1948, but the colony appeared to be deserted (except for *Anhinga* and *Ardea*) by 26 December, 1948.

Most of the birds were building when I visited on 17 November, 1948. Apparently only one bird of a pair fetches material; the other sits on or close to the nest. Although every

nest had its guardian, there was plenty of pilfering and we saw several fights occasioned by a bold bird grabbing material from a nest which was not its own. There was a good deal of noise—a weak croak "cro' cro' cro' .....". Birds were ranging far afield in search of material; I saw several flying with material in their bills more than a mile from the colony. Although the colony was to prove empty on 26 December, 1948, birds still were carrying creepers to the nest on 28 November, 1948: maybe they continue to add material during the incubation period. On 17 November, 1948, of those couples which I was able to watch closely, the bird which collected the material would place it on the edge of the nest and fly away; the other would then take the offering and thrust it into the structure. The lower part of the nests was composed of "cheurk khao" (unid.)—a dark green, grass-like creeper which grows in the drier parts of padi-fields. There were a few dry twigs in the middle of the structure. Other material taken from a nest which I took apart was: two grasses, *phak praro* and *phak pet.* which I identified through the Malay names supplied by Majid and Aziz as *Hemigymnia* sp. and *Commelina* sp.; a third grass called *ya phai* (= *bamboo grass:* unid.); a small twig with dead leaves called *sa-kaa* (apparently *Combretum* sp.) and several pieces of a fibrous twig called *wa* which I took to be *Eugenia* sp. The nests were quite compact structures about fifteen inches diameter and five inches thick. There was a shallow depression for the eggs, lined with the *Hemigymnia.* Without exception the nests were built far out in vertical or horizontal forks of boughs not less than forty feet from the ground.

On 17 November, 1948, in addition to the birds which were building and those which possibly were guarding eggs, there were quite a number which were crouching on a bough in what I presume was the female's courting posture; the body and neck were much flattened and the wings were half-spread. There were also many birds which spent their time aimlessly making short sortie flights from the nest-trees. They would swing out over the temple, flapping their wings rapidly, and then go into a shallow glide as they turned sharply preparatory to flapping back to a perch. I could not determine whether this was a courting display. I did not see any pairs copulating.

On 24 November, 1948 most of the nests contained eggs; but in one tree most of the nests contained young birds some of which were covered with white down on the underparts. On this day Majid and Aziz collected two clutches each of two eggs and one single egg. They are very variable in size; there being considerable differences even between two eggs of a clutch. The single egg measured 1·95 × 1·27 inches. One clutch of two

measures 2·10 × 1·20 inches and 1·97 × 1·19 inches, the other measures 2·05 × 1·30 inches and 1·99 × 1·28 inches. The shell is a glossless pale blue, thinly covered with a chalky deposit.

The Siamese name for the Cormorant is *kah nam* (= water crow).

Phalacrocorax carbo sinensis (Blum.). Common Cormorant.

On 9 May, 1948 I saw a single bird several times in the brackish marsh close to the coastal mangrove at PAK NAM.

On 27 December, 1948 I saw a party of five or six Cormorants perching on the seaward edge of the mangrove in the PAKONG estuary. At the time I identified them as *P. pygmaeus;* but I note that Ridley (U.S. National Mus. Bull. 172) states that the latter species does not usually occur along the coast, so I may have mis-identified the larger species.

Family ANHINGIDAE

Anhinga melanogaster Pennant. Indian Darter.

Quite a common bird in the suburbs of BANGKOK and elsewhere in the Central Plain. On one occasion I saw a single bird perching on the seaward side of the mangroves in the PAKONG estuary in company with some Cormorants. The bird may be seen fishing in the deep pools in the suburbs or in the quite shallow ponds which remain in the padi-fields in the dry season. The carriage of the long and sinuous neck when swimming and diving is disgustingly serpent-like, and the bird is able to submerge without the slightest splash and scarcely a ripple. After swimming, the bird usually will stand on the bank in the Cormorant-like heraldic attitude until its spread wings are dry. In the evenings I have seen parties of as many as fifteen birds wheeling over the suburbs preparatory to roosting in the tops of tall trees. Flight usually is rapid and direct, an alternate flap and glide; but one exceedingly hot noon I saw two Darters soaring and wheeling at a great height and with all the dexterity of Frigate Birds; the tail feathers were fully spread; the wings scarcely moved. On this and several other occasions I have observed that the yellow bill and almost entirely white head and neck are nearly invisible against the glaring sky; as a result the front part of the body appears truncated and assumes the shape of some gigantic Swift.

In August, 1948, fifteen pairs of Darters built their nests in the tops of very tall casuarina trees in a garden at Wireless Road, BANGKOK. None was less than seventy feet from the ground, and they were built on the slender, almost vertical, uppermost branches. On 21 August, 1948 Majid and Aziz scaled one of these trees and collected three clutches of fresh eggs: four, two

and one eggs, respectively. They average 2·21 × 1·58 inches. Greatest variations in length are from 2·46 (× 1·62) inches to 1·97 (× 1·60 inches); and in breadth are 1·71 (× 2·26) inches and 1·50 (× 2·14 inches). The ground colour is pale bluish-green, but the eggs are very thickly covered with a chalky deposit. Viewed through the blow-hole, the shell is deep bluish-green.

The nests were large loose masses of casuarina twigs complete with their pine-needle-like leaves—apparently picked fresh. They were lined with fresh pinnate leaves of the Rain Tree (*Enterolobium saman*).

Even though the eggs were newly-laid, the birds were sitting very closely. Every nest had either a bird sitting in it or one standing guard alongside. This undoubtedly was due to the marauding Crows (*Corvus macrorhynchus andamensis*) which hung about most of the day seeking an opportunity to steal an egg. That they had had some success was obvious, for we found about half-a-dozen shells of obviously fresh eggs lying beneath the trees.

On 31st August, 1948 some of the nests in this colony contained young in down—white down, with the black wing quills just starting to sprout.

In 1949 the Darters did not return to build in the Wireless Road colony.

In November, 1948, I found five or six pairs with eggs or young in nests in the middle of a huge colony of Cormorants (*Phalacrocorax pygmeus niger*) at BANG PA-IN. Here again, the Darters were not too happy. I did not observe that the smaller Cormorants were at all aggressive, but they were very numerous, and the Darters showed their feelings by making frequent vicious jabs at their neighbours with their stiletto-like bills. One clutch of two eggs was taken; they measured 2·18 × 1·33 inches and 2·09 × 1·33 inches.

The usual call of Darters at their nests is a harsh *che'-ke'-Ka* or *che'-ke'*; but when particularly harrassed by Crows I have heard them making extraordinary noises like a squeaky slate-pencil.

The Siamese name for the Darter is *nok aeng wua.*

Family ARDEIDAE

Ardea cinerea rectirostris Gould. Grey Heron.

In the period November to May this bird is quite frequently seen in small numbers both in the coastal marshes and in the padi-fields of the Central Plain. But both in 1948 and 1949 I noted that the species absented itself from these areas during the period June to mid-November. I also observed that the

birds confined themselves to the cultivated ricefields; I never saw them in the marshy grazing-lands around the 77th kilo., Bangkok-Lopburi highway. The period at which the species was present coincides with the dry season, and the period of its absence coincides with the wet season.

In November, 1948, I found a few nests of this Heron amidst the scores of nests of the Cormorant (*P. pygmeus*) at BANG PA-IN. On 14 December, 1948 Majid and Aziz climbed the trees and reported three nests: two containing young birds and a third with two much-incubated eggs. On 26 December, 1948 there were five nests with Herons in attendance, but we did not ascertain whether they contained eggs or young. On 26 January, 1949 there was still one nest occupied; it contained small nestlings.

The local Siamese name is *nok ka-sar*.

Ardea purpurea manilensis Meyen. Purple Heron.

I have seen birds of this species on only two occasions: a single bird in January and a pair in May. On both occasions they were far out in the padi-fields of the Central Plain between RANGSIT and AYUTHIA.

I was not able to ascertain the vernacular name.

Butorides striatus javanicus (Horsf.). Little Green Heron.

It is perhaps worth recording that although both I and Majid (who knows the species well) paid many visits to the typical coastal and riverine haunts of this species, we never once saw a single bird.

Ardeola bacchus (Bp.). Pond-Herons.

Ardeola grayii (Sykes).

Ardeola speciosa (Horsf.).

I group three members of this genus together because I took no steps positively to distinguish between them—even in the nuptial dress, which is worn locally between April and July. I have a note of one bird whose crown and nape were just beginning to turn to dark chestnut as early as 3 April, 1949. I have no dated records of the resumption of the winter dress.

On 21 August, 1948 Majid and Aziz visited the village of BAN NONG CHOK, on a canal about thirty miles north-east of BANGKOK. There they found Pond-Herons (species not ascertained) breeding in company with the Cattle Egret (*Ardeola ibis coromanda*) and an unidentified Egret (probably *Egretta garzetta*). All nests then contained young birds. Unfortunately I was never able to visit this colony.

Birds of this genus are common in the padi-fields of the Central Plain throughout the year; but their numbers seem

to be greatly augmented from mid-October until late in the dry season—about early April. The water-level in the padi-fields is at its highest in October and November, and I have observed that Ardeola and Bubulcus are the only two genera which seek their food in the padi at such times. Ardeola seems to be much more light-footed than the Egretta genus: I have seen birds alight and perch quite happily on a floating lily-leaf or even a tiny "raft" of dead grass drifting on a pond.

I was not able to ascertain the vernacular name of the genus.

Ardeola ibis coromanda (Bodd.). Cattle Egret.

Birds of this species may be seen in the padi-fields and grazing-grounds of the Central Plain throughout the year. They are most numerous between the months of October and May. The breeding plumage begins to appear as early as 7th March and is at its best at the end of May. Some birds have already lost it by mid-August, and by early October all trace of it is gone. Though this Cattle Egret shares the padi-fields with the Pond-Herons during the wettest of the wet season, it is more common in the flooded grazing-lands on the northern fringe of the Central Plain; the water is no less deep there, but there are plenty of cattle about.

Majid and Aziz reported nests containing young birds at BAN NONG CHOK on 21 August, 1948. On 11 June, 1949 I visited a colony much nearer BANGKOK, at BAN HUA MARK, and on 21 June, 1949 Majid and Aziz collected eggs there. This was a compact colony of Cattle Egrets and Little Egrets (*Egretta garzetta*) confined to one small but dense clump of bamboo on the bank of a canal. The colony was protected from predatory peasants by the landowner. There were about thirty nests in all, the majority being Cattle Egrets. Nests were at heights between 10 and 30 feet above the ground. The nests were indistinguishable; both species built flimsy platforms of bamboo sticks and bamboo leaves. Three clutches each of two eggs were taken. They measure 1·75 × 1·28 inches and 1·68 × 1·27 inches; 1·71 × 1·30 inches and 1·70 × 1·23 inches; and 1·68 × 1·24 inches and 1·65 × 1·30 inches. These eggs are bluish-green and quite smooth, whilst those of *Egretta garzetta* collected at the same time are bluish-white and very chalky—as are eggs of the latter collected by me elsewhere. This is contrary to the observations of Mr. E. G. Herbert (Journal of Nat. Hist. Soc. Siam, Vol. VI). Mr. Herbert records *E. garzetta* eggs as a deep shade of bluish-green, and those of *Ardeola* as almost white.

The name used for this species is *nok yahng*, which is also employed for all other Ardeidae of white plumage.

Egretta alba modesta (J. E. Gray). Large Egret.

Not uncommon in the padi-fields of the Central Plain, but in far smaller numbers than *E. garzetta*. It mixes freely with the latter species but never forms flocks of its own kind. Like *E. garzetta*, very few birds remain in the padi-fields after the conclusion of the dry season. I was not able to ascertain its breeding place: in Malaya it breeds in thick mangrove forest, but there seems to be no really dense mangrove around the shores of the Gulf of Siam.

In February, 1949, I saw large numbers of Egrets far out on the tidal mudbanks of the Inner Gulf near BANG POO; they appeared all to be of this species, but the distance was too great for a positive identification. On 27 December, 1948 I found a single bird perching on the stakes of a fish-trap out in the Gulf; it was at least 5 miles from the nearest land.

The Siamese name is *nok yahng*.

Egretta garzetta garzetta (Linn.). Little Egret.

By far the most common member of the genus in the Central Plain. Great numbers will be seen in the padi-fields in the dry season, but they almost disappear from May until late November.

Majid and Aziz reported Egretta (almost certainly of this species) with young in a small colony at BAN NONG CHOK on 21 August, 1948. On 12 February, 1949 I visited a farm on a bank of a canal near HUA TAKAE. The farmer, an elderly Peguan, "protects" a colony of Little Egrets which breed in a thick clump of bamboo alongside his house. He told me that he has forbidden shooting there for 10 years; but the birds pay fairly heavily for their tenancy, as he collects their eggs for sale. This day there were not more than 10 nests occupied; but the old man told me that the birds had been laying steadily since the "peak" of the laying season—which he says was in July!

He told Aziz that his annual profit on the sale of these eggs is between 250 and 400 ticals (60 ticals = £1). Now he charged me for the privilege of collecting a few clutches the price of 20 satang per egg (three-fifths of a penny). One ought to presume that he charged a foreigner several times more than his normal price; but even supposing that 20 satang *is* his normal price, that represents between 1,250 and 2,000 eggs—taken from a colony occupying a bamboo grove smaller than a tennis-court.

The bamboos were about 30 feet high, and the nests were placed at heights between 15 and 30 feet above the ground. They are small platforms of dead sticks without a lining. There were clutches of four and three eggs in the various nests.

I was permitted to take one clutch of four and two clutches each of two eggs, but there is some doubt whether all the eggs of the largest clutch were taken from the same nest, as they were collected at different times. Fresh eggs were clear greenish-blue, but incubated ones were whitened by a calcareous deposit.

At the BAN HUA MARK colony, on 21 June, 1949, Majid collected one clutch of two eggs and four single eggs—all fresh.

All these eggs were much whitened with the calcareous deposit. They were very slighter larger, on the average, than those of the over-exploited HUA TAKAE birds. The average for a total of 14 eggs from the two colonies is 1·70 × 1·29 inches. Extremes of length are 1·78 (× 1·35) inches and 1·62 (× 1·25) inches; and of breadth are 1·37 (× 1·72) inches and 1·22 (× 1·71) inches.

I have no dates for the assumption of the breeding plumes. Parents at the BAN HUA MARK colony on 11 June, 1949 were in full nuptial dress; a bird shot in the padi-fields on 21 July, 1948 had the plumes almost worn away; I have no information on the dress of the birds at BAN NONG CHOK on 21 August, 1948; the birds at the HUA TAKAE colony on 12 February, 1949 were definitely not in breeding plumage.

The local Siamese name is *nok yahng*. I also record, but do not accept, the rendering *nok yawng* given to me repeatedly by a Siamese peasant in the Ayuthia area.

Egretta intermedia intermedia (Wagler). Lesser Egret.

I never satisfied myself that this species does occur in the Central Plain. I am not confident that I could distinguish the species in the field.

Demigretta sacra (Gmelin). Reef Heron.

On 21 and 22 May, 1949, I did a short cruise around the outer chain of rocky islands on the east side of the Inner Gulf of Siam. I found this species very common, and more than a third of the birds I saw were in the white plumage—which is uncommon in Malaya. I found nests on several of the islands; but only one was occupied. This was an inaccessible nest built over the mouth of a huge cave on Kok Leum Yai. A bird in grey plumage was sitting tight, but I could not ascertain whether the nest contained eggs or young. On "White Rock," an outlying skerry of Kok Rin, I found an uncompleted nest in the thick foliage of a stunted tree. This was a normal situation; but on Kok Rang Kwien, where there were equally suitable trees and bushes, we found two nests placed on bare rock under the dense cover of stunted thorn bushes which acted as a roof ten

inches above the nest. One of these nests contained a broken egg-shell.

It was on Kok Rang Kwien that I saw a bird in white plumage fly determinedly at a Sea Eagle, *Haliaeetus leucogaster*, which was perching on the top of the light-beacon. The Eagle did not dispute its claim, and immediately vacated the perch in favour of the smaller bird.

I did not ascertain the Siamese name for this species.

Nycticorax nycticorax nycticorax (Linn.). Night Heron.

In the Central Plain this species appears to be very localized. Apart from a single bird seen on the Mae Ping river below KAMPHAENG PHET on 14 April, 1949, I have seen birds only between the months of November and February inclusive. Early in November, 1948, a great number of Night-Herons (more than one hundred) suddenly appeared one morning in the grounds of an old palace in the Prathumwan district of BANGKOK. There they settled in the trees around a small lake. They were fairly active in the daytime, particularly as they had to ward off the attacks of Crows for the first few days after their arrival. At night they could be heard flying overhead—most of them apparently leaving the roosting-place a few minutes after sunset and flying in the direction of the nearest padi-fields. Most of them were in the dull brown immature plumage. I have no note of the departure of these birds from Prathumwan, but certainly they had left by the end of February.

On 12 February, 1949 I visited a breeding colony of Egrets (*E. garzetta*) near HUA TAKAE, and found about a hundred Night-Herons roosting in the trees where the Egrets had their nests. Here there was a greater proportion of adult birds than at Prathumwan. Definitely they were not breeding, and the landowner said he did not know where the species breeds. When disturbed, most of them rose in a compact flock and began circling widely in formation at a height of about 60 feet: they made no attempt to fly to another spot.

The only other place where I met the species was in the coastal mangrove between PAK NAM and BANG POO. On 29 February, 1948 at 1100 hours on a hot sunny morning I watched a party of about 12 birds flying backwards and forwards over the treetops. They were flying almost wing-tip to wing-tip in a very shallow inverted V-formation. In mid-December a friend reported great numbers in the same area of mangrove.

Majid and Aziz heard rumours of a breeding colony in the grove of a temple far up some creek in the BANG PA-IN area; but they were unable to ascertain either the exact locality or the breeding season.

I established that the Siamese name is *nok khwaek*.

BITTERNS

Bitterns seem remarkably uncommon in the Central Plain; I have seen none in the padi-fields or the coastal marshes, and very few in the marshy grazing-lands at the northern margin of the plain. Never once was I able to make a satisfactory visual identification of the few birds I did see. On 25 July, 1948 I was shown a nest at the 77th kilo., Bangkok-Lopburi highway. It was a thick platform of sedge-grass in the midst of a dense clump of sedge. It contained one egg. A companion saw a Bittern leave the nest, but was unable to identify the species. The local Siamese called the bird *nok yahng daeng* (*nok yahng* = Egret, *daeng* = red).

Family CICONIIDAE

Anastomus oscitans (Bodd.). Openbill Stork.

This is a common species in the Central Plain and I have seen it in every month of the year. The season for assumption of the black and white breeding plumage seems to be rather variable, and is a point worthy of further attention; two years of observations was not long enough for me to draw any conclusions. For what it is worth, I list below the dates on which I noted plumage:

10/ 1/48.	Grey plumage, large numbers.
29/ 5/48.	Mostly in breeding plumage, but a few still greyish.
1/ 6/48.	All in breeding plumage, large numbers.
16/ 6/48.	All in breeding plumage, nesting.
22/ 8/48.	All in breeding plumage, 6 birds.
17/11/48.	Several solitary individuals in grey dress, and two small parties in breeding plumage.
9/ 1/49.	Visibility difficult; at least one of a small party was in breeding plumage.
13/ 4/49.	Breeding plumage, a party of four near KAMPHAENG PHET, West Siam.
10/ 9/49.	Three birds in breeding plumage at a disused nesting site.
11/ 9/49.	About 15 birds feeding in padi, mostly in grey dress.

Again, the breeding season seems to be rather variable. I presume that this is affected by two factors: (1) weather, and (2) human interference. The facts are that on 16 June, 1948 I visited a small patch of jungle around Wat Bote, near PATHUMTANI, and found at least 300 of these birds, some of which had already begun to build nests. (There had been no nests on 4 June, 1948). Visiting again late in July, I found about 1,000 birds, most of which were building nests. In mid-August "sportsmen" with rifles staged a battue and caused the birds completely to abandon the colony. The birds then moved downriver and established a colony on the other bank,

in the grounds of Wat Khoke. I was unable to examine this colony; but at the end of September I travelled up-river by launch and saw that the birds were very busy around their nests in the new colony. And further up the river we passed a small colony much closer to the bank, and could see that the Storks actually were sitting on their nests as though incubating.

So much for 1948; and I think it safe to assert that, had it not been for human interference, the breeding season would have been June to August at Wat Bote. Now in 1949 Majid and Aziz sought the Openbills from June onwards, and on 11 September, 1949 I visited both Wat Bote and Wat Khoke. There were no nests: Wat Bote was completely abandoned and Wat Khoke was infested with between five and ten thousand Flying Foxes. On 15 September, 1949 and the following two days Majid went up river by boat, covering the whole stretch from below Wat Khoke almost to BANG PA-IN. He found no nests, and the local peasants told him that the birds would not start nesting for at least another month—not until after the rice was all planted. They pointed out to him that scores of Openbills were down in the padi-fields feeding close to where the rice-seedlings were even then being transplanted. He was shown a favourite nesting site—at Wat Pai Lom. There is a sundry-goods shop there, and the Siamese owner climbs the trees and collects the Storks' eggs for sale. He had just sold out the last of his 1948 harvest. In the second week of October Majid retraced his steps. He found no activity at Wat Pai Lom, but a large number of Storks had started building once more at Wat Bote. Majid and Aziz paid a final visit to Wat Bote on 30 October, 1949, expecting to find that eggs had been laid. To their disgust they found the colony deserted once again; they were told that the Buddhist abbot of the temple actually had requested some "sportsmen" to come out from Bangkok and break up the colony by gunfire. The venerable gentleman objected to the strong odour of the Openbills' droppings. Aziz climbed two of the giant *Dipterocarpus* trees in the hopes of finding an egg, but all the nests that he could reach were empty.

So it would appear that in 1949 the Openbills did not attempt to build until the middle of October—four months later than when they started in 1948. The only explanation I can offer is that the 1949 monsoon was delayed in starting and did not develop as rapidly as in 1948. I believe that in some areas the peasants had to delay their planting from July until October.

In the daytime these Storks will be seen out in the open padi-fields, either feeding in the soft muddy patches or wheeling at a great height in the sky. About half-an-hour before sunset they fly to their roosts in the high trees, most of which are

on the river-banks or in the grounds of temples. One evening I watched several dozen flying in to roost in a group of palmyra palms in the middle of an open field. There were already two or three King Vultures (*Torgos calvus*) occupying perches on the fronds of one of these trees. The presence of these fierce and disgusting birds of prey did not deter the Storks; they crowded into the top of the palm until at length sheer weight of numbers drove the vultures to seek peace elsewhere. On another occasion I saw Vultures and Storks feeding together amicably in the fallow padi-fields. I could not ascertain the nature of their food, but they were not crowded together, so I presume it was not a corpse.

The Siamese name is *nok park harng* (= bird with a parted bill).

Dissoura episcopus episcopus (Bodd.). Whitenecked Stork.

I came across this bird only once on 14 April, 1949 on the great sandbanks of the Mae Ping, below KAMPHAENG PHET. Apart from the Openbills, I saw no storks in the Central Plain or around the shores of the Inner Gulf.

Family ANATIDAE

(I have no observations of non-resident ducks as I never went out with shooting-parties during the winter months).

Dendrocygna javanica javanica (Horsf.). Whistling Teal.

In the wet season I have come across this teal in all parts of the Central Plain—particularly in the grazing areas where there are numbers of quiet pools screened by thick margins of tall grass. I am told that in the dry season most of the birds make a local migration to the coast: I had only one personal experience of this—on 27 December, 1948, when I saw a party of about fifty teal resting on the tidal mud-flats at the mouth of the PAKONG River.

In the marshy grazing-land at the 77th kilo., Lopburi highway, I saw several nests in the tufts of lush grass. As the eggs are greatly in demand by the local peasants, I saw only one clutch which could be presumed to be complete: it contained ten eggs; local peasants told me that between ten and fifteen eggs is the usual number.

The Siamese name is *pet nam* (= water-duck).

Nettapus coromandelianus coromandelianus (Gmelin). Cotton Teal.

In the wet season this little duck is just as widely spread over the Central Plain as the Whistling Teal, but the flocks I have seen are much smaller—never more than ten individuals. very often there is a small group of Cotton Teal amongst a

much greater number of "whistlers". The Cotton Teal seems much more wary than the larger bird; it is usually the first to give the alarm. In a mixed flock, the Cotton Teal usually get up first, and they form a compact spearhead to the larger mass of Whistling Teal.

I asked many peasants where this species breeds. Always I got the same reply: that the Cotton Teal always nests in a building (usually a temple) in this part of the country. On 21 July, 1948 I was told on good authority that there were nests with eggs in the roof of the temple called Wat Nong Khae, at the 80th kilo, Bangkok-Lopburi highway. Unfortunately I was then unable to visit the place, and when I sent Majid a few days later he was told that all the eggs had been taken. On 14 October, 1949, after several visits to Wat Nong Khae, Majid at last was permitted to see a nest within the temple precincts. It was under the eaves of the schoolhouse—which was in daily use. The school building was really a pavilion without walls, the roof being raised on pillars. Under the eaves, a shelf of corrugated iron projected inwards. The Teal had made its nest on this ledge; to approach it she had to fly into the pavilion and swoop up to her nest where she sat a few feet above the heads of the school children.

The nest appeared to have been used twice previously, for it consisted of three distinct layers of different ages. It was 6 inches high, and the egg-chamber was about 6 inches in diameter. It was composed of the sort of miscellany favoured by Mynahs: there were leaves, dead flowers, vine stems, casuarina twigs, paper, rags, the butts of some burnt-out joss-sticks, hens' feathers and a mass of the teal's own breast-down. It contained 15 eggs in varying stages of incubation: some were much advanced, some were almost fresh. The shell was smooth but not glossy, ivory-white. The average dimensions of the whole clutch were 1·77 × 1·29 inches. Extremes of length were: 1·82 (× 1·33) inches and 1·72 (× 1·28) inches; and of breadth: 1·33 (× 1·82) inches and 1·25 (× 1·75) inches. The female was sitting at the time of Majid's visit.

The local Siamese name is *nok khap khae.*

Family ACCIPITRIDAE

Elanus caeruleus caeruleus (Desfont.). Blackwinged Kite.

Fairly common in the Central Plain throughout the year; I got the impression that the species is more numerous in the northern part of the Plain, which is not so subject to flooding in the wet season as is the part between AYUTHIA and the coast. Quite near BANGKOK there is a small copse of thorn-trees out in the middle of the padi-fields; there were always one or two

pairs of these Kites to be seen there. On 8 February, 1948 I watched both partners mobbing a pair of Crows which had built a nest in their territory. It was a spectacular performance, for the Kites made power-dives with wings beating rapidly, only closing their wings at the last moment before skimming over the heads of the cowed Crows. It was not long before the intruders fled. On 27 February, 1948 I observed the pair mating in the top of a tree in the same copse. On 21 April, 1948 I found their nest in the same place (no doubt I would have found it earlier, had I not been away from BANGKOK for several weeks). It was about 20 feet from the ground at the very top of an extremely slender thorn-tree. It contained two fully-fledged young, one of which could fly but the other was helpless. Usually more than two eggs are laid; but there was no indication of the fate of additional eggs, if any.

Milvus migrans govinda Sykes. Pariah Kite.

This is a common species in the Central Plain, particularly around BANGKOK. I have had some difficulty in determining the identity of the local species; for some time I was under the impression that a good many of the birds I saw in BANGKOK were *Milvus migrans lineatus*—judging by the conspicuous white patch on the under-wing of a large number of the birds I saw. But in December I shot a fairly large series both in BANGKOK and at BANG POO on the coast, and all that I sent to Dr. Gibson-Hill were found to be *M. m. govinda*. They varied greatly in appearance: some were very dark brown, almost immaculate; many had a conspicuous white patch on the under-wing at the junction of the primaries and secondaries; some had the lower plumage largely speckled with white; some had greenish legs and some had yellow legs.

In the daytime many birds will be seen wheeling and swooping over the anchorages in the river; sometimes forty or fifty would be seen weaving low over the waters of a roadside canal near BANG POO; in the padi-fields a few birds usually would be seen perching on the stacks of rice-stalks in the dry season; and very often one would meet birds resting in the middle of a road or on the heaps of stones at the side.

Apparently the birds perform a migration. Unfortunately I did not become aware of this until halfway through 1949, and then it was too late to establish definite dates; but Majid and I agreed that we had seen no birds in BANGKOK, or on the coast or in any of the inland parts of the Central Plain since about the beginning of June, 1949, and we faintly recollected a similar disappearance during the middle months of 1948. On 25 September, 1949 a few birds had returned, for we saw three or four resting on the saltings at BANG POO. By the

beginning of November they were back in BANGKOK and along the coast in great numbers, but still there were none to be seen in the middle and north of the Plain.

There was also a local movement in respect of roosting places. In November and December, 1948, a friend of mine who lived in Wireless Road, BANGKOK, was plagued by scores of these Kites which suddenly selected a row of casuarina trees in his garden as a communal roosting-place. They would fly in from the direction of the river about an hour before sunset. They abandoned this site late in December: their departure was perhaps not altogether unconnected with some judicious rifle-fire. At the end of October, 1949, shortly before my departure from Siam, an equally large number again appeared suddenly; they were still using the site when I left BANGKOK.

First signs of breeding were on 20 November, 1948, when I saw a Kite pick up a large stick at the roadside and fly with it towards some distant trees. On 28 November, 1948 I saw Kites carrying sticks to a nest in a big tree at BANG PA-IN. On 6 January, 1949 Majid observed Kites at BANG PA-IN carrying mud from the padifields to their nests.

On 22 January, 1949 Majid and Aziz got up to a nest about 40 feet from the ground in a great *Dipterocarpus* tree. The nest was a very large structure composed mainly of sticks of the Madras Thorn (*Pithecelobium dulce*). The upper surface was slightly depressed to form an egg-chamber 14 inches in diameter; and the upper layers of twigs were intermingled with short lengths of rattan—apparently the bindings of a fence which recently had been demolished at the foot of the tree. The egg-chamber was thickly lined with lumps of reddish clay which had become as hard as bricks. They averaged about the size of a domestic hen's egg. In the centre of this uncomfortable layer was a pad of dead grass only about 4 inches in diameter.

The nest contained two eggs measuring 2·08 × 1·69 inches and 1·94 × 1·62 inches.

On 31 January, 1949 I saw three nests at BANG PA-IN. One was in the crown of a fairly small palmyra palm; one was on a ledge of a stupa in the temple, and one was in a big parasitic fig growing out of the top of a ruined tower. This last was built of the same materials as that previously described, except that the innermost lining was composed of crumbled, dry, cow-dung and some shreaded banana leaves. It contained 2 fresh eggs measuring 2·14 × 1·75 inches and 2·11 ×1·71 inches.

On 13 August, 1948 and 17 September, 1948 I saw Pariah Kites round the fishing villages near SONGKHLA. I visited that town frequently, and during most months of the year, but only saw the Kites on those two occasions.

The Siamese name is *nok yeeou dam*.

Haliastur indus indus (Bodd.). Brahminy Kite.

A common species in the mangrove-girt coastal areas, around the port of BANGKOK and for some miles further up the river. Probably it will be found at most places along the main river, for there was at least one pair at CHIENGMAI, and they had a nest in a pipal tree in the compound of the British Consulate in February, 1948. I have seen a very few birds at SONGKHLA (Singgora), but it seems not to be common there.

At BANG POO, on 9 January, 1949, I found a nest in the low mangrove trees. It contained 3 eggs apparently already much incubated. Between that date and late February I found three or four more nests with eggs, all in the same rather limited area. One of these nests contained fledged young birds on 2 March, 1949.

Haliæetus leucogaster (Gmelin). Whitebellied Sea-Eagle.

Fairly common around the rocky, jungle-covered, islands of the Inner Gulf, and I have seen nests on the islands of Kok Kreung Badal and Kok Phai. On the mainland I have seen it only at HUA HIN and SONGKHLA; at the latter place the birds had a nest in January, 1949. Though the species breeds freely along the low, mangrove-girt, west coast of Malaya, at places where there are no cliffs or islands, I never saw a single bird in the mangrove of the Inner Gulf. The mangrove there is, of course, stunted by comparison with the tall *perepat* mangrove jungle of Malaya, and an Eagle would indeed have difficulty in finding a really tall tree.

Torgos calvus (Scop.). King Vulture.

A common species around BANGKOK; I also saw a single bird at CHIENGMAI in February, 1948.

Gyps indicus nudiceps Baker. Longbilled Vulture.

Occasionally I saw a few birds of this species amongst large flocks of *Pseudogyps bengalensis*. On 13 February, 1948 at CHIENGMAI I saw a bird at a considerable distance which, judging by its creamy buff upper wing-coverts, must have been of this species. I note however that Deignan (1946:) does not list it.

Pseudogyps bengalensis (Gmelin). Whitebacked Vulture.

A very common bird around BANGKOK and at most other towns that I have visited in Siam. On 27 December, 1947 at midday I came across a party of more than twenty bathing in the Waters of a roadside canal. Some were wading up to their breasts in the water, others were standing on the bank with their wings spread to dry in the breeze. At CHIENGMAI the Vultures took their baths very early in the morning on the sandbanks in the middle of the river.

I was unable to obtain any definite information about the breeding or any species of Vulture in the Central Plain. Both Majid and myself persued enquiries right up the river as far as AYUTHIA. The most likely information we got is that the Vultures breed amongst the precipitous limestone hills between SARABURI and LOPBURI. We were advised to seek nests between June and August, but were unable to do so. These dates seem likely for, before we received this information, I had noticed an apparant diminution in the Vulture population of BANGKOK in the early part of the wet season.

Circus melanoleucus (Penn.). Pied Harrier.

My earliest date for this migratory species is 6 November, 1949; I saw several on that date and I can well believe that they arrive a good deal earlier. My latest date is 12 April, 1949 at NAKHORN SAWAN on the occasion of my only visit.

Circus æruginosus æruginosus Linn. Marsh Harrier.

Circus spilonotus spilonotus Kaup. Eastern Marsh Harrier.

I have seen both these species in the padi-fields around BANGKOK, the former seeming to be the more common bird; but I have no dates for arrival and departure.

Falco peregrinus calidus Latham. Peregrine Falcon.

I shot a bird at RANGSIT on 10 October, 1948, and have a sight record of a bird in the mangrove at BANG POO on 23 January, 1949.

Pandion haliætus (Linn.). Northern Osprey.

On 7 March, 1948 I saw two birds in the padi near RANGSIT. On 26 March, 1948 I saw two near some limestone islets in the Inland Sea, SONGKHLA. On 6 January, 1949 I saw seven together over the SONGKHLA estuary.

Family PHASIANIDAE

(Only on one or two occasions did I visit terrain suitable to Game Birds, so I have very few records. I gained the impression that the Central Plain is too wet to attract even the open-country species).

Excalfactoria chinensis chinensis (Linn.). Bluebreasted Button-Quail.

At the beginning of the wet season (July) I found this species fairly common in the grazing land around the 77th kilo, Bangkok-Lophuri highway. (It may well have been common throughout the dry season too, but I never visited the area except during the wet season).

I was amused to find that several local peasants in the area attributed to this species the nests of the Fantail Warbler

(*Cisticola juncidis malaya*) which are numerous in the drier patches of grass. They were quite positive about it, even when shown specimens of both birds.

Obviously *Excalfactoria* cannot remain in that area once the land is flooded; probably it moves back to the hills bounding the Central Plain which at that spot are only about 7 miles away.

Francolinus pintadeanus (Scop.). Chinese Francolin.

In a very short visit to the MAE PING valley between NAKHORN SAWAN and KAMPHAENG PHET, I found this species fairly common in the dry parkland and thin jungle. Its presence usually is revealed only by its loud and frequent call or crowing: a shrill, sharp *Ouk pra-tak pra-taa'* in the rhythm of *Hip Hooray Hooray*. On one occasion I located a bird calling in a very small patch of bush. I managed to creep to within about 4 yards of it before it ceased calling; but even then I was unable to sight it, and when I moved forward it had disappeared.

About a fortnight later, on 26 April, 1949, Majid and Aziz found a nest in the same area. It was in the dry, flat, rather open jungle called *pa daeng*, and was about 5 chains in from the padi-fields. It was placed in the middle of a clump of coarse grass and consisted of a flimsy platform of dead grass and bark raised an inch or so above ground-level. One of the parents was brooding the eggs. It scuttled away at their approach, but stopped in the nearby cover and called defiantly.

The nest contained 5 almost fresh eggs. The shell is fairly glossy and quite smooth, rather thin. The colour is pale buff, unspotted. Through the blow-hole the colour is pale green. They measure 1·45 × 1·08 inches, 1·43 × 1·07 inches, 1·38 × 1·09 inches, 1·37 × 1.08 inches and 1·31 × 1·03 inches.

I ascertained that the local peasants call this bird *nok thar* or *nok kra-thar*.

Pavo muticus Linn. Green Peafowl.

In the same area where I found the Francolin, the Peafowl is quite common according to Mr. Kenneth Gairdner who lives at Wang Pra-thart Farm below KAMPHAENG PHET. He has shot quite a number in the fairly open "pa daeng" forest which runs back for several miles from the banks of the Mae Ping. He says they are fond of perching on the top of the high ant-hills in this jungle. In January, 1949, one of his labourers found a clutch of 4 eggs of the Peafowl somewhere in the forest. Mr. Gairdner tried to incubate them under a domestic turkey; two of the eggs hatched successfully, but the chicks did not survive.

The Siamese name is *nok yoong*.

Family GRUIDAE

Grus antigone sharpii Blanford. Eastern Sarus Crane.

This bird is well-known to the Siamese; it is quite a favourite garden pet, and is reputed to be an effective deterrent to night-prowlers. Siamese sportsmen tell me that young birds taken from nests of feral birds can be bought in the markets of BANDON (Isthmus of Kra), CHIENGRAI (North Siam) and SURIN (East Siam), and that birds in the wild state are common in the open plains of those localities. Personally I have seen wild birds only in the NAKHORN SAWAN—KAMPHAENG PHET section of the MAE PING valley, in April. On one occasion I saw 3 birds feeding in marshy ground in company with Egrets and Openbill Storks. When disturbed, the Egrets and Storks took to flight, but the Cranes melted away into the nearby jungle so unobtrusively that I did not see them go. On another occasion I saw a pair striding across a great plain of grass in the middle of open forest.

In June, 1949, I sent Aziz to accompany the Rush-Watkins Expedition of the Chicago Museum of Natural History to the same area. There a local Siamese showed him a nest of this Crane far into the *pa daeng* forest, about 2 miles from the river. The forest floor is very broken underfoot and is covered with a strong growth of very sharp grass standing about 15 inches tall. The nest was in the middle of an open glade amongst the trees. It was a great heap of dying grass; in shape it was an oval heap about 7½ feet by 5½ feet and about one foot high. To provide material for this pile, the birds had clipped the tough grass so that there remained only an even growth about 3 inches high. This cleared area extended out a further 4 feet beyond the margin of the heap. The eggs were placed side-by-side on the top of the heap. Aziz visited the nest twice; on each occasion one of the parents was crouched on top of the nest. It was not brooding the eggs—they were fully exposed to the elements—but was crouched beside them as if on guard. On one occasion it had been raining heavily; clearly the birds had not bothered to shelter the eggs from the downpour, for they were quite wet as was the rest of the nest; but there was a small dry patch showing where the bird had crouched about one foot from the eggs. (This observation was corroborated by Mr. Colin Sanborn, who accompanied Aziz to the nest and who took photographs which clearly show the dry patch alongside the wet eggs).

When disturbed the bird ran off. It took to flight only when greatly startled. Otherwise, it remained within about fifty yards of the nest.

The 2 eggs were slightly incubated. (The Siamese guide said that two is the normal clutch.) They are very long pointed ovals measuring 3·88 × 2·33 inches and 3·75 × 2·43 inches. They were extremely heavy, and weighed respectively 183 and 182 grams. The shell is very thick, rather pitted and very glossy. The colour is milky-white, but both eggs are slightly nest-stained. There appear to be a very few pale vinaceous smears; but I cannot be certain that these are not nest-stains. Viewed through the blow-hole the colour is deep sea-green.

I verified that the Siamese name is *nok ka-rien*.

Family RALLIDAE

(Considering that I spent a lot of time bird-watching in the padi-fields and marshes of the Central Plain, and that Majid spent half his waking hours there, it is surprising that we came across so few members of this Family, both in numbers and species. I am inclined to the opinion that these Water-Fowl really are not as common as the appearance of this apparently ideal Central Plain had led me to suppose).

Rallus striatus gularis Horsf. Slatybreasted Rail.

On 25 July, 1948 I was shown a nest in marshy grazing land at the 77th kilo., Bangkok-Lopburi highway. It then contained 4 eggs. As the parent had not been seen, I left instructions for a peasant to net it on its nest. This was done when I returned on 28 July, 1948, and the nest then contained 6 fresh eggs. I identified the bird as this species. The peasants told me that the bird is called *nok ee-dam ee-daeng*. The eggs average 1·34 × 1·03 inches. They are rather broad ovals. The shell is glossy and rather thin. The ground colour is pale buff. They are spotted and blotched with reddish-brown and a few ashy-purple marks, principally around the larger end.

Amaurornis phœnicurus chinensis (Bodd.).
Whitebreasted Water-Hen.

Apart from the nest mentioned below, Majid and I never once saw a bird outside BANGKOK. In the suburbs of the city there are many quiet gardens and innumerable ponds, and one might expect to find the bird very common; but in two years I came across very few.

On 8 August, 1949 Majid found a nest at the 77th kilo., Bangkok-Lopburi highway. It was the usual platform of dead grass placed in a big tussock of coarse grass growing in ankle-deep water. It contained 6 half-incubated eggs. One measured 1·57 × 1·09 inches; the others were all 1·49 inches long, with breadths of 1·17, 1·15, 1·14, 1·13 and 1·12 inches respectively.

The local Siamese name is *nok kwak*.

Gallicrex cinerea (Gmelin.). Watercock.

This is the only member of the Family which I found to be common in the Central Plain. All my records fall within the months of May to July, when breeding is in full swing. I would not care to assert that the Watercock is absent from Central Siam for 9 months of the year; it may be merely that it is only in the period mentioned above that the species makes itself conspicuous in flight and call.

I have found a nest with two chicks and three chipping eggs as early as 24 June, 1948, but July seems to be the peak of the breeding season. Five eggs seems to be the full clutch. Siamese eggs that I have measured vary considerably in size: two eggs taken from a clutch of five measure 1·76 × 1·45 inches and 1·72 × 1·47 inches; in a full clutch of five, the largest egg measured 1·72 × 1·47 inches; in a full clutch of five, the largest egg measures 1·66 × 1·25 inches and the smallest was 1·55 × 1·24 inches.

I verified that the local Siamese name is *nok ee-loum*.

Porphyrio poliocephalus viridis Begbie. Purple Coot.

In view of the doubt expressed on Herbert's record of eggs taken at HUA TAKAE, I record for what it is worth that Majid and I neither saw, nor could obtain news of, this conspicuous bird anywhere in the Central Plain. Our enquiries were prosecuted particularly in the PAK NAM and HUA TAKAE areas.

Family JACANIDAE

Hydrophasianus chirurgus (Scop.). Pheasant-Tailed Jacana.

Majid and I made a particular effort to try and locate this bird's breeding grounds in Central Siam. During September and October, 1949, Majid visited all likely areas and displayed to the local peasants a sketch of the bird in breeding plumage accompanied by a description in Siamese. He found that most of the cultivators know the bird, and clearly distinguish between it and the Bronze-winged Jacana. They told him that it does not breed as early as the latter species (*i.e.* in July); its nest should be sought no earlier than September, and is more likely to be found in October and November. Unfortunately our stay in Siam terminated in October, and we never found a nest or saw a bird in breeding plumage. In fact I saw the species only once: on 15 January, 1949 at Minburi, when we saw about eight birds in non-breeding plumage feeding in and around a roadside pool.

Metopidius indicus (Latham). Bronze Winged Jacana.

In suitable localities this is one of the most common marsh-birds in the Central Plain. It does not move far from water, and is usually to be found on quiet lily-covered pools, though I have seen it in a flock feeding amongst padi-stubble—though not far from the nearest water. I have even seen a bird on an overgrown pond at the back of my house in the inner suburbs of BANGKOK, and there are any number to be seen on swampy waste-land within the town-limits of AYUTHIA. I have met it in almost every month of the year—including the middle of the dry season.

I have had several nests, all on small ponds far from any habitation. In 1948 I saw 3 nests at the 77th kilo., Bangkok—Lopburi highway. All of them were on weed-covered pools screened by growths of high rushes. The first was found on 10 July 1948 and contained 3 fresh eggs (at the time we were looking for an earlier nest which a peasant wished to show me, but which we found had been robbed). On 22 July, 1948 we found two; one contained 3 eggs, and the other contained two. The latter "nest" was strongly suspected to be a fraud prepared by a local peasant who showed it me for reward. The two eggs were laid in a slight depression on a heap of dead water-weeds which had been raked from the pond in preparation for rice-planting. The normal nest is a very flimsy raft of floating, dead, waterweeds, sometimes with the addition of a little dead grass. This structure raises the eggs about ¾-inch above the water, and I cannot understand how they remain above the surface when the weight of the bird is added.

On two occasions I concealed myself in a floating "hide" close to the second nest of the three in the hopes of photographing a parent tending the eggs. On the first occasion I sat in the "hide" from 11.15 a.m. until 1.45 p.m. on a rather overcast day. Both parents spent a good deal of time quietly feeding on the pond about 15 yards from the nest. Once one of them flew towards me and alighted one yard from the nest and just outside the prearranged focus of my camera; I think it was about to brood the eggs, but at that moment it was startled by the splashing of some cattle in the vicinity. On the second day I kept my vigil from 7.15 a.m. until 10.15 a.m. It was a hot sunny day and, though the birds were frequently in my sight, they did not visit the nest. On this occasion my effort concluded suddenly when, seeking to decapitate an intruding swamp-leech, I inadvertently stabbed the rubber dinghy which was the basis of my "hide" and presently sank! I think it probable that the Jacana does not bother to brood its eggs in this usually hot atmosphere; only once have I seen one on its nest.

In 1949 an exhaustive search of all likely ponds around the 77th kilo. revealed no nests in July. I found that the pools were of very much less extent, for the encircling rushes had greatly encroached on the open water. Again, there was a thick growth of water-lilies on the water, but none of that floating dead vegetation which Jacanas and Grebes use for their nests. I was told the reason for this: owing to the delayed rains, the fields had not yet been ploughed; therefore the buffaloes which are needed for the ploughing had not yet been released into the swamps; it is buffaloes which, released into the swamps, break down the surrounding rushes, thus enlarging the open water and also providing the dead vegetation which floats to the surface to form the rafts on which these birds can lay their eggs.

This year the first nest in the area was found on 25 August, 1949; it contained 4 fresh eggs. I saw another in the same area on 11 September, 1949; this also contained fresh eggs—4 of them. In the meanwhile, whilst seeking nests of the Pheasant-tailed Jacana at MINBURI on 3 September, 1949, Majid found 4 eggs without a nest of any sort! The Jacana had selected a small pool the surface of which was packed tightly with Water-Lettuce (*Pistia stratiotes*). So firm was this compact mat of living vegetation, that the bird had dared to lay her eggs on the stiff green heads. In view of this unusual phenomenon, Majid remained in hiding until the bird came to brood her eggs, and then shot her for positive identification. He observed that before stepping onto the eggs she bowed down very carefully to wet her breast-feathers in a patch of open water—a habit which I noticed is followed also by the Stilt (*Himantopus h. himantopus*).

The average dimensions of 15 eggs are 1·45 × 0·98 inches. Extremes of length are 1·57 (× 0·98) inches and 1·35 (× 0·97) inches; and of breadth are 1·00 (4 eggs) and 0·96 (3 eggs).

I verified that the local Siamese name is *nok phrik*.

Rostratula benghalensis benghalensis (Linn.). Painted Snipe.

For what it is worth, I record that Majid and I never saw, or obtained news of, this species anywhere in the Central Plain. I note, however, that the nests described by Herbert all were found in the SAMKOK district—an area which we rarely visited, but terrain not differing markedly from parts of the plain which we explored thoroughly.

Lobivanellus indicus atronuchalis Jerdon.
Red Wattled Lapwing.

We never saw or heard of this bird in the Central Plain. On 14 April, 1949 I saw a very wild pair on the sand-bars of

the Mae Ping below KAMPHAENG PHET; and at the same place on 29 April, 1949 Majid shot a specimen. We verified that in that locality the peasants call both this Lapwing and the Spur-winged Plover (*Hoplopterus duvaucelli*) by the same names, *nok thaa, nok thaa-tawet* or *nok tet-tawet* without distinction. They also reiterated without prompting the belief (already recorded by Deignan) that the Lapwing sleeps on its back with its feet in the air. They also stated that this species nests in the fields, and thus distinguished between it and the Spur-winged Plover which they say nests on the sandbanks.

On 13 June, 1949 I found this bird to be common in the great grazing-grounds at NA KOK on the Mekhlong Railway beyond TACHIN. One bird which I watched for some time was behaving as if it had eggs or young in the vicinity. The local peasants confirmed that it breeds freely at that place.

Squatarola squatarola (Linn.). Grey Plover.

I have no dates of arrival and departure; but I have a note of quite large flocks on the mud at BANG POO on 1 April, 1949.

Charadrius dubius jerdoni (Legge). Little Ringed Plover.

Between the 12 and 14 April, 1949, I found several pairs in breeding plumage on the MAE PING, both at NAKHORN SAWAN and also below KAMPHAENG PHET. I think they were about to breed or already breeding; for all were paired, each pair had its chosen territory from which it did not stray, and some birds made a considerable fuss when we entered their territory. But although we watched from concealment, and also quartered the sand and shingle for several hours, we could find no eggs or young. One bird which I watched for a long time became very excited when I entered a certain small zone of sand: it kept alighting a few yards from me and then running away; once it flattened out in the sand with its back to me, spread its remiges and retrices, and cocked its tail as though inviting copulation. When running around me, this bird puffed out the soft white feathers of the lower breast like pectoral tufts. This display was not caused by the wind, which was a mere breath at the time. I searched this area quite minutely without finding a nest.

On my last evening in the area Majid showed me two apparent nest-depressions on a small spit of sand and gravel which was only a few inches above water-level. When he first found them (on the previous day) they were lined with small stones, but when he took me to see them a few pieces of shredded green leaves had been added. Definitely they were not the work of mischievous children; these Plovers were the only birds in the vicinity; and so they may have been the work of this species. Majid and Aziz returned to the area on 28

April, 1949, but found that the supposed nests had been engulfed by the rising river. There were still plenty of these plover on the sandbanks and their behaviour was equally significant, but there were no eggs or young to be found.

I did not ascertain the Siamese name for this bird.

Charadrius mongolus ? schäferi de Schauen. Lesser Sand-Plover.

Charadrius leschenaultii Lesson. Large Sand-Plover.

Two very common species along the muddy northern shore of the Inner Gulf in winter. On 1 April, 1949 I shot a number of birds of both species out of a very big mixed flock at BANG POO. Some were acquiring their summer dress. I have no dates for arrival or departure.

Numenius phaeopus variegatus (Scop.). Eastern Whimbrel.

I have recorded only the fact that on 21 May, 1949 I saw a pair flying purposefully westwards (*i.e.* across the Inner Gulf). At the time I was 6 miles out to sea from the east coast of the Gulf and close to the island called KOK RANG KWIEN.

I have no doubt that the species is common throughout the winter months, but I have neglected to record it.

Numenius arquata orientalis Brehm. Eastern Curlew.

Again, I have kept no record of arrivals and departures. I have a note that on 2 March, 1949 at BANG POO there were dozens feeding in the company of other Waders on the mud at low tide.

Tringa totanus (Linn.) subsp. Redshank.

Tringa nebularia Gunn. Greenshank.

Both species visit the muddy northern shores of the Inner Gulf, but the latter bird seems to be much the more common. I have also met Greenshank on the inland padi-fields at RANGSIT.

Tringa stagnatilis (Bechst.). Marsh Sandpiper.

Tringa glareola Linn. Wood Sandpiper.

I have shot both species on the mudbanks near BANG POO, and have met *glareola* frequently on the inland padi-fields as well.

Actitis hypoleucos (Linn.). Common Sandpiper.

Very common; but I have not observed that in Siam a few birds stay on throughout the summer—as they do in Malaya.

Erolia testacea (Pallas). Curlew-Sandpiper.

Limicola falcinellus sibirica Dresser. Broadbilled Sandpiper.

On 9 January, 1949 I shot one specimen of each of these species, together with several other small Waders, out of a great flock feeding on the mud near BANG POO.

Himantopus himantopus himantopus (Linn.).
Blackwinged Stilt.

I was successful in finding a breeding haunt of these Stilts: it is on the disused salt-pans near the coast at NA KOK, on the Mekhlong Railway beyond TACHIN. The nesting season is in June; but probably the birds are there all the year round, for Majid saw them there in December. Apart from NA KOK, I have only one other record of the Stilt: I saw a single bird feeding on the mud at BANG POO; it was in the company of a vast concourse of Terns and Gulls.

At NA KOK, for about a mile south of the railway the salt-pans are either in current use or at least maintained in immaculate condition—not a leaf of living plant anywhere. Further out, the smooth, fairly dry, mud is dotted here and there with dessicated-looking yellow grass, a few low bushes of the Mangrove variety (*Avicenna* sp.), and with a quite strong growth of that stunted, heath-like bush which covers large areas of the northern shore of the Inner Gulf. It is a species of *Suaeda*, and the Siamese name is *Sarakharm*. It is in this abandoned part of the salt-pans that the Stilts make their nests.

On 4 June, 1949 Majid and Aziz found a nest containing 2 eggs, and they were given two more eggs which a peasant had collected that day for food—the fate of a large number of Stilt's eggs. The eggs they found in situ were laid on a thin pad composed of small pieces of dead Nut Grass (*Cyperus rotundus*) and a few small "spire" shells, identified by M. W. F. Tweedie as freshwater shells of the family *Melaniidae*, nearest to *Melania tuberculata*, Müller.

On 12 June, 1949 I found three nests all within one hundred yards of each other. They were in a large patch of *Suaeda*, much of which was dead and broken down like burnt-out heather. The nests were slight depressions scraped in the dry mud amongst the tangle of flattened *Suaeda* branches. These scrapes were quite thickly lined with matresses of one-inch lengths of fine *Suaeda* twigs. In one nest an uncomfortably thick stem of *Suaeda* lay right across the middle of the nest, so that the eggs were divided on either side of it. They contained one, three and four fresh eggs respectively; the local Siamese told us that four is the full clutch, but that the full number is rarely attained on account of the persistent collecting for food. A Stilt flew

down to the nest of 3 eggs and began to brood them as we watched. When disturbed, it flew to a nearby saline pool; there I was able to watch it from concealment for some time. Part of the time it was feeding and part of the time it was bathing. Owing to its great length of leg and considerable length of bill, the bird often found itself too close to some morsel of food which it had detected beneath the muddy water; so first it had to shuffle a pace or two backwards, and then it lunged forward bending from the tibio-tarsal joint and holding the whole body, neck and head awkwardly and stiffly in a straight line. When bathing, it wet only its breast and abdomen—by bending its tibio-tarsal joints almost double and wriggling its body with the wings half-opened so that the breast splashed up water onto the flanks. This bathing operation was the usual preliminary to an attempt to return to the nest: Majid had noted it on 4 June, 1949, and I observed it later when I was lying in a hide awaiting the return of the bird to its nest.

The average dimensions of 12 eggs are 1·70 × 1·20 inches. Extremes of length are 1·82 (× 1·21) inches and 1·63 (× 1·24) inches; and of breadth, 1·24 inches (4 eggs) and 1·15 inches (2 eggs).

I ascertained that the local Siamese name is *nok teen thien.*

Orthorhamphus magnirostris (Vieillot). Reef Thick-Knee.

On 14 April, 1949 I saw a single bird of this species on the sandbanks of the Mae Ping below KAMPHAENG PHET. The local Siamese called it *nok pahk sawn* and *nok pahk laem,* the two names used for most Waders.

On 12 June, 1949 I saw a single bird on the same deserted salt-pans at NA KOK where the Stilt breeds. Majid said he had seen 3 or 4 of the same species when he visited the place on 4 June, 1949.

Hoplopterus duvaucelli (Lesson). Spurwinged Plover.

On 14 April, 1949 I located 3 or 4 pairs of this species on the great sandbanks of the Mae Ping below KAMPHAENG PHET. Majid, Aziz and I made a great effort to locate the eggs or young: first by watching the adult birds from concealment, and later by patient quartering of the areas where we had seen the birds. We found nothing; but there was no doubt that the birds were paired, and they seemed disinclined to stray far from their chosen territories. One bird would wander round aimlessly whilst the other stood on guard at a point of vantage. Several times we saw the wandering bird settle down in a depression in the sand as though brooding eggs; but when we examined the place there was nothing to indicate even that the depression had been prepared by a bird. Our Siamese

boatman told us that in past years he has found eggs of this species on the sandbanks, but only rarely.

On 26 April, 1949 Majid and Aziz returned to the area and spent three days unsuccessfully trying to locate a nest of the species. They had three pairs under close observation, and they reported that the birds were behaving exactly as before —including one member of the pair occasionally easing itself into a depression in the sand—often a buffalo's hoof-print. Finally Majid shot a female; on opening the abdomen he found 5 oviduct eggs: two were as big as green peas, but the others were no bigger than lentils.

The local Siamese call this species by the same names as the Red-wattled Lapwing: *nok thaa, nok thaa tawet* or *nok tet-tawet:* but they are aware that they are different species, the Plover breeding on the sandbanks and the Lapwing breeding in the fields. They explained that the name *thaa* represents the Plover's usual call; but I heard only a sharp *kweek* uttered once or in irregular succession; this call was uttered both when the bird was startled into flight and also when it was wandering aimlessly.

Glareola maldivarum (Forster). Eastern Pratincole.

Herbert has described breeding colonies of this bird at Sapatoom, at Ayuthia and at Samkok. Sapatoom now has been engulfed in the suburbs of BANGKOK, and I did not have the opportunity to visit Ayuthia and Samkok at a suitable time of the year. I have no arrival dates for 1948; but in 1949 (which seems to have been a "late" year for many birds) I saw them for the first time near BANGKOK on 6 March, 1949. By 13 March, 1949 this first party seemed to have established itself in a padi-field in which the stubble had been freshly burnt; they behaved as if they were paired and had established territories; and when first a Crow and later a Harrier flew low over the field, several Pratincoles got up to chase them away. However, these birds soon moved on, and, in spite of constant searching, we found no signs of breeding, although we had a small colony under frequent observation near Prakanong, on the outskirts of BANGKOK'S eastern suburbs. The local peasants told Majid that the Pratincoles would not start to nest until after the first heavy rains. Nothing was forthcoming at Prakanong until the beginning of May, when there were heavy evening rainstorms on several consecutive days. On 8 May, 1949 four of us quartered the area, which was newly ploughed padi-field. There were about a dozen Pratincoles in one small area. Several of them tried to distract us by feigning a broken wing, but their displays were not so accomplished or so vigorous as those of the Milky Pratincole: usually a bird just crouched

amongst the clods with its wings fully spread and fluttering occasionally; it did not writhe in a "death-agony" or stagger around with a trailing wing.

Eventually we found a nest in a part of the fields which had not been ploughed and where a good deal of rice-straw remained ungarnered. There was a small depression in the soil, and it was thickly lined with small scraps of rice-straw. It contained 3 fresh eggs measuring 1·25 × 0·93 inches, 1·22 × 0·93 inches and 1·21 × 0·93 inches.

On 12 June, 1949 we found a large number of birds in the grazing-grounds at NA KOK. They behaved as if they had eggs or young in the vicinity, but we had no time to make a search. Some passing peasants confirmed that the species does breed there "after the first rains", and that the locals burn off the grass to aid them in their search for eggs.

On 1 July, 1949 Majid found a nest at Prakanong. It had been flooded by rainwater. It contained a single fresh egg, measuring 1·18 × 0·94 inches.

On 3 July, 1949 we found a number of birds on the drier parts of the grazinglands at the 77th kilo., Bangkok—Lopburi highway. They behaved as if they had nests, but I had no time to investigate.

I verified that the local name is *nok ee-riat*—not *nok ee-reet*.

Glareola lactea Temm. Milky Pratincole.

Majid first found this species breeding at NAKHORN SAWAN (Paknampho) on 6 April, 1949 and collected 3 clutches each of two eggs. On 12 April, 1949 he took me to see the colony. The commercial town of Paknampho and the administrative centre of Nakhorn Sawan are one town; but it is spread out along about 4 miles of the right bank of the Mae Nam Chao Phya and—on account of floods—is built back from the bank. Consequently the great sand-bars which appear in the river during the dry season are little disturbed except by cowheards and fishermen. The nesting colony was only about half-a-mile below the busy commercial area centered around the confluence of the Mae Ping and the Mae Nan; it was on a vast sand-bar almost closing the channel between the left bank and an island in mid-stream.

There was very little cover except for odd patches of coarse grass, and the eggs were laid right out in the open on coarse sand or gravel. We found only one more nest, containing two much incubated eggs. They were laid in only the slightest depression in the sand without any lining whatsoever. This particular nest was located very close to a small twig sticking out of the ground (not a landmark placed there by human agency); but

none of the other nests we saw were placed near a "landmark" or other bearing-mark.

The parents were on watch; but none of them was brooding eggs either here or elsewhere that we found eggs. Such conduct would be superfluous; for we were told that the air-temperature over the banks was about 130°F., and certainly it felt like it, for the heat of the sand struck right through my shoes so that I was forced to cool my feet in the river at intervals.

When we got near their nest, both parents started a most vigorous and polished deception act. One or both partners would swoop down and land on the sand. Then it would run towards us with its wings either closed or partly spread. Suddenly it would fall over on its side with one wing outstretched. In that attitude it would either lie kicking or would struggle along on its side for a few yards. Then it would almost disappear into some slight depression in the sand, usually with only the dark forehead showing. It might stay in that position for as long as two minutes, apparently watching us. Sometimes it would flutter its wings whilst crouching in the depression. Then it would go through its entire repetoire all over again.

On 14 April, 1949 we found a colony on just one large sandbar of the Mae Ping below KAMPHAENG PHET. Both here and at NAKHORN SAWAN I noticed that its colonies are established on the lower, flatter sand-bars—not on the hilly ones which sometimes are crowned with grass. These colonies are only a foot or so above dry-season water-level and must be overwhelmed early in the rains. Here I foolishly offered to the local school-children a reward for the discovery of a Spur-winged Plover's nest; during the rest of my stay the young enthusiasts dragged me out to inspect several nests of this Pratincole, including two which contained 3 eggs each. On blowing these two clutches, we found in both cases that one egg was of a different age from the other two eggs. We therefore guessed that the third egg had been added by the finder in the hopes of gaining a bigger reward. Although Blanford states that the Indian clutch varies from two to four eggs, we conclude that two eggs forms the normal clutch here.

Returning to the KAMPHAENG PHET area on 26 April, 1949, Majid found that the sandbank on which these nests were placed had been overwhelmed by the rising river.

The average dimensions of 16 eggs are 1·05 × 0·79 inches. Extremes of length are 1·11 inches (2 eggs) and 0·98 (× 0·79) inches; and of breadth are 0·80 (8 eggs) and 0·75 (× 1·07) inches. The ground colour of these eggs is yellowish-stone or olivaceous-stone, sometimes rather indistinctly peppered with greyish-brown spots and squiggles, but sometimes more boldly marked with small blotches of dark brown and lavender.

These colours merge wonderfully into the background of sand or gravel; and that, combined with their small size, makes them by far the most difficult to find of any Terns' or Plovers' eggs that I have ever seen.

At NAKHORN SAWAN the local fishermen called the bird *nok aaen lom* (*nok aaen* = Swallow; *lom* = of the wind). At KAMPHAENG PHET the children called it *nok tet-ṭawet*—one of the names given to the Lapwing and the Spur-winged Plover. This may be meant to be onomatopeic; but the only call I heard, both in flight and on the ground, is a single, Tern-like "kweek".

Larus brunnicephalus Jerdon. Brownheaded Gull.

A very common winter visitor to the lower reaches of the Mae Nam Chao Phya (I have not seen it above BANGKOK), to the northern shores of the Inner Gulf and to the ocean steamer anchorage at KOK SI CHANG. In 1948 no birds had arrived on the river by 16 October, 1948, but there were a few at the river-mouth next time I visited the river—on 5 November, 1948. They were still at the river-mouth as late as 1 May, 1949—both adults and immatures. In 1949 I saw no arrivals at BANGKOK up to the date of my departure on 10 November, 1949, but there were large numbers at KOK SI CHANG that day.

Chlidonias hybrida javanica (Horsf.). Whiskered Tern.

In 1948 these birds first appeared about the middle of October, and on several occasions I saw them in great numbers feeding in the fresh-water canal which runs parallel with the northern shore of the Inner Gulf at BANG POO. Two specimens which I shot were identified by Dr. Gibson-Hill as first-winter birds of *C. h. javanica*. Apparently the breeding grounds of this bird are not known; it was described by Horsfield (Trans. Linn. Soc. Lond., 13, pt. 1, 1821, p. 198: Java) from examples taken in winter quarters.

Subsequently I found small numbers feeding over a canal near MINBURI, about 20 miles inland; they were still there on 12 February, 1949, but had disappeared when I next visited the place—on 3 April, 1949. By 20 March, 1949, many birds seen near the mouth of the Mae Nam Chao Phya were assuming summer dress. There were still a few birds there, in full summer dress, as late as 1 May, 1949.

Sterna acuticauda J. E. Gray. Blackbellied Tern.

On 14 April, 1949 I saw a single bird of this species flying over the Mae Ping below KAMPHAENG PHET.

Sterna hirundo longipennis Nordm. Common Tern.

On 10 September, 1949 I shot a solitary tern feeding in the waters of the Mae Nam Chao Phya at RANGSIT. Dr. Gibson-Hill has sent me the following comments on it. "This bird is very largely new-moulted into fresh (winter) plumage. The great majority of the skins of *S. hirundo* in the Raffles Museum collection are in very worn plumage, or are first winter birds. Accordingly when compared with them the RANGSIT specimen appears to be a darker and more determined grey on the upper parts. Actually the situation is not clear with regard to the race reaching the Malay Peninsula. According to Peters (1934: 332) it is *tibetana* Saunders (*Proc. Zool. Soc. Lond.*, 1876, p. 649: Tibet). We have not been able to examine topotypical material of *tibetana* or *longipennis* Nordmann (in Erman's Verz. Thier. Pjlanz., 1835, p. 17: mouth of the Kutchui River, Sea of Okhotsk) here, but it seems doubtful if the two races are distinct. If they are not, as I have assumed in compiling the Malayan Checklist, then *longipennis* Nordmann has priority, and must be the name for the birds wintering in the Malay archipelago, and presumably also Siam and probably Burma. For the present, therefore, I give the name *longipennis* to the RANGSIT specimen. On the other hand, should *tibetana* be valid it would certainly apply to the Burmese birds, and probably this one; equally Peters might well be right in putting the division between the wintering areas of the two races east of Borneo. No one, it may be remarked appears to have examined birds from Borneo critically; Peters does not include it in the wintering areas of any of the races of *S. hirundo* which he accepts, yet it must be reaching at least the north coast in small numbers".

Sterna dougallii bangsi Mathews Roseate Tern.

On 11 July, 1949, through the kindness of the Commander-in-Chief, Royal Siamese Navy, I was enabled to visit KOK HIN CHALARM, the southernmost of the string of islands extending southwards from LAEM (Cape) SAMAE SARN at the south-east corner of the Inner Gulf. This is a turtle-backed barren rock, about 30 feet high and oval—measuring about 150 × 100 yards. The islet is much seamed with crevices and there is a lot of broken rock on its surface. The only form of vegetation consists of a very few patches of a *Portulaca* growing in hollows where guano has accumulated. Here I found a huge population of Panayan Terns and Blacknaped Terns in about equal numbers, and a very few Noddies and Roseate Terns. The bills of these Roseate Terns were completely sealing-wax red. There were only 4 pairs, and they had established a tight little colony in a clump of boulders at one corner of the island. There we found

two very incubated eggs in a crevice on the top of a boulder, and a single chick lying in another crevice nearby. The Terns were quite unconcerned when I set up a crude "hide" about ten feet away: they returned as soon as I concealed myself inside it, one bird at once settling on the eggs.

On 22 July, 1949 Majid returned alone to KOK HIN CHALARM, and found that the Roseate Terns had moved to the very summit of the island where they occupied one of the patches of *Portulaca*. There he found 5 clutches of eggs laid on the soft humus—some under the shade of the creeping vegetation. There were 2 clutches each of two eggs and 3 clutches of single eggs—all were fresh except one single egg.

The average dimensions of 9 eggs are 1·54 × 1·11 inches. The extremes of length are 1·61 (× 1·12) inches and 1·48 (× 1·13) inches; and of width are 1·15 (× 1·56) inches and 1·03 (× 1·60) inches. Eggs of this species are very difficult to distinguish from those of *Sterna s. sumatrana* which, at HIN CHALARM, breed on the same island though not intermingled with the Roseate Terns. Judging by the small series of *S. dougallii* at my disposal, it would appear that *most* eggs of the species have a brown tinge in their ground colour whilst *most* eggs of *S. sumatrana* are whitish in ground colour; again, most *dougallii* eggs are boldly marked with irregular blotches of black, golden-brown and purplish-grey whilst most eggs of *sumatrana* are less strikingly dappled with smaller, lighter markings.

Like all species and genera of Terns on which I have been able to make a check, the local Siamese name of *S. dougallii* is *nok narng nuan*.

Sterna sumatrana sumatrana Raffles. Blacknaped Tern.

This is a very common species around the islets of the Gulf. On 18 May, 1949 Majid and Aziz found it breeding on three rocky islets between HUA HIN and PRANBURI. The average dimensions of 13 eggs from these islets was 1·50 × 1·10 inches. Extremes of length were 1·58 (× 1·12) inches and 1·42 (× 1·12) inches; and of breadth were 1·15 (× 1·46) inches and 1·06 (× 1·51) inches. The fishermen of PRANBURI referred to both this species and *S. a. anæthetus* as *nok ai chai;* the name *nok narng nuan* is known but not often used locally. Elsewhere I have not come across the name *nok ai chai*.

On 22 May, 1949 I visited many of the islands on the eastern side of the Inner Gulf, and found breeding colonies of this species on all of them except the largest—KOK PHAI. On White Rock, a tiny islet close to KOK RIN, we found that this species was laying eggs only on a raised coral beach—a most unusual situation for this species which I have found, in Malaya and

Siam, nesting only on rocks. On White Rock the larger *Sterna anæthetus* was nesting on the rocky slopes of the islet, above the beach; whereas on the other islands the two species were intermingled.

On 11 July, 1949 I found very large numbers breeding on KOK HIN CHALARM.

Sterna anæthetus anæthetus Scop. Bridled Tern.

I have records of breeding colonies on all the islands where we found the Blacknaped Tern, but usually in rather smaller numbers. On the islets of the Inner Gulf we found that the eggs were very well-concealed—even more carefully hidden than those in the Tioman Archipelago off the East Coast of Malaya. Some we found laid on rock debris at the bottom of big pits amongst the rocks; some were in neat little cavities in the rock face where a rectangular block of the treacherous strata had fallen out of its place; and one I found inside a shallow cave, laid in an old and disintegrating nest of the Reef Heron, *Ardea sacra*.

Thalasseus bergii cristatus (Steph.). Large Crested Tern.

Sir Walter Williamson has recorded (Journ. Nat. Hist. Soc. Siam, 3,) that in 1917 he found this bird breeding on the bare shingle of "a beach at one end of a small islet near KOK RIN". I think there can be no doubt that he was referring to White Rock, which is very close to KOK RIN and is the only island in that group which has a shingle (actually, coral) beach. I visited the islet on 21 May, 1949 but found no birds or nests there. As described above, *Sterna sumatrana* had eggs laid in the shingle.

Again, Sir Walter (loc. cit. supra.) records that in May, 1918, he found absolute swarms of Terns (including this species) breeding on a completely bare, low-lying rock "near KOK CHUAN". I think it is clear that he was referring to KOK HIN CHALARM, the outermost of the islands south of LAEM SAMAE SARN. There is no island called KOK CHUAN on the east side of the Gulf, but the two islands immediately north of HIN CHALARM are named KOK CHUANG and KOK CHAN respectively. Anyway, on 11 July, 1949 I visited KOK HIN CHALARM and sought this species without success.

It seems, therefore, that since Sir Walter visited the colonies over thirty years ago the species has abandoned its breeding sites in the Inner Gulf. The only occasion when I met it was on 27 December, 1948 when I saw several perching on a fish trap several miles out in the Inner Gulf, off the PAKONG estuary.

Sterna albifrons sinensis Gmelin. Chinese Little Tern.

On 12 June, 1949 I observed several birds on the disused salt-pans at NA KOK, near TACHIN. During the day we saw probably twenty pairs, most of which were behaving as if they had eggs or young. We found one nest containing a single fresh egg which was being brooded by a very persistent parent. It was laid on the flat debris of a dead *Suaeda* bush. It measured 1·27 × 0·95 inches.

I did not meet this species up the river above PAKNAMPHO when I visited that area early in April; nor did Majid and Aziz see it on their subsequent visits to the same place. I was told by Mr. Craig of the Borneo Co., that, in the course of many trips up and down the Mae Ping, he has seen colonies of Terns only between RAHAENG and the Rapids; but he could not say whether they were of this species.

In May, 1948, I saw several birds of this species on the sea-beach at HUA HIN. I have verified that its local name is the usual *nok narng nuan*.

Anoüs stolidus pileatus (Scop.). Common Noddy.

Visiting KOK HIN CHALARM on 11 July, 1949, I found about 4 pairs of this species amongst swarms of *Sterna sumatrana* and *Sterna anaethetus*. They confined themselves strictly to the southern tip of the islet. They were so tame that I was able to approach until literally I could "see the whites of their eyes"—or rather, their eyelids—which are distinctly white. On this occasion we found only one egg. It was laid on a small bare ledge 3 feet below the lip of the islet's only sheer cliff. The egg was quite fresh, but one of the parents was very keen to brood it, and returned to perch on the ledge when I was sitting only six feet away. The egg measured 2·14 × 1·50 inches.

Returning to the islet on 22 July, 1949, Majid found another fresh egg. This was laid on a small patch of guano in a hollow of the rock. It measured 2·27 × 1·52 inches. During his stay on the island, a pair of *Haliæetus leucogaster* came over from KOK CHUANG and attacked the Tern colony. The Terns scattered, but the Noddies got up and attacked the intruders most determinedly, eventually driving them away. On both visits, smashed shells of Noddies' eggs were found: it seems possible that these Eagles are responsible for the damage.

Local Siamese recognize these birds as Terns and call them by the family name *nok narng nuan*. I was rather surprised that they have no distinctive name or qualifying adjective for birds differing so much in colour from the Terns.

Family COLUMBIDAE

This family is poorly represented in those parts of Siam with which I was familiar—where one would expect only to see the ground-feeding species. Only when I visited CHIENGMAI and the KAMPHAENG PHET area did I enter terrain where I expected to see species of Green Pigeons and Imperial Pigeons; but in fact my visits were so brief that I saw none.

Streptopelia tranquebarica humilis (Temm.). Burmese Red Turtle-Dove.

I never saw this species around BANGKOK, but I once saw a small party feeding in the padi-fields at PAK KRET, 12 miles north of the city. I found the species common only close to AYUTHIA.

Streptopelia chinensis tigrina (Temm.). Spotted Dove.

In my experience this species is not common around BANGKOK and the Central Plain. It is much more common at CHIENGRAI. On 2 January, 1948 I was shown a fledgling perching precariously in a tree in the compound of the British Embassy. It could scarcely fly and obviously must just have left the nest.

Geopelia striata striata (Linn.). Barred Ground-Dove.

In my experience this is not a common species around BANGKOK and the Central Plain.

Family PSITTACIDAE

I have no Siamese records of the Parrot Family.

Family CUCULIDAE

Cacomantis merulinus querulus Heine. Brain-Fever Bird.

I have heard the calls of this species in the BANGKOK suburbs about the middle of the year (I have no recorded dates); and a record of a bird in my garden on 2 December, 1948.

Eudynamys scolopaceamalayana Cab. & Heine. Malayan Koel.

A common species around BANGKOK; but it seems either to perform a local migration or to make itself very inconspicuous for a period. From the beginning of December until about the end of February the bird is most active and vociferous. Then, from the beginning of March until the middle of July the birds seem to disappear—not only from the BANGKOK suburbs but also from every other place I have visited in the Central Plain. From July until November I saw and heard birds only occasionally in BANGKOK. The period when the bird is most

noticeable is also the period when the Crows are nesting. I have heard a native theory that the male Koel "demonstrates" in front of a pair of nesting Crows in the hopes that both birds will leave their nest to chase him away, thus giving the female Koel an opportunity to slip onto the Crow's nest and lay an egg. Now in January and early February, 1948, a male Koel used to perch in the top of a tree in my garden every morning. He stood there conspicuously silhouetted against the sky and serenaded the dawn for about an hour before the sun actually rose. Sometimes his calls were answered by a second bird somewhere far away, but we never saw his mate. A pair of Crows (*Corvus coronoides andamanensis*) were building a nest in a nearby tree, and I observed on at least one occasion that they went to a great deal of trouble to chase away the Koel. I was not able to ascertain whether a Koel's egg was laid in the Crow's nest, for it was built in an extremely quick-set thorn tree which would have torn the hide of a rhinoceros.

On 11 February, 1948 I visited a nest of *Corvus coronoides andamanensis* in an isolated thicket in the middle of the rice-plain, not far from BANGKOK. I had already taken a solitary Crow's egg from this nest a week before. As I approached I could hear a Koel calling continuously. The nest was in the top of a very slender sapling, and in trying to get up to it we inadvertently pulled it over, and the eggs fell to the ground. It contained one obvious Crow's egg of normal size, which was partly incubated, and two much smaller eggs which were quite fresh. The Crow's egg and one of the smaller eggs were completely smashed, but the second small egg was only cracked. It measures 1·27 × 0·88 inches and is a much richer colour than most Crow's eggs that I have seen. The shell, too, is unusually thick and glossy. I think there can be little doubt that both these small eggs were those of a Koel.

I verified that the local Siamese name is *nok ta-wau* or *nok ka-wau*.

Rhopodytes tristis longicaudatus (Blyth). Large Greenbilled Malkoha.

Seen in scrub jungle near BANGKOK on 4 June, 1948.

Family TYTONIDAE

Tyto alba javanica (Gmelin). Barn Owl.

Unlike Herbert, I have not found this large Owl to be common in BANGKOK, but there is no lack of birds out in the Central Plain. Twice I have seen an individual being mobbed in daylight: once by Crows, Drongos and Mynahs, and once by Brahminy Kites which had nests in the vicinity.

On 12 January, 1949 I was shown a nest containing 3 eggs. It was in a dark space under the eaves of a disused schoolhouse—an open pavilion without walls. The owl was netted for careful examination, and whilst in brief captivity it laid a fourth egg. The eggs were laid on a haphazard collection of material strewn untidily (and perhaps fortuitously) at the bottom of the space under the eaves: it consisted of straw, bamboo twigs, and a number of dried outer sepals of the inflorescence of a banana.

On 31 January, 1949 I detected a bird breeding in a ruined stone tower at BANG PA-IN. (There was a Pariah Kite's nest in the branches of a strangling fig which had enveloped the tower). Two eggs were found laid on the bare stone of a gutter at the top of the tower. One was fresh and one was half-incubated. The average dimensions of six eggs is 1·69 × 1·28 inches. Extremes of length of this small series are 1·76 (× 1·31) inches and 1·63 (× 1·20) inches; and of breadth are 1·32 (× 1·67) inches and 1·20 (× 1·63) inches.

I ascertained that the local Siamese name is *nok maaou* (= Cat Bird), but a lot of peasants seem to have no knowledge of the bird.

Family STRIGIDAE

Athene brama pulchra Hume. Spotted Owl.

I agree with Herbert (*loc. cit., supra.*) that this little Owl does not occur in BANGKOK. He found it common in the SAMKOK district, and on the only occasion I visited that area I found it too. On 6 February, 1949 Majid and I put up a bird out of the hollow stump of a sugar-palm. At the bottom of the hollow—about 3½ feet down—there were 3 fresh eggs. They measure 1·26 × 1·10 inches, 1·24 × 1·08 inches and 1·23 × 1·08 inches. They were laid on a heap of wood debris and shared the hole with a much worn white quill of an Egret, and skeletal remains of two small rodents and a bat.

I did not ascertain the Siamese name for this species.

Glaucidium brodiei brodiei (Burton). Pigmy Owlet.

On 27 December, 1948 one of a party of fledgling owls fell from a tree outside my office in the British Embassy compound; they had been frequenting the tree with their parents for two or three days. I was able to make a detailed identification.

Very small Owls, making the same call as the parents of the bird mentioned above, often appeared at dusk around my house; but I was never able to satisfy myself whether they were this species or *Glaucidium cuculoides brugeli*, which Herbert describes as breeding in BANGKOK.

Family PODARGIDAE

I have no record of this Family in Siam.

Family CAPRIMULGIDAE

It is perhaps worth recording that neither I nor Majid saw or heard a single Nightjar during our residence in Siam. Admittedly we rarely visited SAMKOK—the area where Herbert found two species resident.

Family APODIDAE

Collocalia spp. Swiftlets.

In March, 1948, I was taken to see the breeding caves of *Collocalia* on the limestone islets called KOK SI KOK HA in the Inland Sea of SINGGORA. There are said to be 80 caves in these precipitous crags, and the monopoly for collecting the edible nests is granted for a period of three years for a fee of one million ticals. I was unable to determine the species of Swiftlet breeding here, but I was shown two distinct sizes of eggs. The breeding season (or, I should say, the collecting season) is from January to April.

I found no breeding colonies of these Swiftlets in the rocky islands of the Inner Gulf.

The local Siamese name for all Swiftlets and Swifts is *nok aaen lom*.

Apus affinis subfurcatus (Blyth). House-Swift.

Unlike Malaya, this is by no means a town-dweller in Siam; I have never seen a bird in BANGKOK. My only record is of a breeding colony with young in the nests, but no eggs, on the cliffs of KOK KHREUNG BADAL, an islet in the Inner Gulf. At two neighbouring islets, KOK RANG KWIEN and Tree Rock, there were abandoned colonies of nests, probably of this species, which had been the victims of human interference. These colonies were found on 22 May, 1949.

Cypsiurus parvus infumatus (Sclater). Palm Sweet.

Quite a common species a few miles north of BANGKOK, where there are plenty of sugar-palms growing in the padi-fields near the river.

Family HEMIPROCNIDAE

I have no records of Tree-Swifts in Siam.

Family TROGONIDAE

No records for Siam. I was very rarely in suitable territory.

Family ALCEDINIDAE

Ceryle rudis leucomelanura Reich. Pied Kingfisher.

This species is quite common in the Central Plain, and it appears to perform a local migration. It is to be seen quite commonly in BANGKOK during the rainy season, but about October it leaves the city and its environs and retires to districts where the rivers are lined by high banks suitable for nesting. Herbert records nests as early as 28th December and states that January is the best month for eggs; I was unable, either personally or through the agency of Majid, to visit suitable country so early in the year. On the KWARE YAI River a mile or two above KANCHANABURI I saw two males courting a female (and fighting over her) as early as 20 November, 1948: Majid visited the place in mid-February and again four weeks later. He found no nests with eggs, but on the second occasion he found a fully-fledged young bird in a nesting-tunnel five feet long.

On 14 April, 1949 on the Mae Ping below KAMPHAENG PHET I saw many disused nesting-holes in the river-bank and there were several pairs of adult Kingfishers escorting their young.

The earliest date on which I have observed birds around BANGKOK is 13 March, 1949 when I saw three together fishing along a canal. The shrill *bleep-bleep* cry, the hovering flight and (to a lesser extent) even the appearance of this Pied Kingfisher all are very like that of a Tern. However, I verified from local peasants that the Siamese name is the same as that used for species of rainbow hue—*nok kra-ten.*

Alcedo atthis bengalensis Gmelin.
Indian Common Kingfisher.

A very common species in the Central Plain; I think it performs a local migration, for it certainly is much more common in the dry season than it is during the rains. It is particularly common around the canals and ponds out in the padi-fields, when lesser waterways have dried out in the drought. Here, the species is adept at hovering over the water in search of its prey; I have timed them to hover for as long as eight seconds; when they tire, they fly round in a wide circle and then return to hover again. I have not seen Kingfishers in Malaya perform this hovering feat; may be the birds that frequent the Siamese rice-plains have been forced to learn the trick by reason of the lack of strategically-placed perches from which they can observe the water where they hope to fish.

On 22 May, 1949 I came across a single bird of this species on KOK LEUM YAI—the most northerly of the outer string of islets on the east side of the Inner Gulf. It was perched on a

rock at the foot of a great cliff. KOK LEUM YAI is a very steep, jungle-clad, island with no streams or pools of fresh water, probably with no water of any sort; it is 15 miles from the mainland, and altogether seems entirely unsuited to this hunter of fresh-water fish. In Vol. I of Birds of the Malay Peninsula, Robinson mentions a migration movement along the small islands in the Straits of Malacca between the months of October and March; perhaps this bird was concerned in a late migratory journey, or it may have been crossing the Gulf which, at this point, is fifty miles wide.

The Siamese name for all Kingfishers is *nok kra-ten.*

Pelargopsis capensis malaccensis Sharpe. Storkbilled Kingfisher.

I am not sure whether this species is resident in BANGKOK throughout the year; anvway, it is conspicuous only in the wet season when it becomes very noisy from May until October. Most of its calling is done whilst making brief, and apparently pointless, sortie flights at tree-top level.

Halcyon smyrnensis fusca (Bodd.). Whitebreasted Kingfisher.

In my experience this species is quite uncommon in the Central Plain and around BANGKOK. It is a common species at PAKNAMPHO, and on 6 April, 1949 Majid found two nesting-holes containing much incubated eggs: a clutch of four and a clutch of three. These 7 eggs averaged 1·16 × 1·02 inches.

Halcyon pileata (Bodd.). Blackcapped Kingfisher.

In my experience this species is not common in the Central Plain. I have met it only a few times: at the back of the coastal mangrove and in the padi-fields between BANGKOK and the coast.

Halcyon chloris humii Sharpe. Whitecollared Kingfisher.

Not very common in the Central Plain; it is of course a coastal species, and usually one can see a few birds in the coastal mangrove, and at certain times of the year (which I have not recorded) is fairly common in BANGKOK; I have even seen one flying screaming along one of the city's busiest streets in the middle of the day.

I have seen nests along Rajadamri Road, a tree-lined avenue on the outskirts of the city. They were in tunnels bored in ant's nests built on the trunks of trees. One contained a single egg on 28 March, 1949, and there were three slightly incubated eggs in another on 17 April, 1949. They averaged 1·21 × 0·94 inches.

Family MEROPIDAE

Merops superciliosus philippinus Linn.
Brownbreasted Bee-Eater.

This species seems to be locally migratory: it appears around BANGKOK and along the coast at the beginning of November; I am not sure when it leaves again—but certainly before the end of the dry season.

In April I found the species to be very common at PAKNAMPHO and further up the Mae Ping near KAMPHAENG PHET: on 12 April, 1949 I visited a large colony at PAKNAMPHO where several dozen birds were excavating tunnels in the soft clay of a high bluff; up-river they were excavating in the soft vertical faces of the higher sandbanks. On that date there were no eggs anywhere. On 28 April, 1949 Majid revisited the PAKNAMPHO colony. Some small landslides had caused havoc, and he found only two nests containing eggs. One held a clutch of three somewhat incubated eggs measuring 0·97 × 0·80 inches, 0·91 × 0·78 inches and 0·87 × 0·74 inches. The other contained a single fresh egg measuring 0·89 × 0·80 inches. The tunnels varied from 4 to 6 feet in length.

I ascertained that the local Siamese name is *nok khap kha*. It is the only species of Bee-Eater I recorded in Siam.

Family CORACIIDAE

Coracias benghalensis affinis McClelland — Burmese Roller.

A common species in BANGKOK, and wherever there are trees, throughout the year; particularly plentiful along the roadsides throughout the Central Plain during the dry season; in fact I am inclined to believe that the local birds are much augmented by visitors between the months of November and April, but I cannot present proof of this. At the roadsides, it is to be seen perching on telephone wires where such exist; elsewhere it will sit on a heap of road-metal or even squat in the dust. From its perch on the telephone wires or a pole, it will dive down clumsily to pounce on some insect in the grass verge of the highway. My wife has seen birds making repeated sortie flights from a tree in our garden; they would swoop in under a creeper-covered loggia to snap up the very large black bees feeding on the clusters of flowers.

I never found a nest; but both in 1948 and 1949 I saw adults escorting newly-fledged young during the month of April; apparently the young have to be fed for some time after they leave the nest.

I verified that the local Siamese name is *nok ta-karp*.

Eurystomus orientalis orientalis (Linn.). Broadbilled Roller.

I have not seen this species anywhere in Siam; but then it is a forest bird, and I was very rarely in forest country.

Family UPUPIDAE

Upupa epops longirostris Jerdon. Hoopoe.

I have not met this species anywhere in the Central Plain; in fact personally I have not seen it anywhere in Siam. At PAKNAMPHO, on 14 April, 1949, a rather ignorant Siamese showed me an incomplete nest of grass and rubbish which was being built inside the cieling of an open pavilion on the river-bank. It was about the size of a Myna's nest; but the man knew a Myna by sight and name, and was positive it was not a Myna's nest. He described the owner as a bird with a long curved bill and a crest; and I think it must have been a Hoopoe. We waited as long as we could, in the hopes of seeing the bird bring material to its nest, but it did not come. When Majid returned at the end of the month he found that the nest had been pulled down.

The Assistant Naval Attache, U.S. Embassy, described accurately to me a Hoopoe which he saw feeding young in a nest under the eaves of a bungalow at HUA HIN, early in April, 1949.

I did not ascertain the Siamese name for the species.

Family BUCEROTIDAE

Buceros bicornis Linn. Great Hornbill.

I saw a bird of this species in virgin jungle near KAMPHAENG PHET on 14 April, 1949. I ascertained that the local Siamese name is *nok nang*—not to be confused with the name *nok narng* (*nuan*) used for the Terns. It is the only species of Hornbill I saw in Siam.

Family CAPITONIDAE

Megalaima haemacephala indica (Latham). Coppersmith Barbet.

Very common around BANGKOK, and I have seen it at CHIENGMAI also. At BANGKOK I have seen birds excavating nesting-holes in late December. On 23 February, 1949 I examined one nest which contained a nestling, and another containing a nestling and an added egg measuring 0·95 × 0·66 inches.

I did not ascertain the local Siamese name. It is the only species of Barbet I noted in Siam.

Dicrurus adsimilis cathoecus Swinhoe. Chinese Black Drongo.

An extremely common bird in winter, when it will be met in large numbers in the dry padi-fields and along the road verges. Several times I have seen parties of these Drongos perching on tussocks of grass in the midst of a flock of feeding cattle egrets. The movements of the Egrets flush large numbers of grass-hoppers and other insects which the Drongos snap up with the minimum of exertion. This species also perches on the backs of cattle.

I have no definite dates of arrival or departure; but my general impression is that large numbers of visitors arrive about the end of November and stay until April. A few pairs stay on throughout the year: I have seen them at HUA HIN at the end of May, and at NA KOK, near TACHIN, throughout June. They were breeding at NA KOK: Majid found a nest on 4 June, 1949 which he showed to me on 12 June, 1949, and he got another on 25 June, 1949. He shot one of the parents from the first nest (Specimen 13/49), and it was identified as this species by Dr. Gibson-Hill. There were quite a lot of birds around NA KOK village when I visited the place on the 12th, and a small boy brought in a nest containing 3 young birds which I presume to be of this species. Both the nests were in small *Avicenna* trees just on the fringe of the village; one overhung the path leading from the village to the railway station. They were 18 feet and 10 feet above the ground respectively. Neither was slung *between* the two arms of a forking branch—as are most Drongos' nests that I have seen; both were built *on top* of the fork and were bound in place with tangles of spider-web. They were firm thick cups made of interwoven vine stems, leaf stalks and a few fine twigs and leaves. Though neat and robust, one could see right through the bottom. The internal diameter was about 2¾ inches and the internal depth was 1¼ inches. The first nest contained a single egg which had hatched by the time I received it. The second nest contained 3 partly-incubated eggs; these measure 0·91 × 0·71 inches, 0·88 × 0·71 inches and 0·88 × 0·72 inches. The shell is fine but glossless. The ground colour is cream with a salmon-pink tinge. They are spotted with dull madder-brown, most of the spots being concentrated in a ring near the larger end.

I verified that the usual Siamese name for all Dronges is *nok saaeo*.

Family ORIOLIDAE

Oriolus chinensis diffusus Sharpe. Blacknaped Oriole.

I have seen a few birds in the wooded parts of BANGKOK during the winter months, but I have no dates of arrival or departure.

Family CORVIDAE

Corvus macrorhynchus andamensis Beavan. Largebilled Crow.

I have nothing to add to Herbert's account of the breeding of this species in BANGKOK. It also breeds in the coastal mangrove between PAK NAM and BANG POO; I had nests there in January, 1949.

Crypsirina temia (Daudin). Racquet-Tailed Magpie.

Herbert recorded this as a common breeding bird of the scrub-jungle on the outskirts of villages near BANGKOK. The fact that Majid and I never found a nest or even identified the species does not mean that it no longer occurs in its old haunts: I just never applied myself to the problem of identifying a species which is quite unknown to me, and I never "briefed" Majid to look for it. Still, it is strange that we never came across it fortuitously; for we spent a good deal of time in areas where apparently it was common in Herbert's day.

Family PARIDAE

I have no records for Siam.

Family SITTIDAE

I have no records for Siam.

Family TIMALHDAE

The country in which I did most of my bird-watching is singularly unsuitable for Babblers: so it is not surprising that in the Central Plain I only once came across a member of the family—a specimen of *Malacocincla abbotti* (the Common Brown Babbler) shot in scrub jungle on the river-bank above BANGKOK on 27 June, 1948.

Family AEGITHINIDAE

Ægithinia tiphia tiphia (Linn.). Bengal Common Iora.

I gained the impression that this is not a common species in the Central Plain: I came across it occasionally in BANGKOK gardens and also in the coastal mangrove.

Family PYCNONOTIDAE

Pycnonotus atriceps cinereoventris (Blyth). Blackheaded Bulbul.

I did not come across this species in the Central Plain; but observed a small party on the fringe of dense jungle near KAMPHAENG PHET on 15 April, 1949.

Pycnonotus jocosus pattani Deignan. Redwhiskered Bulbul.

This seems to be the common Bulbul of CHIENGMAI, but I did not meet it anywhere in the Central Plain.

Pycnonotus goiavier personatus (Hume). Yellowvented Bulbul.

On 22 May, 1949 I came across a few birds of this species feeding in the low scrub on KOK MAN WICHAI, one of the rocky islets in the Inner Gulf, about 18 miles out from the eastern shore. As Herbert recorded it from the environs of BANGKOK, I kept a close watch for it, but never once located the species on the mainland.

Pycnonotus blanfordi robinsoni O.-Grant. Olive-brown Bulbul.

I found this species very common in BANGKOK gardens, but by no means common in other parts of the Central Plain where there was equally suitable territory, though in the dry season it may be met in the clumps of thorn trees in padi-fields around BANGKOK. I had nests in my own garden in January, February, March and June.

The usual situation would appear to be between five and ten feet from the ground in a bush; but I have had a nest in a creeper hanging over a loggia, and another which was 25 feet from the ground in the almost leafless top of an Indian Jujube Tree (*Zizyphus jujuba*). The nest is a firm but rather coarsely constructed cup made with small twigs, leaf-stalks and grass, with a good deal of spiders-web stuck on the outside. The egg-chamber is about 2¼ inches in diameter and about 1¼ inches deep. It is generally rather insecurely fastened on top of a few horizontal twigs; and I have seen a nest on the point of collapse long before the nestlings were ready to fly. Two eggs are laid. The shell is smooth and fairly glossy. The ground colour is milky-white, thickly peppered with fine spots of purple-brown and lavender. I have the measurements of only one clutch —0·81 × 0·61 inches and 0·80 × 0·61 inches.

I took observations of two nests containing young birds from a "hide" about 4 feet from the nest. In one case the young birds were stolen by Crows before they were ready to leave the nest (not the only instance I have observed of Crows robbing nests of this species); in the other case the eggs both hatched on 4 March, 1949 and the young left the nest on 15 March, 1949. The parents continued to feed their young for a few days after they had flown. I do not know whether the parents shared the duty of brooding the eggs throughout the incubation period; but I saw the male take over from the female one day after one of the eggs had hatched, which was one day before the second egg hatched. The female would leave the nest when the male started calling from a nearby hedge; then

the male would either take her place or would remain in the hedge calling at intervals. In either case, the female would return to duty after about five minutes.

I have no complete record of diet; because one nest was robbed when the youngsters were only 5 and 3 days old respectively, and I did not start observing the other nest until they were already 6 days old. At the first nest, caterpillars were being fed to the young on the first and second days after the second egg was hatched. At the second nest, caterpillars and a grasshopper were brought on the sixth day after hatching; the same diet was served on the seventh day; I did not observe on the eighth day; on the ninth day the birds brought only some green and red berries (both apparently of one and the same variety, which I could not identify); on the tenth day another variety of scarlet berry was brought together with a number of small caterpillars.

At the first nest, no nest-sanitation was observed up to the time of the fatality. At the second nest, on the sixth and ninth days I observed a parent remove faeces from the raised cloaca of one of the nestlings, and swallow it then and there.

I verified that the Siamese name of this species is *nok pa-rawt*.

Family TURDIDAE

Copsychus saularis musicus (Raffles). Magpie Robin.

This species is very common in BANGKOK gardens, and I have seen numbers of nests between March and June, all inside the little "spirit houses"—small shrines in the shape of a house or temple, which are placed in nearly all Siamese gardens. I observed one of these nests from a "hide" tent at close range: the food consisted only of caterpillars; on most occasion faeces were removed in the parent's bill when it flew from the nest after delivering food—and they were picked up from the edge of the nest where the youngster had voided them; but on one occasion I saw a parent consume the faeces which had been voided straight into its bill from the upturned cloaca of the young bird.

I have observed male Magpie Robins giving a threatening display: they turn their backs on the object of their displeasure, raise the tail and fan it out to show the white outer retrices and under-tail coverts, and utter a constant angry "churr". The object of displeasure was not always apparent; sometimes it was another male or female Robin, or a Wagtail or Mynah, feeding nearby; sometimes it was a passing human being; and sometimes there was no other living object in sight. I saw this display given only on the ground whilst feeding—never in trees or bushes. It does not seem to be a habit confined

to the courting or breeding season, for I noticed it mostly during December, when there is no reproductive activity.

In addition to BANGKOK, I have seen birds in the coastal mangrove, in the thorny scrub fringing water-channels in the padi-fields (only during the dry season), and in the scrub on the rocky islets in the Inner Gulf.

I verified that the local Siamese name is *nok kang kane*.

Saxicola torquata stejnegeri (Parrot). Siberian Stone-chat.

An extremely common winter visitor to the padi-fields and roadsides of the Central Plain. My earliest date was 10 October, 1948; but I have no doubt that first arrivals were a good deal earlier; for on that date they were in considerable numbers, and I had not been out of town for several weeks. They are extremely common through November and December; but after that the numbers seem to drop notably. My latest record is on 12 February, 1949, when I saw several individuals in the MINBURI area.

Monticola solitaria ? madoci Chasen. Blue Rock-Thrush.

On 26 March, 1948 I saw a pair courting most vigorously at the foot of a cliff on the limestone islets, KOK SI KOK HA, in the middle of the Inland Sea of Singgora. If these birds were breeding it would seem that they must have been examples of the Malayan race, *madoci* Chasen. I asked the local Siamese if they have a name for the bird, but they offered *nok kang kane*—the name given to the Magpie Robin.

On 6 February, 1949 I shot a solitary bird perching on a mooring post at the mouth of the RANGSIT Canal. Specimen 3/49. Unfortunately it was a female, so Dr. Gibson-Hill has been unable to determine the race.

On 6 November, 1949 I saw a single male bird near PRACHINBURI, on the foothills at the northern edge of the Central Plain. Unfortunately I could not get close enough to determine the sub-species. It was moving amongst some huge granite outcrops—quite an ideal nesting site, if this were a resident race.

Family SYLVIIDAE

Gerygone sulphurea Wallace. Fly-Eater.

Fairly common in the coastal mangrove between PAK NAM and BANG POO; I verified my aural identification by shooting a specimen for examination.

Cisticola juncidis malaya Lynes. Streaked Fantail Warbler.

Common in the padi-fields of the Central Plain, but not so numerous or so evenly distributed as the Greater Brown Wren-Warbler (*Prinia inornata herberti*). Its localized distribution

is natural; for it nests very close to the ground and thus has to select the few areas which are free from flooding in the rains, whilst *Prinia* makes its nest two or three feet from the ground, and so can build over water of moderate depth. In my experience (which is not nearly so extensive as that of Herbert) this species builds later than *Prinia:* I have had nests only in July. I have found nests only at the 77th kilo., Bangkok —Lopburi highway; though I have seen many birds near BANGKOK during the supposed breeding season. Three eggs seems to be the usual clutch, but on 21 July, 1948 I found a nest containing four eggs. I have the measurements of only two clutches, each of 3 eggs: one clutch averaged 0·54 × 0·42 inches and the other was 0·59 × 0·43 inches. Unfortunately Herbert records no measurements of the long series of nests he found. At Sime Road Internment Camp, Singapore, the average size of 15 eggs was 0·63 × 0·45 inches.

Siamese peasants who were in my company when I visited various nests of this species at the 77th kilo., insisted that the nests and eggs were those of the Button-Quail (*Excalfactoria chinensis*) which they described by its Siamese name and also identified in the flesh. Evidently this is a common local misconception.

The local Siamese name for this species is *nok ka-chip,* which is the name given to nearly all Warblers and many other small Passerine birds.

Prinia flaviventris rafflesi Tweed. Yellowbellied Wren-Warbler.

Herbert recorded this species as breeding near BANGKOK and also at SAMKOK. Usually it is a quite conspicuous bird with a quite unmistakeable song; and I am sure that Majid and I would not have missed it were it now present in any parts of the Central Plain which we frequented. But during my short trip to the valley of the Mae Ping between PAKNAMPHO and KAMPHAENG PHET I found it to be common in the thick coarse grass which clothes the river banks and the higher sand-bars.

Prinia inornata herberti Baker. Greater Brown Wren-Warbler.

This is an extremely common bird in BANGKOK and the surrounding country. I am not sure whether there is any local diminution in numbers out of the breeding season: certainly fewer birds came to my notice between the months of August and March inclusive, but that may be only because the birds are almost silent outside the breeding season. In March they perk up as soon as the "mangrove showers" give temporary relief from the long dry season; but usually dry weather sets in again after these few days of rain, and the birds become silent once

more until the monsoon arrives. Their apparent dependence on rain was illustrated in 1949 when the monsoon made a false start early in April: the sedges in which these birds build their nests sprang up in every pool and waterway, the Wren-Warblers started their incessant calling, and on 23 April, 1949 I found a nest containing 2 eggs. Then the rains stopped, and the drought extended into mid-June whilst much of the new green withered. The birds became silent again, and we found no more nests until the rains returned. I found one on 19 June, 1949; it contained 3 eggs. I examined the grass of which it was made and found that the dry heat had made it brittle and powdery. In 1948 there had been no early false start to the rains: they came normally, in May; and through May and June I found many nests, plus a few in July; the plucked grass of which these nests were woven remained green and pliant in the wet weather.

The normal clutch is 4 eggs: they average 0·60 × 0·47 inches. I have a complete breeding record of only one nest; the last of the 4 eggs was laid between 0730 hours on the 25th and 0800 hours on the 26th April and they all hatched between 0730 hours on the 6th and 0730 hours on the 7th May. All the nestlings left the nest between 0730 hours on the 17th and the same hour on the 18th May. I watched the parents feeding young in a nest, using a "hide" tent erected three feet distant. All the feeding was done by one bird (presumably the female), whilst its mate sat on a nearby perch and called encouragingly. Caterpillars, grasshoppers and spiders' egg-bags were fed to the young; on several occasions faeces were picked out of the nest and carried away in the bird's bill.

The usual nest was a purse-shaped structure supported by stalks of the sedge, *Scirpus grossus*. The fine grass of which the nest was built was woven around a number of these stalks —17 stalks were thus incorporated in a nest which I examined closely. These nests in *Scirpus* usually were slung over the water at the edge of a pool or irrigation channel at a height of about 18 inches above the water. I found other similar nests built in coarse grass (*Imperator* sp.) overhanging the bank of a canal; such grass does not provide such firm support as the sedge, and one nest which I examined closely was woven around 39 stems of the grass.

Majid showed me a third type of nest in the salty marsh-land immediately behind the coastal mangrove near BANG POO. This was a pouch hanging from a single twig of a small bush, at a height of 2 feet above the ground. The twig was woven into the upper curve of the rounded back of the pouch. The nest itself was made of fine grass. In shape and method of

attachment it was very like a Flower pecker's nest. It contained nestlings. The parents were in close attendance, and I made a visual identification at extremely close range. Herbert noted a similar type of nest in the TACHIN area.

I verified that the local Siamese name is the usual *nok ka-chip*. I did not find that Siamese peasants normally distinguish between various species of small Warblers by adding to the name a descriptive adjective such as *hang pen* (= fan-tailed) and *hang yao* (= long-tailed). I wonder whether Herbert's collectors really got these names from peasants or whether they coined them to aid them in naming species between which the ordinary peasant makes no differentiation.

Megalurus palustris andrewsi Bangs.

Striated Marsh Warbler.

I found this species in only one part of the Central Plain —on the grazing land at the 77th kilo., Bangkok—Lopburi highway. I have nothing to add to Herbert's account of its unusual appearance and its nesting habits.

The local Siamese name is *nok pa-rawt* (the name given to the Bulbuls). The local peasants did not know the name *nok a pork ngua* quoted by Herbert.

Acrocephalus arundinaceus orientalis (Temm. & Schleg.).

Japanese Great Reed-Warbler.

I have noted this migrant only in April and May, when it is very noisy and will be found skulking amongst the thorn trees and scrub fringing irrigation-channels in the padi-fields around BANGKOK, and also will be found at the back of the coastal mangrove. My latest date was 9 May, 1948, when I shot two specimens at the back of the mangrove near BANG POO; possibly the species may be found at later dates, but I had no opportunity to continue my observations of it.

Orthotomus atrogularis nitidus Hume.

Indochinese Blackthroated Tailor-Bird.

I did not find this species in the Central Plain or around BANGKOK, where, indeed, Herbert found it only in the fruit-gardens on the west bank which I scarcely visited.

I found it only on the edge of virgin jungle near KAMPHAENG PHET.

Orthotomus sutorius inexpectatus La Touche.

Indochinese Longtailed Tailor-Bird.

A very common species in BANGKOK gardens and in the little patches of scrub in the padi-fields. I have nothing to add to Herbert's account of its local nesting habits.

Family MUSCICAPIDAE

Rhipidura javanica longicauda Wallace. Pied Fantail-Flycatcher.

A fairly common species in BANGKOK gardens and in the scrub fringing the waterways.

Terpsiphone paradisi subsp. Paradise Flycatcher.

On 1 February, 1948 I saw a female in the THONBURI fruit-gardens. I was not able to determine the race.

The above are the only two Flycatchers that I recorded in Siam.

Family MOTACILLIDAE

Motacilla lugubris ? leucopsis Gould. Pied Wagtail.

A common winter visitor to BANGKOK. In 1948 I recorded the first arrivals on 22 October, and for 1949 the date was 19 October. I have no conclusive date for departure; but I recorded the birds as still present on 7 March, 1949, and I am pretty sure that none remained in BANGKOK after the end of March.

Anthus cervinus (Pallas). Red-Throated Pipit.

Not uncommon in BANGKOK and along roads of the Central Plain in the winter months. I have seen it only in mixed flocks with *Anthus richardi*.

Anthus hodgsoni inopinatus Hart. & Steinb. Tree-Pipit.

A common bird in CHIENGMAI; but I have not met it anywhere in the Central Plain.

Family ARTAMIDAE

Artamus fuscus Vieillot. Ashy Swallow-Shrike.

I have no interesting records about this bird. I have seen it in the fruit-gardens of THONBURI, and in CHIENGMAI and its environs.

Family LANIIDAE

Lanius schach schomburgki. Black-Headed Shrike.

A very common species throughout the Central Plain; it frequents places where it can enjoy a variety of high perches—trees, telegraph poles or their wires—from which it can dive on its prey in the grass below. The only food I have seen it capture is grasshoppers. During the cool season this bird was particularly common along the roadsides; then I observed a

marked diminution in numbers between the months of February and June inclusive. From the end of June onwards the bird seemed to be as common as ever. According to Herbert, for part of the period I quote, in May and June, the birds are nesting; that may be why they are no longer conspicuous along the roads, for the nests usually are in trees out in the padi-fields. I found nests on 21 April, 1948 (with 4 slightly incubated eggs) and on 23 June 1948 (with 3 fledglings). My observations on the nests and eggs coincide with those published by Herbert. My clutch of 4 eggs averaged 0·98 × 0·71 inches.

Lanius cristatus cristatus Linn. Siberian Brown Shrike.

Shrikes of this species are common in BANGKOK gardens and along the roads towards the coast; I have no record of the species further up into the Central Plain. My earliest record of an arrival is 23 September, 1949. I have no definite record for departure; I recorded that the species was still present on 22 May, 1948. The bird is noisy and pugnacious, and I have seen it drive away much larger birds—such as Mynas.

Family STURNIDAE

Gracula religiosa intermedia Hay. Indochinese Grackle.

The wooded belt along the Mae Nam Chao Phya, above BANGKOK, seems well suited to this species, but in fact I never came across a Grackle in the Central Plain.

Majid and Aziz found a pair breeding near KAMPHAENG PHET on 27 April, 1949. The eggs were laid in a hollow at the end of a broken, rotted branch, about 30 feet from the ground on a teak tree in the open "pa daeng" forest. One egg was smashed by the climber; the other was considerably incubated. It measures 1·33 × 0·96 inches. The ground colour is pale bluish-green. It is evenly but faintly blotched with purplish-brown. (Majid reports that the smashed egg was similarly coloured). Thus this clutch differs markedly in colour from the richly coloured, boldly marked, eggs of *Gracula r. religiosa* that I have seen in the Malay state of Pahang.

Local peasants recorded in Siamese script that the name for this species is *nok khun thawng*.

Sturnus sinensis (Gmel.). Chinese Starling.

I have seen this species only once—a flock at AYUTHIA in November, 1948.

Sturnus nigricollis (Paykull). Black-Collared Myna.

The most common Mynah in BANGKOK, and very common around villages and scrubby areas in the padi-fields. I gained

the impression that the BANGKOK birds leave the suburbs in the dry season and join their fellows out in the padi-fields. At most times of the year they travel around in flocks of up to forty birds.

They breed in the padi-fields, building large, conspicuous, untidy nests in small trees and clumps of bamboo. They build their nests at the end of February or beginning of March, and by the second week in April all the eggs have hatched. I do not agree with Herbert's observation that "the nesting season extends over several months from the commencement of the rains": I could find no nests in use after the end of April.

The Siamese name for all Mynas is *nok iang*.

Acridotheres tristis tristis (Linn.). Indian Common Myna.

A fairly common species in BANGKOK and the surrounding country, but not so common in the city as the preceding species. On 8 September, 1948 I found a nest containing young birds under the roof of a building in my garden. At PAKNAMPHO, on 12 April, 1949, I watched a bird building under the eaves of a house. There it is a fairly common species, but not so common as the preceding and the following species.

Acridotheres cristatellus grandis Moore. Siamese Crested Myna.

The least common of the Mynas around BANGKOK, and very localized: I have seen it only beyond the fruit-gardens on the west bank beyond THONBURI and in the rice-fields beyond BANGKOK's eastern suburbs. The only other place in the Central Plain where I have met it is AYUTHIA; there it is quite common. At CHIENGMAI I got the impression that it is the most common of the Mynahs. I also got that impression at PAKNAMPHO; there, Majid obtained a nest on 26 April, 1949. It was built between the ceiling and roof of a small pavilion on the river-bank, and was constructed with the usual untidy mass of straw and rubbish. It contained 4 very much incubated eggs.

Sturnopastor contra floweri (Sharpe). Pied Myna.

This bird is common in many parts of the Central Plain, including AYUTHIA in the north, HUA TAKAE in the east, the salty coastal marshes near BANG POO in the south, and NAKHORN PATHOM in the west; but I have never met it within fifteen miles of BANGKOK. In many places I have seen mixed flocks of this bird and *Sturnus nigricollis*.

In my experience this species starts nesting a good deal earlier than *S. nigricollis*, and in the MINBURI area on 12 February, 1949 we saw many pairs busy building nests; but none of those that we examined had eggs or young. But on

15 February, 1949 in the same area Aziz obtained a clutch of three considerably incubated eggs. The nest was the typical Myna's structure, 27 feet from the ground near the tip of a bamboo. The untidy mass of straw was lined with dead grass, a few pieces of fish-skin and the sloughed skin of a small snake.

During a visit of 4 days to the PAKNAMPHO—KAMPHAENG PHET area, I saw no signs of this species in April, 1949.

Family NECTARINIIDAE

Leptocoma jugularis flammaxillaris (Blyth).
Yellowbreasted Sunbird.

Quite a common species in BANGKOK gardens, but I have no observations worth recording.

This is the only species of Sunbird that I saw in Siam. Admittedly I scarcely visited Herbert's favourite fruit-gardens on the west bank; but I did spend a good deal of time along the river-banks above BANGKOK, and also in the coastal mangroves,—all areas where one would expect to meet some variety of Sunbird.

I never saw or heard a Spider-Hunter.

Family DICAEIIDAE

Dicaeum cruentatum ignitum (Begb.).
Scarletbacked Flower-Pecker.

Not uncommon in BANGKOK gardens. This is the only species of Flower-pecker that I met in Siam.

Family ZOSTEROPIDAE

Judging by my experience in Malaya, the White-Eyes would be difficult to miss in the mangrove if they were there; but I never saw or heard a trace of them.

Family PLOCEIDAE

Passer montanus malaccensis Dub.
Malaysian Tree-Sparrow.

Quite a common species around BANGKOK; at certain times of the year large flocks may be seen in the avenues of trees north of the city. I did not establish whether it is entirely replaced by the next species away out in the padi-fields.

I verified that the Siamese name is *nok kra-charp*.

Passer flaveolus Blyth. Pegu House-Sparrow.

In the Central Plain this is a bird of the stubble-fields, the rick-yards and the dusty roads. I have seen it twice in my BANGKOK garden; but in BANGKOK and in most of the villages—and particularly in the vicinity of rice-mills—it is replaced by *P. montanus*.

Outside, BANGKOK, I saw a pair courting on the dusty verge of the road: the male was giving a display to the female; he stood with his body very flattened-out, with his tail raised, and quivering his lowered wings—altogether a posture much more suited to the female, and I suppose he was encouraging her to emulate him. The date of this observation was 14 June, 1949.

On 30 June, 1949 Majid found a nest under the eaves of a temple near the 77th kilo., Bangkok—Lopburi highway. It contained two nestlings and an addled egg.

Munia punctulata topela Swinhoe. Chinese Spotted Munia.

Quite a common breeding bird in BANGKOK gardens. I have records of nests in May and June. This is the only species of Munia which I have recorded in Siam. I do not suggest that other species will not be found in the Central Plain, for I may have neglected the genus; but certainly I was surprised to find that this great plain of rice and grassland is not thronged with those busy little parties of various Munias which are such a typical feature of open country in Malaya.

Ploceus philippinus infortunatus Hart. Eastern Weaver-Finch.

A very common species which breeds in gardens, in the patches of scrub which line waterways and surround villages, and at the back of the coastal mangrove. I have notes of eggs in nesting colonies in May.

I verified that the Siamese name is *nok kra-charp*.

Ploceus manyar peguensis Baker. Striated Weaver-Finch.

In my experience this is a very localized species: I did not see any birds outside the breeding season, but I found nesting colonies near PATHUMTHANI and at the 77th kilo., BANGKOK—Lopburi highway. The Pathomthani colony was very small, and all the nests were suspended from a bush over water. There were several colonies at the 77th kilo,, all built in the great clumps of *Scirpus grossus* surrounding small pools. Here, on 3 July, 1949, I found large numbers of nests (of which rather more than 50% were cock-swings) all built in the sedges, and all located in such sedges as were growing at the very brink of open water. Apparently they did not care to build in the

middle of the dense and featureless groves of these eight-foot grasses; but on 6th July of the previous year I found numbers of cock-swings (but no genuine nests) away in the middle of the reed-beds. But by that date last year the buffaloes had already been driven into the swamps and had beaten out corridors through the dense vegetation.

In all cases at the 77th kilo. I found that the nests were most intriguingly slung between ten or more stalks of *Scirpus*. This sedge bursts into a number of leaves like blades of grass, forming a top-knot. The birds had drawn one or two leaves from each top-knot into the apex of the nest, so that it hung in the centre of a circle of *Scirpus* stalks all of whose heads were bent in to the centre. The workmanship of the actual nest is not nearly so neat as that of *P. philippinus infortunatus*. The shape—particularly of the top of the nest—is not regular, and the weave is not so fine and smooth. The entrance-tube is much shorter than that of the latter species; and a curious feature was that those nests which contained eggs or were not yet completed had particularly short tubes, not projecting even as low as the bottom of the nest; but some I found, which either contained young or had been abandoned after use, which had longer entrance-tubes—some even projecting two or three inches below the bottom of the nest. It seems to me possible that the parents extend the tube at some stage during incubation or after the eggs have hatched.

None of the nests that I have seen were hung in places infested with red ants—as is the usual custom of *P. philippinus:* but all except those attached to a bush near PATHUMTHANI were hanging on vegetation growing in deep water.

The normal clutch seems to be two eggs, judging by those I have examined at the 77th kilo.; but Herbert, who may have seen far more than I, states that the usual clutch is four. I have measurements of only one clutch:—0·78 × 0·55 inches and 0·77 × 0·55 inches.

Emberiza aureola ornata Shulpin. Yellowbreasted Bunting.

This bird appears in large flocks in the Central Plain in the winter months. I have seen it both out in the padi-fields and at the back of the coastal mangrove. I have no dates for arrival or departure.