





MICROPTERNUS BRACHYURUS WILLIAMSONI.



TACHORNIS BATASSIENSIS INFUMATUS.

THE BIRDS OF SOUTH-WEST AND PENINSULAR SIAM.

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NESTS AND EGGS OF BIRDS IN CENTRAL SIAM.

BY E. G. HERBERT, F. Z. S., M. B. O. U.

WITH PLATES 20 AND 21.

(continued from p. 311.)

62. *Dryobates pectoralis pectoralis*.

THE SPOTTED-BREASTED PIED WOODPECKER.

Vernacular, "Nok hua kwan lek."

This little Woodpecker is found in moderate numbers in all the fruit gardens of Bangkok, but I have seldom seen it elsewhere.

The nesting hole is generally made in the stem of a betel palm which has not been long dead, or sometimes in a dead cocoanut palm, and is situated at a height of twenty to thirty feet from the ground. The usual neat little hole is cut in the hard surface of the palm, and the soft fibrous interior is excavated to a depth of about six inches. On two occasions the bird was taken on the nest in full daylight, and in each case it was the male, which was released after careful examination. My experience with all the Woodpeckers has been the same, that whenever a bird was taken on the nest in daylight, it was invariably the male. The nesting season is January and February.

The eggs are very regular ovals, often without any appreciable difference between the two ends, although some are slightly more pointed towards one end. They are pure china white, with a glossy surface. Four eggs is the full complement and the average size for twenty eggs is 21.0×16.0 mm.

63. *Micropternus brachyurus williamsoni*.

THE SIAM RUFOUS WOODPECKER.

Vernacular, "Nok hua kwan".

Plate 20.

I was fortunate in obtaining the nest of this most interesting bird on two occasions, and I think it is highly probable that both nests belonged to the same pair of birds. My reasons for thinking this are that the second nest was taken a fortnight after the first, from a place very near by and, considering that the Rufous Woodpecker had seldom been seen in the Bansakai gardens which I was in the habits of visiting regularly, it would have been a curious

coincidence for one pair to follow another to almost the same spot in such quick succession

The first nest was discovered on a mango sapling, at a height of about ten feet from the ground. The collector noticed the circular hole in the ants' nest when he was going on his rounds and shook the sapling, which flushed the bird from the nest. He probably shook it rather violently, as the stem was not thicker than his wrist, and so gave the bird a bad fright, for it deserted the nest. He reported it to me that morning and I visited the place later in the day and, as the bird had not returned, I took the three eggs, which I found to be in an early stage of incubation.

The second was in a similar ants' nest on one of the shade trees for the betel vines, at about the same height from the ground and some 200 yards away from the other sapling. In this case the bird was successfully snared as it left the nest, and was taken by means of a fishing rod with a noose at the end of the line. The snare was suspended in front of the entrance, and then a kick on the tree accomplished the desired result. The bird was found to be the male, and it was caught an hour before sunset, so there was still full daylight. The skin was preserved and sent to the British Museum.

The nest was made by excavating a cavity in the globular shaped nest of the tree-ant. These ants' nests are built round a fork on the stem of a sapling, and measure ten inches to a foot in diameter. The material is exceedingly hard, and so stands up to the work of the Woodpecker without cracking or breaking away too freely. The two nests were practically the same, and in both cases the bird made use of the fork of the tree for the entrance. This is well brought out in the illustration, which shows two views of the same nest on one plate. The nests were partially occupied by ants whilst the birds were sitting, and remains of the ants were found in the stomach of the bird which was caught, as well as many heads attached to the tail feathers. It will therefore be seen that this Woodpecker attacks a "live" ants' nest in its most perfect condition, just in the same way that *Sauropatis chloris chloris* does with the nest of the large black ant.

The eggs are slightly elongated ovals, fine in texture, but with a mat surface, and in that respect unlike any other Woodpecker's eggs that I have seen. The shell is very hard and cannot be punctured with a pin, though it is reported to be "extremely thin and fragile" in Hume's "Nests and Eggs of Indian Birds." It is translucent and not only are the contents visible, but if water is injected into the empty shell, the amount can be clearly seen. Three eggs were found in each of the above nests, and this seems to be the usual complement. The average size for the six eggs is 26.2×19.2 mm.

64. *Tiga javanensis intermedia*.

THE BURMESE GOLDEN-BACKED THREE-TOED WOODPECKER.

Vernacular, "Nok hua kwan deng."

I only obtained one clutch of this Woodpecker's eggs, but the bird is not by any means rare in well wooded parts.

The nest was in a living tree on the bank of the river at Ban Khang, at only three feet from the ground and in such a position that it could be clearly seen from a launch when passing. The male was caught on the nest at three in the afternoon, and was released after a careful examination. The date was 14th of June.

The nest contained three eggs, which are moderate ovals and slightly compressed towards one end. In appearance they are glossy white, and quite typical of the Woodpeckers. The average size for these three eggs is 26.8×19.8 mm., and I believe that three is the full complement.

65. *Tachornis batassiensis infumatus*.

THE EASTERN PALM SWIFT.

Vernacular, "Nok ee-an lek".

Plate 21.

I found these tiny Swifts very numerous amongst the palmyra palms below Chiengrak on the east side of the river, and I also found a few at Ban Khang, but I was not successful in obtaining any eggs until my last year. In Burma they are said to breed in March, April and May, so I looked for their eggs in April, but in 1920 I found they were breeding at Ban Khang, as early as the 15th February. Only one nest contained eggs, and that had a pair which

were slightly incubated, but unfortunately the boy damaged one when bringing them down.

The nest was built in a "V"-shaped groove of one of the bottom leaves of a palmyra palm, at about 40 feet from the ground. It was composed of fluffy grass seeds cemented together with saliva, and a few odd feathers on the outside in the form of decoration. The latter show up very clearly in the illustration, but the nest was a difficult subject to photograph, and the outline of it is not very distinct. The dimensions are $1\frac{3}{4}$ inches from back to front, $1\frac{1}{4}$ inches for the width, with an inside depth of $\frac{1}{2}$ inch.

The eggs are elongated ovals, with both ends alike. The colour is pure white and without any specks. The shell is very fine in texture and frail, but without gloss. The measurements are 16.5×11.5 mm.

66. *Tyto alba javanica*.

THE INDIAN BARN-OWL.

The Barn-Owl, or Screech Owl, is very common in Bangkok, and may be found "nesting" in the roofs of temples and houses, or in hollow trees.

The eggs are laid on the bare surface, of whatever it may happen to be, and I have never seen any nesting material used. January is the best month for eggs, although many may be found in February. In shape they are fairly broad ovals with one end rather smaller than the other. The colour is pure white and the surface is without gloss. Five eggs is the usual complement, and occasionally six. The average size is 43.0×33.5 mm.

67. *Strix seloputo*.

THE MALAYAN WOOD-OWL.

This large Wood-Owl is not found in Bangkok, and I have only heard of two or three pairs within a radius of 50 miles. I have, however, obtained a single egg on two occasions from the Samkok district:—One egg (23.2.14) from the village on the east side of the river opposite Koh Yai and another (15.2.16) from a tree near the temple which is opposite the lower end of Ban Khang.

In both cases the "nest" was in a large open branch-hole of a tree, at about 25 feet from the ground, and the egg was on the

wood without any nesting material. In the second case the man just missed the bird, which did not return to the nest. During the last year that I was in Bangkok I tried to get more eggs, and although I had news of a pair of these owls at Ban Yang (Tachin), as well as a pair at Samkok, I was not successful in getting any more eggs.

The eggs are very round ovals, with both ends alike. They are pure white, with a very satiny surface and a fair amount of gloss. The shell has a number of pimples on the surface, as is so often the case with the eggs of the smaller owls, and this feature, together with the satiny appearance and peculiar shape, definitely mark it as a Wood-Owl's egg. Two eggs are probably laid, but I do not know of any record of this. The measurements are 49.0×40.5 mm.

68. *Otus bakkamœna lettia*.

THE COLLARED SCOPS OWL.

This Scops Owl is very plentiful both in Bangkok and in the district, but the short call note "toop", uttered at intervals as it sits on its perch, passes unnoticed by many people.

The majority of the eggs in my collection were taken in the Samkok district, from branch-holes in the "Ton Thong Lang" trees at Koh Yai and Poh Teng, but I have also had eggs from the Bangkok fruit gardens. The "Ton Thong Lang" trees, growing on the riverside at these places, are very favourite resorts of the small Owls and Owlets, for they are nearly all hollow and have numerous branch-holes which provide a veritable rabbit warren for these birds. It is very necessary to catch the bird on the nest whenever possible, so as to have authentic clutches, for although there is a difference in the average sizes of the eggs for this and the two following birds, there is still a certain amount of overlapping between them. I have had many birds taken on the nest and brought down to me in a cage, for examination and wing-measurement, and then they were released. It is not altogether an easy matter to catch these birds, as the tree is thorny, and stripping off the thorns will often flush the bird from the nest, but in that case all can be made easy for a silent visit on the following day. Then again, the birds are very fierce

and their claws are almost as formidable as their beak, so it is necessary to use a large piece of cloth when handling them. A careful study of the claws will reveal the fact that not only are they very sharp and long, but the peculiar angle at which they are set gives the bird an enormous power of grip. The bird can easily make them meet through the flesh of one's fingers, and once it has taken hold, it will not release its grip. However, a good collector soon becomes skilled in handling the birds. The nesting hole is generally about 15 feet from the ground. February is the best month for eggs, and a few may be found late in January or early in March.

The eggs show considerable variation both in shape and size, as well as in the extent of the gloss, but they have the usual little pimples on the shell, and they are typically Owl's eggs. In shape they are mostly spherical ovals, with a few slightly pointed towards one end. They are pure white in colour, with a moderately glossy surface, but the latter often shows considerable variation in the same clutch. The average size for four clutches is 33.3×28.7 mm., with extremes of 35.0×29.0 mm., and 31.6×28.6 or 31.7×28.1 mm. This average is larger than the average for 48 Indian eggs by 1.3 mm. in length and 2.0 mm. in breadth. The wing-measurement (7 inches) for the birds taken on these eggs is also larger than that of the Indian birds. Three eggs is the normal clutch, although I had one clutch of four fully incubated eggs.

69. *Carine noctua pulchra*.

THE BURMESE SPOTTED OWLET.

This little Owlet does not occur in Bangkok, but it is found in considerable numbers at Samkok, which seems to be not only the southern limit for it in this part of the country, but the furthest south that it has been recorded (*vide* Vol. I, p. 56).*

It may be found nesting in the same groups of trees as the previous Owl, at both Koh Yai and Poh Teng, but it appears to start laying a week or two earlier, and eggs may be found the third week in January, and onwards through February. The nesting conditions

*As in the case of the Common Myna (*antea*, p. 111), this bird has established itself in Bangkok during the last few years and is now quite common—at all events in the Sathorn, Klong Toi and Wireless Road districts. [Ed.]

are also similar, but the bird is very much easier to handle than the Scops Owl, and generally gives no trouble whatever. I have had several taken on the nest, and found them very quiet.

• The eggs are somewhat irregular in shape, varying from spherical ovals to elongated ovals; some are slightly pointed towards one end and others towards both ends. They are pure white in colour, with the usual accompaniment of a few pimples on the shell, and the surface may vary from fairly glossy to no gloss in the same clutch. Three eggs are usually laid, and sometimes four. The average size of the eggs for six clutches is 31.7×26.5 mm., which is the same as for Indian eggs.

70. *Glaucidium cuculoides cuculoides*.

THE LARGE BARRED OWLET.

This Owlet may be found in several places outside Bangkok, but it was only in the last year, when I made a special effort to obtain their eggs, that I was successful in doing so.

Two clutches of three eggs each, together with the sitting birds, were brought in by my collector, the first being from Ban Laing (17.1.20), and the other from Poh Teng (3.2.20). Both clutches were about a quarter incubated, and were taken from branch holes of "Ton Thong Lang" trees on the river side. I also had one fresh egg brought in from Koh Yai (7.2.20).

The eggs are spherical ovals in shape, though this is more pronounced in one clutch than in the other. They are pure white in colour, with a few pimples on the surface as usual, and a slight gloss. The average size of the first clutch is 26.1×30.5 mm., and of the second 34.2×30.2 mm. The average for the 7 eggs is 35.4×30.4 , which agrees with the size for Indian eggs.

71. *Torgos calvus*.

THE BLACK VULTURE, OR KING VULTURE.

Vernacular, "Ee rang."

This is the larger of the two Vultures which occur in Bangkok,* and at close quarters it can be distinguished by the red and yellow wattles on the bare skin of the neck.

*Williamson has recorded two other vultures from Bangkok, *vide* Journ. Nat. Hist. Soc. Siam, Vol. III, pp. 26, 27. [Ed.]

I have known it to build in Bangkok on two occasions, and twice in the Samkok district. In 1913 there was a nest on the tree overhanging the Court House in H. B. M. Legation Grounds. The following year a pair built on a comparatively small tree by the paddy-boat slipway at Banlampoo. In 1915, and also in 1920, I knew of a nest at Chienrak Noi. In all these cases the nest was situated on the top of a tree, at a height of 20 to 30 feet from the ground.

The nest is a huge platform of sticks, measuring about four feet by three and about a foot thick. The extra length in one direction provides a convenient perching ground for the male when visiting the sitting bird, and later on it serves as a feeding ground for the young. I have noticed that the parent bird usually approaches the nest in the same direction, landing on the top of the tree and walking on to the nest. The building is a very slow process, and in two instances where I have notes of the work, it took over two months. Numerous flights are made by the birds without any endeavour to bring material for the nest, and even when the nest appears to be finished, two weeks or more may elapse before the egg is laid. The lining of the nest consists of twigs, some of which have the green leaves on them, also thin strips of the sheath leaf of the betel palm, and in the paddy field district straw is sometimes used. Nesting commences in the latter part of November and the egg is laid at the end of January or early in February.

The egg is a very perfect oval in shape, dead white in colour, with the faintest suspicion of green in it. The membrane inside the egg appears to be white where it is visible, but when the shell is viewed through the blow-hole against the light, it is deep green in colour. The shell has a slightly rough surface, and is distinctly granular in appearance, with numerous crease-like grooves forming up towards one end. Only one egg is laid, and the measurements are 89.0×65 mm. The weight of an egg before it was blown was 8 oz., exactly.

72. *Haliastur indus indus*.

THE BRAHMINY KITE.

Vernacular, "Nok heo deng."

The Brahminy Kite is very conspicuous on the river during

the rains, as it swoops to the surface of the water to pick up floating garbage in its claws. During November most of them move up the river to suitable localities for nesting, and a considerable number may be found at Samkok, Ayuthia and other places further north.

The nest is built near the top of a moderately high tree, either in a village or on the outskirts of one, and not infrequently a palmyra palm is used for the purpose. The nest is a large loose structure of sticks, with a deep depression, and it is lined with fibre, roots and grasses. The eggs are laid during the latter half of January or in February, and occasionally they may be found in March.

The eggs on the whole show very little variation either in shape, size, or colouring. They are moderately broad ovals, very perfect in shape and with one end slightly smaller than the other. The ground colour is dirty white, and often has a greenish tinge. It is generally feebly speckled or spotted with brown or a rusty reddish brown, though sometimes it is without markings altogether. The shell is usually smooth and has little or no gloss, but occasionally the surface may be quite rough to the touch. Two eggs are laid and the average size for twenty is 51.6×41.0 mm.

73. *Milvus migrans govinda*.

THE COMMON PARIAH KITE.

Vernacular, "Nok heo dam."

The Pariah Kite frequents the river in company with the Brahminy Kite, only it is rather more numerous.

It nests during January and February in the same straggling colony as the previous bird, and I know of no difference in either the nesting or the general habits of the two birds.

There is not much variation in the shape or size of the eggs, but there is a very considerable range in the markings. In shape they are normally very perfect moderately broad ovals, with one end slightly smaller than the other, and broad ovals or elongated ovals are occasionally found. The ground colour is usually a creamy white, though it sometimes has a greenish tinge in it. The markings show very great variety, but the most general form is that of blotchy spots and specks in a deep reddish brown, often thickly splashed on the large end, but occasionally they are more prominent on the small end. Some

eggs have spots and specks in dark brown, sparingly distributed in an uneven manner over the whole surface, whilst others have fine speckly markings in a pale rusty brown, thickly clustered about the large end in the form of an irregular zone or cap. Then there is an uncommon type, with cloudy markings in reddish brown and pale purple, which have a very smudged appearance. There may be considerable variation in the markings of two eggs in the same clutch, and the most noticeable instance of this in my collection is a very large pair of eggs, with an unusually rough surface, and peculiar purple secondary markings; these points are common to both eggs, but one of them is also profusely spotted and speckled with reddish brown, whilst the other is almost without. The surface of the eggs is generally smooth, often with a waxy appearance that almost amounts to a gloss, but on the other hand there are a few instances of a mat surface which is quite rough to the touch. Two is the usual number laid, and very occasionally three. The average size for fifteen clutches is 52.8×42.1 mm.

74. *Elanus cæruleus cæruleus*.

THE BLACK-WINGED KITE.

Vernacular, "Nok heo khao."

The Black-winged Kite is a solitary bird, and though widely distributed it is by no means common.

The nest is usually situated near a village, and is built in a rather small tree at about twenty five feet from the ground. It is considerably smaller than that of the Common Kite and is built of sticks, loosely put together, with little or no lining. The six clutches in my collection were all obtained during the last year, five from Samkok and the other from Bang Bon on the Tachin side, but the range of time was extensive. Four clutches were taken in January and February, and two in the previous July and August. It is generally thought that this bird breeds twice in the year, and the above dates substantiate this. The eggs are moderately broad ovals, slightly pointed towards one end, and they remain very constant both in shape and size. The ground-colour is usually a yellowish white, though sometimes it is a dirty white. The pattern of the marking shows much variation, and even in a clutch there is a considerable

difference. Some eggs are handsomely marked with bright reddish brown clouded spots, heavily clustered about the large end and the middle, with a moderate amount on the small end. Others are smudged and smeared all over with a dull, though rather darker, shade of brown, and in general have the appearance of the colouring matter having been much diluted.

Two clutches in my collection each contain one egg with a pure white ground-colour, which has only a few small spots and specks on it. These markings are very dark brown in colour, almost black, and are situated on the large end. This is not without precedent, though it is uncommon, and the occurrence of a white egg is recorded on two occasions in Hume's "Nests and Eggs of Indian Birds". In the case of my two clutches, the nests were watched by the collector whilst being built, and the two white eggs were reported as the last to be laid. Had the white eggs been the first laid, the matter would have been more easily understood, for the pigment of the small spots appears to be so concentrated that one might assume that the gland had not commenced to function with the usual freedom, possibly a case of a young bird. The following incident regarding another clutch appears to lend weight to the above assumption. A former collector, who had become a soldier and was home on short leave, found a nest with two eggs in it, and brought them to me. They were quite fresh, and handsomely marked, but one showed more smearing than the other. Ten days later I received one egg from this man's father, who had noticed the birds still about by the nest and found that the female was sitting on one egg. This egg was considerably incubated, and there appears to be no doubt that it was laid after the other two had been taken. The markings of this egg were all smudged and smeared, which appears to show that the pigment secretion was working more freely than when the first two eggs were laid. This is a matter of considerable interest, and any reliable data that can be collected on other clutches will be of value to those investigating the subject another day.

The shell is smooth, and without gloss. I believe the usual clutch for this bird in Siam is four, but unfortunately I have only one clutch of four, and two clutches of three, although incubation

had commenced in all these. The average size for eighteen eggs is 40.0×31.3 mm.

75. *Streptopelia chinensis tigrina*.

THE BURMESE SPOTTED DOVE.

Vernacular, "Nok khao yai."

This was formerly known as *Turtur tigrinus*. It is the common Dove so generally seen in all parts outside Bangkok, and may be found nesting in the scrub jungle near to paddy fields.

The nest consists of the usual small platform of twigs, rather loosely put together, and situated in bamboo or in a bush, at quite a low level and often only about six feet from the ground. The bird is said to breed at all times of the year, and nests may certainly be found during the first nine months. The eggs are moderately long ovals, sometimes rather cylindrical, and at other times quite broad ovals. They are white in colour, with quite a fair amount of gloss. Two eggs are laid, and the average size for a normal pair is 28.1×21.2 mm.

76. *Oenopopelia tranquebarica humilis*.

THE BURMESE RED TURTLE-DOVE.

Vernacular, "Nok khao fai."

The Turtle-Dove is not nearly so common as the Spotted Dove, but is generally found in the same locality.

The nest is a very light platform composed of a few twigs loosely put together. It is placed in a small tree or some bamboo, at about ten feet from the ground. The nesting season is more restricted than that of the previous Dove, although nests may be found from March to August.

The eggs are elongated ovals, often equally pointed towards each end, and sometimes cylindrical. They are ivory white, and often so pale as to be only noticed when they are placed alongside china white eggs. They are not easily identified from those of the former Dove, although differences will be noticeable in a series. They have a fair amount of gloss, and the average size is 27.3×20.7 mm.

77. *Geopelia striata striata*.**THE BARRED GROUND-DOVE.**

Vernacular, "Nok khao cha wah."

• This little Dove may be found nesting in Bangkok or in the district, but they are imported birds that have been released.* I found a nest by the Sports Club in June 1914, and another was found in scrub jungle at Sapatoom. The eggs are very regular short ovals, white in colour, and measure 23.0×18.0 mm.

78. *Gallus gallus feruginus*.**THE BURMESE JUNGLE-FOWL.**

• The Jungle-Fowl is not found very near to Bangkok, but I have had eggs brought in from beyond Samkok, from the Ayuthia district, and also from Muak Lek on the Korat railway line.

I was doubtful about one clutch of five fresh eggs brought in from the Samkok district, so hatched them out under a hen. A remarkable feature about the young chicks is that they are able to run as fast as a mouse when they are only a few hours old, and these chicks displayed that feature very clearly. The hen would not tolerate them, and pecked them when she saw them run.

I have no notes of any value of the breeding of this bird, and the eggs vary considerably in both shape and size, so reference should be made to one of the standard works.

79. *Lophura diardi*.**THE SIAM FIRE-BACK PHEASANT.**

Vernacular, "Kai fah phyaw raw."

I was only successful in obtaining the eggs of this beautiful Fire-back Pheasant on two occasions and then they were brought from Muak Lek, in Eastern Siam. My collector returned from Muak Lek on 19.4.15 with one clutch of eight eggs, together with the male and female Pheasants. The nest was situated on the ground in a hollow tree, and the parent birds were caught on the nest after dark. I sent the collector up again the following week, and he returned (2.5.15) with two fresh eggs, which were exactly the same

* The status of this Dove as a Bangkok bird has been dealt with by Williamson, *vide* Journ. Nat. Hist. Soc. Siam, Vol. II, p. 72. It appears to be thoroughly established as a feral species. [Ed.]

as those of the previous clutch, but he was unfortunately suffering from a bad attack of fever, and was therefore unable to wait for the full clutch with the chance of trapping the birds.

The clutch of eight eggs was placed under a hen for incubation, but only two chicks were successfully reared. Two eggs, after they had been under the hen for a week, were found to be sterile, so were blown and placed in my collection. The parent birds were placed in the aviary, and notes on these and the rearing of the two chicks will be found in the Aviary Notes.

The eggs are broad ovals in shape, and slightly compressed towards the small end. In colour they are pale buff when freshly laid. The pitting of the pores on the shell is very noticeable, but otherwise the surface is smooth, and there is just a trace of gloss. The measurements are:—Two fresh eggs (2.5.15), 46.7×38.0 mm., 46.7×38.0 mm.; two sterile eggs (19.4.15), 47.5×37.1 mm., 47.5×36.6 mm.

80. *Gennæus lineatus sharpei*. •

GRANT'S SILVER PHEASANT.

Vernacular, "See-daw kai-fah".

I was not successful in obtaining the eggs of this Silver Pheasant from Muak Lek (E. Siam), though my collector caught a one year old male (2.5.15) which lived in the aviary for a year.

I am indebted to Mr. K. G. Gairdner for three eggs of a Silver Pheasant taken by him (3.4.13) in the Ratburi district, W. Siam. The birds on that side are darker in plumage than those on the eastern side, but whether it has been decided that they belong to this sub-species or to *G. l. lineatus* I do not know.

The eggs are moderately broad ovals in shape, and slightly compressed towards the small end. In colour they are reddish buff. The surface is smooth with a faint gloss, and the pores in the shell are scarcely noticeable. The measurements average 45.4×35.4 mm.

81. *Excalfactoria chinensis chinensis*.

THE BLUE-THROATED QUAIL.

Vernacular, "Nok khum kai-na".

This Quail appears to be very sparingly distributed in the district around Bangkok, and I only succeeded on one occasion in

obtaining the eggs. My collector at Samkok reported a nest on 17.7.14, so I sent him back with instructions to trap both the birds. I visited the place two days later and the collector met me with the male and female in a cage trap, and four eggs which were slightly incubated. The nest was a depression in the ground alongside the bank of a fallow field, situated about two miles west of the village of Ban Khang. The parent birds were placed in the aviary, and a further reference to them is made in the Aviary Notes.

The eggs of this Quail are entirely different from those of the other Quails, as they resemble those of a Partridge, to which Order the Blue-throated Quail belongs. They are moderately broad ovals, and decidedly pointed towards one end. In colour they are olive-brown, and a closer inspection will reveal minute specks and a few pale reddish spots indiscriminately distributed about the eggs, although at first sight these marks may not be noticed. The surface is moderately fine, and there is a fair amount of gloss. Incubation had commenced on this clutch of four, and no egg was laid in captivity, but five is said to be the full complement. The measurements average 25.9×19.4 mm.

82. *Turnix javanica plumbipes*.

THE BURMESE BUSTARD-QUAIL.

Vernacular, "Nok khum-maw".

This is the largest of the four Quails found near Bangkok, and although it can hardly be described as common, there is very little difficulty in obtaining the eggs.

The nest consists of a pad of dead grass alongside a tuft of growing grass, and is situated either in a fallow field or on land close to scrub jungle. June and July is the best time for eggs, and a few may be found in August.

The eggs are broad ovals in shape, and usually much pointed at one end, but the best description of them is one used by Oates, that they are three-quarter spherical and the other quarter is pressed into a point. The ground-colour is usually a greyish white, and sometimes a pale yellowish brown. The markings consist of very fine freckling in dark brown, yellowish brown and pale purple, distributed over the whole surface. In addition to this, many eggs

have numerous brown spots and occasional blotches about the large end, often forming a slight cap or zone. The gloss varies from very little to quite a considerable amount. Four is a full clutch, and I have never found more. The average size for a normal clutch is 23.5×20.0 mm.

A reference to this bird will be found in the Aviary Notes.

83. *Turnix dussumieri*.

THE LITTLE BUTTON-QUAIL.

Vernacular, "Nok khum-kerp."

This is the smallest of the Button-Quail, and the principal features by which it is distinguished from the following species are the wing measurement, of less than three inches, and the flesh-coloured legs and feet. On two occasions I have obtained eggs with both the birds from Ban Khang, and once I received eggs with a dead bird from Klong Ban Dok.

The nest bears considerable resemblance to that of the Bush-Lark (*Mirafra c. williamsoni*) as it is a neat little ball of dead grass, built in a slight cup-shaped hollow under cover of a tuft of grass, and with the entrance at the side. The nests that I have seen were at the back of Ban Khang, situated on ground that was slightly higher than the paddy fields surrounding it, and therefore left uncultivated. The dates of the three clutches referred to above were mid-July and mid-August.

The birds are very easy to catch with the ordinary cage trap, which has the split-bamboo frame with bars made from the centre stem of the cocoanut palm leaves, and a balanced door of the pigeon-wire type, which is always set for admission but not for exit. They are about the quietest and most confiding birds that I know and become tame at once, but further reference to this will be found in the Aviary Notes.

The eggs are similar in shape to those of the Bustard-Quail, broad ovals, with a round top and much pointed towards the small end, but they are much smaller. The markings are usually much darker and handsomer than those of the previous bird, although pale coloured eggs are occasionally found, and it will be best to describe the two separately. The darker eggs have a pale yellowish brown

ground-colour, marked with numerous freckles and blotchy or streaky spots of a rich deep brown or burnt umber, generally more dense towards the large end. The paler variety have a greyish white ground-colour, with smaller markings in the form of specks and spots of dark brown, with cloudy pale purple and yellowish brown specks. These eggs very similar in colouring to some of the more highly coloured eggs of the Bush-Lark, although quite different in shape. The shell is smooth with a moderate amount of gloss. Four is probably the full complement and the average size for ten authentic eggs is 21.0×17.1 mm.

84. *Turnix tanki blanfordi*.

THE BURMESE BUTTON-QUAIL.

Vernacular, "Nok khum-eurt."

This is very similar to the previous species, but larger, and it may be distinguished by its wing measurement of $3\frac{1}{2}$ inches, for males, and 4 inches for females, together with the deep yellow colour of its legs.

The nest is similar to that of the Little Button-Quail, and the birds are the same in all their habits. I had one clutch of four eggs with the parent birds, which were trapped by the nest at Ban Khang. I also found a single egg, when the bird rose from the nest and was caught in the scanty cover in which it took shelter. Other eggs were brought in by my collector from time to time. July and August is the nesting season.

The eggs are typical *Turnix* eggs in shape, and practically the same as *T. dussumieri* in colour and marking, in fact I see no difference except in size, so it is very necessary for the birds to be caught at the nest to give the eggs authentic value. The average size for seven eggs is 22.4×18.0 mm.

The average sizes for the eggs of the three last Quail are:—

Turnix j. plumbipes, 23.5×20.0 mm.

Turnix dussumieri, 22.4×18.0 mm.

Turnix t. blanfordi, 21.0×17.1 mm.

85. *Hypotænidia striata striata.*

THE BLUE-BREASTED BANDED RAIL.

Vernacular, "Nok hoo-deng."

This Rail is common in the district during the rains, and the eggs are often taken by boys whilst tending the buffaloes in the fields.

The nest is built in the fallow, or on uncultivated land alongside the paddy fields. It consists of a thick pad of grass placed in a clump of coarse grass, or sometimes on a heap of weed which has been cleared from the field. Eggs may be found early in June, and from then on to the end of August, and occasionally in September.

The eggs show considerable variation in almost all respects, and although I have many incomplete clutches showing this, I delayed collecting representative clutches until too late. In shape the eggs are generally regular ovals, sometimes elongated ovals, and occasionally slightly pyriform eggs are found. The ground-colour varies from a brownish cream to a milky white, with a pinkish stone colour for the majority of cases. The markings are in the form of splashes streaky spots and specks, of bright reddish brown, dull brown and pale purple. Some clutches are heavily splashed on the large end with a bright reddish brown, and have spots of the same colour sparingly distributed about the rest of the surface. Others have streaky spots of pale purple most numerous, with a few bright red specks amongst them. Then between these there are innumerable varieties, but as a rule the markings are in two colours, and are more heavily distributed about the large end. Although the colour-pattern varies considerably between the various clutches, there is a strong resemblance running through the eggs of each clutch. The shell is smooth, but it has very little gloss. Six or seven eggs are usually laid, and I have seen one clutch of eight. A clutch of large eggs averages 35.3×26.7 mm., and the average for thirty eggs is 33.1×25.7 mm.

86. *Amaurornis fuscus erythrothorax.*

THE EASTERN RUDDY CRAKE.

Vernacular, "Nok noo-deng lek."

My experience of this little Crake is very limited, and I look upon it as quite a rare bird in the district. A male which was shot

at Daokanong (Bangkok) in October 1913 was sent to me, and I have seen the bird occasionally when I have been out in the paddy fields, but I have only obtained the eggs once.

• The nest was found at Ban Khang on 6.7.13 and was situated in a fallow field. It consisted of a thin pad of dead grass, well protected by growing grass, and contained six eggs varying in the state of incubation from about one-third to very little.

The eggs are mostly broad ovals, with the two ends almost the same. One egg, however, is an elongated oval, but the mean length of this and the shortest egg is the same as the average for the whole clutch. The ground-colour is pinkish cream, with markings of specks and spots in reddish brown and pale inky purple. The spots have a streaky appearance, and are more numerous at one end than at the other, but they are nowhere very dense. The shell is smooth and without gloss. The average measurements are 27.3×23.4 mm.

87. *Amaurornis phœnicura chinensis*.

THE CHINESE WHITE-BREASTED WATER-HEN.

Vernacular, "Nok kwark."

The Water-Hen is very common around Bangkok during the dry season, and the croaking call, from which it derives its local name, is known to most people.

It usually frequents those parts bordering on the paddy fields where there are both cover and water, but it leaves for breeding before the rains commence. I did not discover where it went until 1919, when I obtained several clutches of eggs from Mahachai and Ban Yang, for with the exception of a solitary nest at Chiengrak Noi in 1914, I had been unable to procure any eggs until that year. This seems the more extraordinary when one considers that the bird is a noisy one in the dry weather, and the more so whilst nesting, so its presence should not go unnoticed.

The nest at Chiengrak Noi was taken by me on 19.7.14, but those on the Tachin side were all found in the month of August. The former was built amongst the stems of sugar cane, from leaves of the same plant, and at a height of four feet from the ground. There is no doubt about it being the nest of a solitary pair,

as I had collectors searching this district in the following years, but they could hear no news of any of these birds. The nests on the Tachin side were built in either a bamboo clump, or a bush on more or less swampy ground, at a height of five to six feet. They were composed of twigs and coarse grass, loosely put together, and were lined with dry leaves. The entrance was at the side.

There seems to be considerable variation in the shape of the eggs, as each clutch differs from the others. They vary from elongated ovals to very broad ovals, and one or two eggs are quite of a globular type, but I believe this is unusual, and that moderately elongated ovals are generally found. The ground is a creamy stone-colour, and one clutch has a reddish tinge about it. The markings are mostly specks and spots of a streaky nature, often forming an irregular cap on the large end, and sparingly distributed on the rest of the egg. They are reddish brown in colour with pale purple secondary markings. I have had clutches of four and five eggs, and one of three which was partly incubated, but the former probably represent normal clutches. In measurement the average for sixteen eggs is 38.2×29.2 mm.

88. *Gallicrex cinerea*.

THE KORA, OR WATER-CKOCK.

Vernacular, "Nok ee-loom."

The Water-Cock is met with when snipe shooting in the paddy fields, but otherwise it is not often seen, and the eggs are rather difficult to obtain.

The nest is usually built on the top of a clump of coarse grass, the seed heads being turned down to start a platform, and then more grasses added for the construction of the nest. Occasionally it is built in a similar way on growing paddy, and one nest was situated on a heap of vegetable rubbish at the side of a paddy field. The nesting season is from mid-July to mid-September, but I have one clutch taken in the middle of June, which was possibly due to early rains.

The eggs are moderately broad ovals, slightly compressed towards one end, and the small end often presents a rather blunt appearance. They are very beautiful eggs, and although the style

of marking varies between different clutches, it is very constant on the eggs of each clutch. The ground-colour is a rich yellowish stone-colour, with markings in bright brownish red, golden brown, and a pale purple, sometimes in the former colour only, but most eggs carry all three colours. The markings are most numerous on the large end, where they often form a mottled cap, with blotchy spots running into irregular streaky lines on the remainder of the egg. This is the most general type, but for the other extreme we find eggs which are closely freckled, and are without any large or heavily grouped markings, although there are of course many intermediate forms. The texture is fine, and usually there is a little gloss, but this is not always the case. Four eggs are laid, and the size does not show much variation. The average for twenty eggs is 41.4×31.5 mm.

89. *Porphyrio policephalus policephalus*.

THE INDIAN PURPLE COOT.

Vernacular, "Nok ee-kong."

This seems to be a very elusive bird, and although I sent out my collector on many expeditions, I only once succeeded in obtaining any eggs.

Two fresh eggs were brought from Hua Takhae on 15.7.15. The nest was on the top of a clump of "Ya Kok" (Sedge), and built in a similar way to that of the Water-Cock, the seed heads having been bent over to make a platform, with additional grasses heaped up to form the nest. Hua Takhae is said to be a regular nesting place for these birds, and the district around Paknam is reported to be another of their resorts, but the swampy nature of the country in July makes the task of finding the nests a very difficult one. A few notes concerning the habits of this bird will be found in the Aviary Notes.

The eggs are elongated ovals with one end slightly smaller than the other. The ground is stone-colour, in one case rather of a yellowish tone, and in the other more drab. The markings are blotchy spots of a very dark red, mostly distributed about the larger end, with a few pale purple secondary markings. The eggs are

without gloss, and their measurements are 48.0×34.5 mm., and 48.5×33.0 mm.

90. *Glareola maldivarum*.

THE LARGE INDIAN SWALLOW-PLOVER.

Vernacular, "Nok ee-reit."

This is a migrant which comes to Siam in large flocks for the breeding season, but where it comes from I cannot say. It has been found breeding in Sind, presumably in small numbers as this is not recorded in Hume's "Nests and Eggs of Indian Birds," and Oates reports it from Pegu, but says that "no great number of birds breed together," whereas in Siam they breed in colonies of many hundreds of pairs. The distribution of the bird also extends to China, the Malay Archipelago and Northern Australia.

I have no record of their arrival, but it must be during the latter part of February, or very early March, for I have a note dated 16th. March 1914 that the eggs were then very plentiful at Sapatoom, and the cultivators were collecting them for food as well as snaring the birds. This colony appears to be fully a month earlier than the one at Samkok, as the latter part of April and early May is the time when eggs are most plentiful there. I knew of another colony at Ayuthia, which breeds about the same time as the one at Samkok, and possibly there may be many more about, but I did not follow this matter up.

The Sapatoom birds leave earlier than the Samkok colony, as their numbers are gradually reduced during May and June, but this is only reasonable seeing that the nesting commences so much earlier. Yet on the other hand I have seen some dozens of birds, old and young, at the "Ditches" (Sapatoom) on the 8th August, 1913, and some hundreds on 2nd August 1914. I feel certain that these were birds from other colonies, which were resting on their journey, for during 1919 I visited the Sapatoom paddy fields every week during June and the first half of July, and during the last month of that time I only saw occasional birds.

I have a note dated 15th June 1913, that the Swallow-Plover were very thick at Samkok, the fields simply swarming with old and young. I also obtained three fresh eggs on that day.

Another note exactly a month later records them as being very thick on the river and on either side as far as I could see. I was travelling up the river on a launch at eight o'clock in the morning, and the sun had just come out after a very heavy rain storm. The air was thick with flying ants, and the birds were feeding on them whilst darting about in their swallow-like flight. This was happening along a stretch of fully six miles. I think it is highly probable that in both these cases the birds of the local colony were augmented by those from other colonies which were on their return migration.

The eggs are laid on the bare ground, in a slight "scratch" made by the bird, and without any nesting material. The protective colouring is very effective, and unless one is accustomed to finding these eggs they are very difficult to see. The chicks are equally difficult to detect unless they happen to be moving, as they are speckled and barred in black and drab and harmonize very well with the dried up paddy fields. They can run as soon as they are hatched, and are very quick in taking cover. The parent birds go through many of the Plover antics in feigning injury, and they have quite a Plover call, from which they derive their local name. In shape the eggs are typically broad ovals, with one end considerably pointed, but elongated ovals as well as very short ovals are sometimes found. The ground-colour varies from yellowish stone-colour to a greyish or greenish drab. The markings consist of small blotchy spots and streaks, with many specks and spots, fairly closely distributed over the whole egg, but occasionally more dense towards the large end. In colour they are a very dark brown or dull black, with secondary markings of a cloudy nature in a very pale shade of the same colour. In texture the shell is rather chalky, and is without gloss. Two eggs are generally laid, and sometimes three. The measurements for a normal clutch are 30.0×23.5 mm.

91. *Metopidius indicus*.

THE BRONZE-WINGED JACANA.

Vernacular, "Nok prik".

The bird is only found in swampy places, and there it is

sparingly distributed, so the eggs are difficult to obtain. I only procured three clutches, two from Hua Takhae, and one from a "nong" (swamp) far back behind Ban Laing.

The nest is a very small collection of weeds, which are laid on the growing surface-weeds, far out in the swamp and away from all tall rushes. The first clutch was taken behind Ban Laing on 28.7.13, and the four eggs were found to be slightly incubated. The second came from Hua Takhae (1.7.15), where I had sent my Dyak collector to hunt for this and other swamp-frequenting birds. He procured both the parent birds as well as the eggs, but the latter proved to be fully incubated. These dates indicate June and July as the nesting time, and that is locally reported to be the case, so the third clutch appears to have been a very late one, as it was taken on 11.9.19. There were four slightly incubated eggs, but unfortunately two were crushed when the boy was swimming to land with them.

The eggs of two clutches are moderately broad ovals, but those of the third are a very elongated type and a good deal pointed towards one end. The ground-colour of different clutches varies from *café-au-lait* to stone-colour. The markings consist almost entirely of coarse and fine lines entangled in the utmost confusion, and in colour they are mostly black with a few in reddish brown. The eggs have an extraordinarily high gloss which completes a very remarkable appearance, and makes them stand out as some of the handsomest eggs in a collection. Four appears to be the usual complement for Siam, although many more are reported from some parts of India. One clutch averages 35.2×25.5 mm, and the two remaining eggs of the other clutch average 39.3×25.3 mm.

92. *Hydrophasianus chirurgus*.

THE PHEASANT-TAILED JACANA.

This Jacana also inhabits the same swamps but I was not successful in obtaining the eggs.

93. *Lobivanellus indicus atronuchalis*.

THE BURMESE RED-WATTLED LAPWING.

Vernacular, "Nok too-wit."

I have not found this bird plentiful anywhere, although I have come across a few pairs of them in many places.

The nest consists of a shallow depression scratched in the ground, and usually surrounded with bits of debris which harmonize with the self-protective colouring of the eggs. It is situated in an open space, and at Samkok I have seen the nests on pieces of ground which were slightly higher than the paddy fields, and therefore not flooded in the early part of the rains. I know very little about the nesting time, but I considered it to be April and May, for I have seen young early in May, and I had a clutch of fully incubated eggs on the 13th May. On the other hand I had three fresh eggs on the 20th June, but I look upon this as an exceptionally late clutch.

The eggs are of the usual Plover type, pyriform in shape, with the small end moderately pointed. The ground-colour varies in shades of stone-colour, and is thickly blotched, streaked and spotted in a very dark brown, with a few smudges of reddish brown. The markings are generally larger and more closely set on the large end. The eggs are without gloss, and four are always laid. The average measurements are 41.7×29.0 mm., which agree with those for Burmese eggs.

94. *Hoplopterus ventralis*.

THE SPUR-WINGED PLOVER.

I have only one clutch of the Spur-winged Plover's eggs, which were taken by a collector at Paknampho on the 15th March.

The nest was on a sandbank of the Me Ping river, and as it was placed amongst driftwood and rubbish, it was very difficult to find. He reported the birds to be plentiful higher up the river.

The eggs are typically Plover's in shape, with yellowish stone for the ground-colour. The markings consist of spots and occasional blotches of blackish brown, more closely distributed on the large end. There is no gloss. Four eggs are laid, and the average size for this clutch is 41.2×30.4 mm.

95. *Rostratula benghalensis benghalensis*.

THE PAINTED SNIPE.

Vernacular, "Pong-wit."

A note by me on the breeding of the Painted Snipe appeared in the first number of the Journal (Vol. I, p. 54), and since that I have procured eggs in the months of both May and June, as well as later.

The nests obtained by me all came from the Samkok district, but others may be found elsewhere, as is shown by the young that have been seen, and probably the birds breed in all the places in which they are found during the rains. The two nests seen by me were slight depressions in the ground with only a few pieces of grass or straw to line them and were situated in fallow fields, but I believe the more general practice is for the nest to be made of a thick pad of grass. I have had clutches of eggs in the months of May, June, July and August, and young birds in September and early October.

The eggs are slightly elongated ovals, and considerably pointed towards one end. The ground-colour is a yellowish stone-colour, and is thickly blotched and streaked with a very dark brown, which is almost black in places. On one clutch the markings cover more than half the surface of the egg. They have a moderate amount of gloss. Four eggs are laid, and the average measurements are 35.7×25.3 mm.

96. *Sterna bergii cristata*.

THE AUSTRALIAN LARGE CRESTED TERN.

Two fresh eggs of this Tern were given to me on the 14th of May 1913 by an old collector. He brought them up from the island of Koh Samui, off the coast of Bandon, Peninsular Siam.

There was a colony of these birds breeding on the island, and the single egg, as only one is laid,* was in most cases on the bare rock without any debris or other material near it.

The eggs are elongated ovals, considerably pointed towards one end. The ground-colour is dead white, moderately marked with large and small spots in black and deep burnt-sienna, the latter

*Williamson records (Journ. Nat. Hist. Soc. Siam, Vol. III, p. 83) that on one occasion he obtained two pairs of eggs and 23 singles. [Ed.]

showing smudgy edges with a tinge of yellow or pink. There are also a few pale inky purple markings. The spots are more numerous on the large end, but in a series of eggs there is very great variety in the marking. The shell is hard, with rather a chalky appearance, and is entirely without gloss. The measurements of the eggs are 59.0×42.5 mm. and 59.0×40.0 mm.

97. *Threskiornis melanocephalus melanocephalus*.

THE WHITE IBIS.

Vernacular, "Nok chon."

I have not seen these birds nesting, but my collector brought me two fresh eggs from Ban Yang (Tachin) on 4.7.19. He reported that there were several nests on the top of the same tree at seven "wah" (45 feet) from the ground, but only one nest had eggs in it. He said the nest was built of sticks, and similar to that of the Open-bill (No. 99). I have seen this Ibis at Bang-pa-in during the rains, and I believe it was breeding there.

These two eggs are rather long ovals, with both ends alike and rather pointed, but a series is said to show considerable variation in shape. The colour is a deep bluish green, deeper and more blue than that of the eggs of *Egretta garzetta*, and without any spots. The texture is of rather a coarse chalky nature, but it has a smooth surface, and is without gloss. The measurements are 55.5×40.0 mm. and 51.0×39.2 mm., which come below the average for Indian eggs, and not much above the minima.

Note. The Black Ibis, *Inocotis papillosus*, was also reported to be breeding at Ban Yang, but so far as I know this bird has not been recorded from Siam.*

98. *Pseudotantalus leucocephalus leucocephalus*.

THE PAINTED STORK.

Vernacular, "Nok phak bua".

These Storks may be seen at Samkok during the cold weather, congregated in a flock and feeding in the paddy fields, but during the first half of the rains only single birds, or

* Robinson and Kloss have recorded it from various places in Peninsular Siam (*vide* Journ. Nat. Hist. Soc. Siam, Vol. V. p. 73) under *Inocotis davisoni*. [Ed.]

a pair, will be seen, as it is the breeding season.

My collector reported them to be nesting at Ban Yang in July, but he was not successful in obtaining any of their eggs.

The portion "bua" (lotus) of the local name is a very appropriate one, as the tertiary feathers on the wings are pink, faced with a very bright shade of pink and bordered with white, and this closely resembles the colour of the Lotus lily when it first comes out in the early morning.

99. *Anastomus oscitans*.

THE OPEN-BILL.

Vernacular, "Nok pak-hang."

These birds may be seen in a flock at Samkok during the early part of the rains and from then onwards to the cold weather.

My collector brought in one fresh egg from a temple on Klong San Sep on 22.2.16, and reported plenty of nests on the tops of the Pepul (Siamese, *Ton pho*) trees, situated in a close colony like that of the Paddy Birds. I sent him out there at the same time in 1920, but he did not obtain any eggs, and said the cultivators were shooting the birds for food, whereas in former years they only took the eggs.

The one egg is an elongated oval. It is white in colour, close in texture, with a smooth satiny surface, but without gloss. The measurements are 59.0×41.0 mm.

The following note concerning two birds which were shot at Samkok on 31.8.19 will be of interest as showing the change that takes place between young and adults in the peculiar form of the bill of this genus. In the "Fauna of British India," Blanford observes:—"The open space between the mandibles is said to be the result of wear, caused by the shells of the mollusca, on which the bird feeds." The word "wear" does not seem to me to be well chosen, as careful examination does not disclose any actual sign of wear, but rather a development of the open space, for the bill is not smooth at this part. The measurements of the two birds are as follows:—

		<i>Adult</i>	<i>Juvenile</i>
Total length	...	32"	30"
Tail	...	7"	6 $\frac{3}{4}$ "
Wing	...	16 $\frac{1}{4}$ "	15 $\frac{3}{4}$ "
Tarsus	...	5 $\frac{3}{4}$ "	5 $\frac{1}{2}$ "
Bill from gape	...	6"	5 $\frac{1}{2}$ "
Do., length of open space		2 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "
Do., depth	" "	$\frac{1}{4}$ "	$\frac{1}{8}$ "
Do., from open space to tip of bill		1"	1 $\frac{1}{4}$ "

The facial skin was blackish, but the gular skin was deep blue (Reckitt's blue), and not blackish as given in the "Fauna." The legs (adult) flesh colour, (juv.) pale flesh; bill dull greenish, tinged with reddish beneath; irides dark brown.

This bird was called the "Shell-Ibis" by Jerdon, and in Burma it is often referred to as the "Beef-steak" bird, but no one would wish to substitute the flesh for a genuine beef-steak, if the latter was available.

100. *Egretta garzetta garzetta*.

THE LITTLE EGRET.

Vernacular, "Nok yang-ton."

The Little Egret is not so common as the other small Herons, but still there is no difficulty in getting the eggs. It may be found breeding at Ban Yang, and at Ayuthia, as well as at numerous other places. June and July is the nesting season.

The eggs vary considerably in size, and likewise to a certain extent in shape, but typically they are very perfect ovals. In shape and average size they are practically the same as those of the Cattle Egret (*Bubulcus i. coromandus*), but in colour they are much darker being quite a deep bluish green, and I have not found much variation in that respect. This of course refers to fresh eggs. They are fine in texture and smooth, but without gloss. Four eggs are usually laid. In measurement the length varies from 48.0 to 42.2 mm. and the breadth from 34.5 to 31.2 mm., with an average for eighteen eggs of 44.2 \times 33.6 mm.

101. *Bubulcus ibis coromandus*.

THE CATTLE EGRET.

Vernacular, "Nok kin-pling."

Most people will be familiar with the sight of one of these birds walking on either side of a buffalo whilst it is feeding, to catch the insects as they are disturbed. They are a common breeding bird in the district, and may be found nesting in the same colony as the Pond Heron (*Ardeola grayii*), and possibly some of the other small Herons as well. Many nests are often built in the same tree, and colonies will be found at Ban Yang, Samkok, Ayuthia and many other places. June and July is the nesting season.

The eggs are generally moderate ovals, and very similar in shape and size to those of the previous Egret, but they are easily distinguishable by their colour which is the palest of all the small Herons' eggs, and is almost white with a faint tinge of blue. The texture is fine and smooth, but the shell is not very hard, and the surface is without gloss. Either three or four eggs are laid, and either number may be found as often as the other. In measurement they vary to the same extent as the previous bird, and the average for twenty five eggs is 44.4×34.0 mm.

102. *Ardeola grayii*.

THE INDIAN POND HERON.

Vernacular, "Nok yang-krok."

The common Paddy-bird may be found breeding in many places around Bangkok, sometimes nesting on trees and at others on bamboos, but always in a colony. Colonies may be seen at Paknam, Ban Yang, Samkok, Ayuthia, and many other places. May, June and July is the breeding season.

The eggs are moderate ovals as a rule, but elongated ovals with both ends pointed, or broad ovals, may frequently be found. In colour they vary from a deep sea-green to a whitish blue. The texture is moderately fine and smooth, but the shell is not very hard, and sometimes it is very frail for the size of the egg. A clutch is generally composed of three eggs, although four is not uncommon. The measurements vary from 43.0 to 36.0 mm. in length,

and from 32.0 to 29.0 mm. in breadth, with 38.0×30.0 mm. as an average for a normal clutch.

Note. *Ardeola baccha*, the Chinese Pond Heron, may be found breeding in the same colony as *A. grayii*, but the bird can only be distinguished in breeding plumage, and the eggs of the two are inseparable.

103. *Nycticorax nycticorax nycticorax*.

THE NIGHT-HERON.

Vernacular, "Nok querk."

The Night-Heron may be seen roosting on the trees and bamboos at Wat Koh Yai, Samkok, during the cold weather. They are there in large numbers and sometimes a crow may be seen amusing himself by diving at them, and disturbing them during their day sleep.

They are said to breed at Bang-pa-in and Ayuthia, but I was not able to verify this, and I was not successful in obtaining any of their eggs.

104. *Ixobrychus cinnamomeus*.

THE CHESTNUT BITTERN.

Vernacular, "Nok yang sawoy."

This Bittern may be seen in the paddy fields during the rains, but it is not common, and the eggs are very difficult to obtain. I have watched various "pairs" on the rough ground at the Sports Club, at the "Ditches" and at Paklat, and I have had men searching for the nests, but on those occasions without success. Eggs have been found twice, but in both cases the bird was flushed from the nest when in pursuit of something else.

The first nest was found by me at the "Ditches" (25.6.13) when I was looking for the nest of a Francolin which I had seen about there. I saw the head of a bird appear some forty yards ahead and, although I marked the spot, I had the greatest difficulty in finding the bird, but eventually flushed a Chestnut Bittern from its nest. The nest was on the top of a clump of the small round bulrushes, the heads having been bent over and more rushes added to complete the structure. It was entirely built of fresh green bulrushes, very neat and clean, and situated about a foot

above the water of one of the ditches. There were three eggs, which were slightly incubated. A fortnight later I searched the bulrushes at that place, and found two new nests close together, but no eggs were ever laid in them. The following year I visited the same spot at a later date, but it was a dry season and there was little or no cover, so it was not surprising that I found no Bitterns there. The second clutch was found by my collector at Tachin on 15.8.19, and the eggs were slightly incubated. The nest was brought in with the eggs and was exactly the same as the others which I had seen. The nesting season is apparently June to August.

The eggs are broad regular ovals, with no appreciable difference between the two ends. In colour they are white with a very faint greenish tinge, but this may only be perceptible when the eggs are placed alongside pure white ones. The shell is fine and compact in texture, but it is without gloss. Three is locally said to be the full complement, but this may not be correct as four to five is reported to be the general number in Burma. The average size for six eggs is 31.9×26.7 mm.

105. *Ixobrychus sinensis*.

THE YELLOW BITTERN.

The Yellow Bittern is also found in the paddy fields during the rains, but I have not seen it as often as the Chestnut Bittern, and I was not successful in obtaining any of their eggs.

106. *Dupetor flavicollis flavicollis*.

THE BLACK BITTERN.

Vernacular, "Nok yang kark"

This Bittern should be found nesting close to Bangkok, and it is said to breed in the fields at Paklat, but I was not able to procure any eggs. During June to August, I have often seen a pair or a single bird at the "Ditches", or on the wing in a southerly direction.

107. *Dendrocygna javanica*.

THE LESSER WHISTLING TEAL.

Vernacular, "Pet nam."

The Lesser Whistling Teal is said to breed in considerable numbers at various places within easy range of Bangkok, and the

country people collect the eggs for food. It certainly breeds at Klong Rangsit, on the Petriu side, and also on the Tachin side. Eggs have occasionally been brought to me from Samkok, and I once found a nest at Pakret.

The nests are built on tufts of rushes or coarse grass, or on low scrub bushes, but as far as I know the Whistling Teal around Bangkok never build their nests on trees as they do in many parts of India. The practice of nesting on the ground by this Teal is, however, not uncommon in Burma and is fully dealt with by Mr. Stuart Baker in his book on "Indian Ducks and their Allies".

The eggs are very spherical ovals, and but little compressed at the small end. The colour is creamy white when first laid, but very soon becomes stained. The surface is very smooth, and often there is a fair amount of gloss which is due to a chalky deposit on the shell. This chalky surface becomes much scratched by the bird when turning the eggs during incubation. Eight is a very general number of eggs for a clutch, and I have had as many as ten. One clutch averages 44.0×36.1 mm., and another 47.3×36.7 mm., but I have not sufficient measurements to give a general average, which would, I feel sure, be rather smaller than that for Indian eggs.

Note. I have had eggs brought to me as those of *Querquedula querquedula*, the Gargany Teal (vernacular, "*Pet nam khao*"), but they were really the eggs of the Whistling Teal, as the Gargany breeds in the north temperate zone, and only winters in India, China, etc.

108. *Podiceps ruficollis albipennis*.

THE INDIAN LITTLE GREBE.

Vernacular, "Nok koo-at" or "Nok pet-pi" (Ghost-duck).

This is not a common bird, and as its haunts are confined to swamps and still water in secluded parts, it is not very generally known. It is found on the Petriu side, at Ayuthia, on the Tachin side, and probably in many other places.

I have only two clutches, both of which contained five eggs; the first was brought down from Ayuthia, on 25.6.13, and the second from Tachin on 22.10.19. One egg was damaged in the first clutch,

and two were broken in the second, when the man was swimming to land with them. This happens only too often, and collectors should be warned against it. I visited the second nest when it was reported to me, and it consisted of a moderately small quantity of weeds, piled on to the growing surface-weeds, with a depression in the centre for the eggs.

The eggs are moderately elongated ovals, much pointed at both ends, although some are more regular ovals and have only one end pointed. In colour they are white when laid, but are seldom seen in this condition, owing to the bird's habit of covering the eggs with decaying weed when she leaves the nest, so they rapidly become discoloured and are usually a deep *café-au-lait* when found. The texture is fairly close, but of a chalky nature, and blemishes in the formation of the shell are frequently noticeable. They have a small amount of gloss. The eggs are unmistakable for, apart from the general external appearance which is very characteristic, the shell has a deep green appearance when viewed through the blow-hole against the light. The yolk also is a deep reddish orange. Both clutches were slightly incubated, and I believe five is the usual number of eggs laid. The average size of seven eggs is 33.5×25.2 mm.