

XX.—*The Birds of Hong Kong, Macao, and the West River or Si Kiang in South-eastern China, with special reference to their Nidification and Seasonal Movements.*—Part III.* (Conclusion and Appendix.) By Lieutenant R. E. VAUGHAN, R.N., M.B.O.U., and Staff-Surgeon K. H. JONES, M.B., R.N., F.Z.S., M.B.O.U.

[Continued from p. 201.]

TURTUR ORIENTALIS.

The Eastern Turtle Dove is a fairly common winter visitor to the coast of Kwang Tung and is not found further inland than the Shiu Hing gorge, about one hundred and ten miles from the sea. The time of arrival of these Doves appears to vary considerably in different years, for they have been known to occur as early as October 14, and as late as December 6; whilst in the spring, although the majority leave in March, they have been obtained on April 14.

TURTUR HUMILIS.

The Red Dove is a common resident species on the West River, but is only found on the coast and in the Delta country in winter, probably in the last named cases it is as a bird of passage from further north. On September 1 large flocks of these birds were found feeding in wet paddy with the Snipe, so probably they had migrated with the latter from the north. Further west, this species grows commoner than *Turtur chinensis*, and at Kwei Hsien it is the most abundant Dove.

It usually places its little nest, consisting of a few sticks and rootlets, high up in some tall tree, a banyan, bombax, or fir; and in the banyan the nest is very difficult to see, but the sitting-bird can easily be flushed. In this species it was found, from actual observation, that the male incubates the eggs from 10 A.M. till 4 P.M., and the female for the remaining eighteen hours. The different plumage of the two sexes enabled these observations to be made.

* For previous parts see pp. 17-76 and 163-201, and for map see pl. iv.

Not infrequently the nest is placed in the same tree as that of *Turtur chinensis*, and on one occasion five nests of *Turtur humilis* were found in one tree. It has been met with also in heronries occupied by the Night and Pond-Herons. The usual number of eggs is two, but on July 11 a nest containing three was discovered by Staff-Surgeon C. E. Cortis Stanford, R.N. The eggs have a creamy tint, and are markedly smaller than those of *Turtur chinensis*. They average $1.02 \times .82$, and vary in length from 1.10 to .97, and in width from .84 to .77.

TURTUR CHINENSIS.

This Turtle Dove is a very common resident, and at Hong Kong it is exceedingly tame, feeding close to the houses and flying about the town and gardens. Early in the spring the male may be seen performing his love flights, which he does by ascending, perhaps one or two hundred feet, and coming down with wings and tail stiffly extended: a very pretty aerial evolution.

During the breeding-season two cocks not infrequently engage in battle, pecking viciously at each other and striking hard blows with their wings. This bird has also been seen to attack that robber, the Chinese Blue Magpie (*Urocissa*), when the latter has approached its nest and eggs; and the Dove has been known to strike the Pie severe blows in mid-air with its powerful wings, so that the thief was glad to escape.

There is little doubt that one sex relieves the other during incubation, but as they are alike it is not possible to say precisely when this occurs.

On March 17 a bird of this species being flushed from its eggs pretended to fall to the ground, and there shammed being wounded; this was the only occasion when such an action was observed. There is no doubt that this Dove lays its eggs throughout the year, for they have been taken in all the months except January, and young were obtained which must have been hatched in that month.

At the Marble Rocks, Shiu Hing, twenty miles above Samshui, this bird has become a cliff-breeder, and places its

nest on grassy ledges in the rocks. It is frequently placed in a banyan or a fir tree, and when in the former, being the usual slight platform of sticks characteristic of the genus, is very difficult to see.

Eggs average $1.15 \times .88$, and vary in length from 1.27 to 1.05, and in width from .93 to .84.

FRANCOLINUS CHINENSIS.

The Chinese Francolin is an exceedingly common bird all along the West River, and in Hong Kong and Macao, but the Delta country is not suited to it. Its weird resounding cry once heard can never be forgotten, and is one of the most characteristic sounds of the Chinese country-side. Although it calls more persistently during the spring and summer than at other times, it may be heard during every month of the year, one cock answering the challenge of another, until the whole mountain-side seems to be full of them.

It is known to European sportsmen as the "Partridge," and is difficult to shoot, for it runs fast, and is hard to put up without dogs, whilst if it is walked up by accident, it usually rises so suddenly that it is often missed altogether. The flight is swift and straight like that of a Quail. The birds are captured in plenty by the Chinese, and may often be seen for sale, alive, in small bamboo cages, for thirty cents (7*d.*) each.

The "modus operandi" is to get a female Francolin and put it tethered by one leg into a bamboo trap-cage; this is placed on the hill-side, and the cock, attracted by the hen, enters her prison, the trapdoor falls, and the would-be lover is a prisoner. A number of these traps are set on the hill-side, and are visited twice a day by their owner.

There is little doubt but that this species is double-brooded, for birds may be seen chasing one another on the dry paddy-fields in mid-April, while a reliable Portuguese friend had seen young birds hardly able to fly in September and December.

The only eggs obtained of this species were got by Staff-Surgeon J. H. P. Greenhalgh, R.N., from a woman

grass-cutter at Howlik. Nesting as it does on the ground, the eggs are only found by the grass-cutters, who probably eat them on the rare occasions when they make a find.

COTURNIX COTURNIX.

Quails occur during the spring and autumn migrations on the West River and on the coast, but their numbers vary to a remarkable extent ; in some years hardly a bird is to be seen, and in others they are extraordinarily abundant. The earliest dates in three successive years for the arrival of this bird on the West River were October 9, 15, and 19. In the spring they are generally plentiful, and are shot with Snipe among the mulberry-canes. In the winter of 1900-01 Quails were astonishingly abundant, and again in 1905-06, but in the intervening years their scarcity was equally marked.

At Kwei Hsien young birds were seen on August 11, and a good many adults also. At Shamshui, October 29, a covey of young, just able to fly, was put up, so that this species does occasionally breed so far east and south. In October the birds take to the paddy-fields, where they gorge themselves with ripe rice and become very fat.

The Chinese catch them in springes and in nets. All through the winter these birds may be seen in the shops, in vast numbers, alive, and in big bamboo cages.

EXCALFACTORIA CHINENSIS.

A considerable number of these birds pass through Shamshui on the spring and autumn migrations, but they have not been noticed on the coast, though probably occasionally occurring there.

At Kwei Hsien, on the plain, they were found to be breeding in July. At the end of June, when the grass is cut, the Chinese obtain many eggs, and there is no doubt that this species is double-brooded. From the appearance of the ovaries of a bird shot at Shamshui in August, it is probable that it bred there.

The nest is a well-formed pad of grass, and a clutch of eggs

varies from five to eight in number. Some of the eggs obtained at Kwei Hsien were of a plain light olive-colour unspotted, but most have obscure specklings of a rusty hue; the inside of the egg-shells is of a turquoise blue. Eggs vary from $\cdot99$ to $\cdot92$ in length, and from $\cdot76$ to $\cdot72$ in breadth, whilst they average $\cdot95 \times \cdot74$.

BAMBUSICOLA THORACICA.

The Bamboo Partridge is only found at Howlik, in the forest there. It appears to be a resident, and on May 31 a bird with a brood of chicks was seen by Kershaw. It shows a partiality for thick scrub on the borders of streams; it is exceedingly stealthy in its movements, runs with extraordinary rapidity, and is obtained with very great difficulty. The eggs were not met with.

PHASIANUS TORQUATUS.

According to Fortune, 'Wanderings in China,' who was at Hong Kong in 1841-3, Pheasants were at that time fairly abundant, not far away on the mainland, and many were brought to Victoria and sold to the Europeans. Of course these birds may have come from further afield than he imagined, but still in those days they were not likely to have been imported from Shanghai, as they are now, and so, presumably, they really were not very uncommon on the mainland sixty years ago.

At the present time a Pheasant is an extremely rare bird in the vicinity of Hong Kong or Macao, and indeed is not common anywhere in either Province, so far as the writers are aware. Plenty can be purchased alive in Canton, but these are brought down from the Province of Yunnan in junks, or on rafts.

The shooting of Pheasants is arduous, and three or four in a day is a good bag, for these wild birds run very fast and are got to rise with difficulty. A couple of nests of this species were found on a cultivated island, on the North River, one in long grass and the other in a field of peas, both by Chinese whilst reaping. One of them contained five and the other seven eggs.

The late Lieutenant Tickell, R.N., found a nest in Kwang Si, about twenty miles above Kwei Hsien, at a place called Great Rapids, and at Howlik a Chinese grass-cutter found a clutch of three eggs and promptly ate them.

The eggs measure from 1·87 to 1·79 in length and from 1·39 to 1·36 in breadth, and average $1·87 \times 1·37$.

TURNIX TAIGOOR.

Only two specimens of this Quail were obtained, both in April, one among mulberry-canecanes near Samshui, and the other up the North River. This species was carefully looked for, but as it did not occur again must be regarded as an unusual visitor to this part of China.

TURNIX DUSSUMIERI.

This Button-Quail, which bears a strong resemblance to a gigantic bumble-bee when on the wing, breeds in Kwang Si, and occurs occasionally in Western Kwang Tung during the winter months.

One was obtained at Kwei Hsien, in Kwang Si, in July, which had in its oviduct a fully-formed egg ready to be laid. This had a ground-colour of a greenish white, and was spotted and blotched all over with yellowish brown and with shell-markings of darker brown; it measured about $1·00 \times \cdot 7$ inch.

TURNIX BLANFORDI.

Blanford's Hemipode passes through the West River Valley, Macao, and the New Territory, both on spring and autumn migrations, but was chiefly noticed on the latter.

The first arrivals about Wuchau put in an appearance during the last week of October, but across the water in Macao, they have been observed in great numbers about the middle of November. A few individuals remain throughout the winter, but most hurry through and go further south.

In the spring one of the these birds is occasionally bagged whilst shooting Snipe. Females are more plentiful than males on the autumn passage. The bird does not breed on the West River; probably its area is further to the westward, and it is known to nest in the north of China.

RALLUS INDICUS.

This Rail is a common winter visitor, arriving probably in September and leaving early in April. The time of its arrival is very difficult to ascertain because it frequents the young paddy, through which one cannot walk. When flushed, it flies away, with its legs hanging down, to the nearest cover, and then runs with astonishing rapidity.

HYPOTÆNIDIA STRIATA.

This Rail is a local resident, confined apparently to the coast, for it is not met with on the West River; it is fairly common about Castle Peak Bay, and abounds in some of the country around Mirs Bay.

PORZANA INTERMEDIA.

Baillon's Crake is a bird of passage, and was first seen on March 19; after that date it can be found all through April and as late as May 2. On the autumn passage these birds were first seen on September 18, but Mr. J. C. Kershaw reported having seen one at Wuchau on August 5.

They are fairly numerous but occur singly, so that, although a dozen may be flushed in working through a large marsh, no two will be seen at the same time.

ORTYGOPS EXQUISITA.

This Rail is a rare or accidental winter visitor. Only two specimens were met with, one of which was obtained.

LIMNOBÆNUS FUSCUS.

This Rail is a summer visitor, but no dates of arrival and departure were obtained on account of its extremely secretive habits. It is found equally on the coast and up the rivers.

Nests and eggs were found on various dates from June 13 to September 21, so that it is certainly double-brooded. A nest found on September 21 at Macao was placed in a big tuft of river paddy, and situated two feet above the ground. It was made entirely of dry paddy-straw, fashioned into a rough cup over which the tops of the rice had grown

so as to afford it excellent concealment; it contained one fresh egg (see Pl. V. fig. 19).

The river paddy, it should be added, is a larger and stronger variety than the common sort, with thicker stems, which give very good support to nests placed in it.

AMAUORNIS AKOOL.

This species appears to be more common in the winter than at other times, but it is quite possible that this is only apparent, because at that time of year the undergrowth is not so thick as in the summer.

It breeds occasionally, and a nest with two eggs was found on an island amongst paddy-fields at Howlik, and one with four was discovered on the North River.

AMAUORNIS PHENICURA.

This Waterhen is a common resident, and during the summer a very noisy one, for it commences its loud and unmistakable call at sunset and continues it all through the night until sunrise. It is often found on the lotus ponds, where it runs on the surface of the leaves with amazing rapidity and appears, at a little distance, to be running on the top of the water.

This bird breeds from May until August, and it rears two broods, and perhaps sometimes three, in a season. The nest is usually placed in a small tree or bush in thick overgrown scrub, and has been found as high as eight feet from the ground. It is often quite well made of leaves, rushes, and twigs, and on one occasion that of *Ardetta sinensis* appeared to have been appropriated.

The eggs are usually six in number, but once seven were found; the young in down are quite black. The eggs average 1.56×1.13 , and vary in length from 1.67 to 1.43, and in breadth from 1.25 to 1.08.

GALLINULA CHLOROPUS.

The Waterhen is a resident species, the numbers of which are probably increased by migrants during the winter

months. It frequents the marshes and the lotus ponds, and is much more shy than is the case in Great Britain.

Nests were found on August 1 and on September 15. The former contained five very hard-set eggs, and the latter one, which was quite fresh, and there can be no doubt that this species is double-brooded. The nests were well concealed amongst dense reeds in both cases.

GALLICREX CINEREA.

The Watercock was a fairly common summer visitor, and was first seen on April 19, and last on October 23. They vary in numbers in different years, but at the end of April and the beginning of May are sometimes exceedingly abundant.

The earliest date for eggs is June 20, and as late as September 2 a young bird only recently hatched and covered with jet-black down was found in a paddy-field and near a nest.

Some of the nests found were very crude affairs, and some were built up as much as eighteen inches, and were quite well made of green rushes and paddy-straw, or of the latter alone.

FULICA ATRA.

During the winter months large numbers of Coots are to be found at Wang Mun, where they prefer brackish water, and, indeed, are sometimes found actually at sea.

Coots were often seen perched on the top of the heaps of paddy-straw which came floating down the broadway at Wang Mun, and the stomachs of those shot contained many shells of mollusca. They were first seen on November 29, and last noticed on April 4.

GRUS GRUS.

The only occasion on which Cranes were observed was at Howlik, January 10, on a thick and misty morning, when a solitary specimen was observed flying low down in consequence of the fog.

GLAREOLA ORIENTALIS.

Pratincoles occur on passage, and have been obtained in March and April and during the second half of October. They were seen at Shia Po and Samshui, both places a considerable distance inland. Their flight resembles somewhat that of a Tern, but is faster.

HYDROPHASIS CHIRURGUS.

The Water-Pheasant is a common summer visitor to certain parts of Kwang Tung; a few old birds arrive first from the south, and the main body about a fortnight later. They leave again late in October, and, rising from the water of their favourite pond, they fly straight away to their winter quarters. Solitary birds have been seen as late as the end of November.

These birds often rest on the water, and can swim and dive well on occasion. The cry is a mournful "Ah whoo!" but when the nest is interfered with they can give vent to a sort of squeaky croak. About Samshui, where there are several ponds in which grow the prickly-leaved lotus, the Water-Pheasant breeds in considerable numbers. The female lays her first egg on the bare surface of the lotus-leaf, but as others are added, she accumulates a certain amount of water-weed and dead leaves, apparently with a view to keeping the eggs from rolling off the unsteady platform. As in India, the number of eggs in a clutch is invariably four.

These birds are very tame, but when their nesting-places are approached the female sits in a straight line, so to speak, with head and tail outstretched, and assimilates remarkably to the colour of the water and the leaves about her. At mid-day the eggs are left to the care of the sun, and the birds feed, but in the early morning or evening they may be flushed or detected with glasses on their nests.

The eggs are laid at the end of June or early in July, and the bird is not double-brooded. The eggs are of two types, a brownish bronze-coloured and a greenish bronze-coloured; they are pegtop-shaped, and very highly glazed. They

average 1.5×1.04 , and vary in length from 1.74 to 1.3, and in breadth from 1.13 to .95.

MICROSARCOPS CINEREUS.

This Plover is an uncommon bird in south-eastern China. It is a winter visitor, and has been seen in the Delta country, and also as far west as Kwei Hsien.

VANELLUS VANELLUS.

The Lapwing is a winter visitor, and has been observed near Canton, and further west on various dates in November and December.

CHARADRIUS HELVETICA.

On January 13, 1905, a Grey Plover was shot on some mud-flats at Ngae Mun, an entrance to the Si Kiang, to the westward of Macao, and was the only bird of this species which was obtained. Doubtless it is an accidental bird of passage.

CHARADRIUS DOMINICUS.

The Eastern Golden Plover is a species that passes through south-eastern China on its spring and autumn migrations. It appears, as a rule, in small flocks, sometimes composed of this species only, and sometimes in company with other waders. The majority of the birds observed are immature, but young and adults are found in company. As a rule, they keep to the mud-flats of the Delta country, but have been noticed at Samshui, 100 miles from the coast, and higher up the river still.

The earliest arrivals from the north appeared on August 24, whilst others did not arrive until the last days of October; this is precisely what was observed to take place near Wei Hai Wei. The latest date in the spring on which these birds were seen was May 12 at Samshui, but the majority pass through during the second half of April.

OCHTHODROMUS MONGOLUS.

The Great Sand-Plover is an accidental winter visitor, and has been seen, or shot, on a few occasions only, in the months of January, April, and May.

ÆGIALITIS PERONI.

This little Plover is the commonest wader which spends the winter in south-eastern China, and occurs always in large flocks; it is usually in company with the Dunlin, for which it has a keen appreciation. These little birds are found from Kwei Hsien right through both Provinces to the sea-coast, and frequent not only tidal mud-flats, but large dry sand-banks exposed by the falling river, drained lotus ponds, ploughed paddy-fields, and reedy marshes.

The earliest arrivals from the north were seen about August 4, and others continue to arrive until October and November; in the spring some linger until the third week in May, although most have gone by the end of April.

ÆGIALITIS DEALBATUS.

Ægialitis alexandrina (Linn.); Sharpe, Cat. B. M. xxiv. p. 275, pt.

On January 30, 1906, a specimen of this Plover was obtained on some mud-flats at Macao, where it was in company with a large number of other Waders, Egrets, and Kingfishers. This was the only specimen taken, but others may have been overlooked.

NUMENIUS ARQUATUS.

The Curlew is a common winter visitor to south-eastern China, arriving as early as September 3 from the north, and leaving again, as a rule, by the end of March. It haunts the mud-flats and tidal creeks, and feeds chiefly on small marine mollusca. In the spring large migratory flights pass over from districts further to the south.

NUMENIUS VARIEGATUS.

Whimbrel pass through on migration, and have been observed as early in the autumn as September 4 at Shia Po, a place 100 miles from the sea, and as late as April 20 on their journey to the north.

RHYACOPHILUS GLAREOLA.

The Wood Sandpiper is a common bird of passage, often occurring in large flocks, which frequent both the coast and country inland. The earliest date for its arrival is August 21, and the latest for its departure May 5.

TOTANUS FUSCUS.

The Spotted Redshank is a fairly common winter visitor, but is strictly confined to the tidal mud-flats of the Delta country, and, unlike *Totanus calidris*, is never found inland.

The birds display a great partiality for bathing, dancing and splashing in the water when the tide has covered the flats to a depth of a few inches. They always congregate together in considerable flocks, often comprising several hundreds of birds.

TOTANUS CALIDRIS.

Redshanks occur both as birds of passage and as winter visitors, and have been noticed as early as August 26 and as late in spring as April 18. They occur in small numbers right up the river as far as Kwei Hsien.

HELODROMAS OCHROPUS.

The Green Sandpiper is a fairly common winter visitor, and occasionally may remain for the summer as well, for on July 11 and 24 one was seen on a lotus pond at Ching Ki, close to Samshui. The first arrivals usually come in about the end of July or very early in August, and the main body in September or October, and on the return journey the majority of the birds pass in the first half of April. They are usually solitary and do not combine in flocks, and during the winter more than two are seldom seen together.

This species has been heard calling in July at Kwei Hsien in Kwang Si.

GLOTTIS NEBULARIUS.

The Greenshank is a common winter visitor, arriving about September 21 or 22, and leaving again from about March 3 to April 1; it keeps almost entirely to the salt

or brackish water mud-flats, and was only once seen on the river, some fifty miles from the sea. The birds are solitary or in pairs, and show no disposition to join together in flocks.

TRINGOIDES HYPOLEUCUS.

The Common Sandpiper is certainly in most cases a winter visitor, but there can be no doubt that some are resident as well. As early as August 8 a flock of twenty were seen in western Kwang Si, but the majority of those from the north arrive in September, while most of the birds leave again in April. Throughout the winter months they show a great partiality for feeding on the rivers' banks, inland, and on the coast, for the rocky shores of the many inlets about Mirs Bay, and for the boulder-strewn strands of islands in the Canton River estuary.

All through the summer birds have been observed, sometimes singly, and sometimes in pairs, both on the coast and on the river. Whether such are breeding or non-breeding birds is open to question, though certainly the latitude is rather far south for this species.

When they feed along the river-bank after dark, they are often disturbed by the wash of a passing river-steamer, which sends them flying over the stream uttering their well-known cry.

TRINGA PACIFICA.

Pelidna americana (Cass.); Sharpe, Cat. B. M. xxiv. p. 608.

The Pacific Dunlin is an exceedingly common winter visitor, and is almost always to be found in company with *Ægialitis peroni*. Although more numerous on the sea-coast and in the Delta country, these birds are to be found far inland and always in flocks. They leave for the north in March and April.

TRINGA SUBMINUTA.

Limonites damacensis (Horsf.); Sharpe, Cat. B. M. xxiv. p. 553.

Von Middendorff's Stint is a winter visitor, and has been met with at Canton as early as August 25, and at Wong

Sha, fifteen miles above Samshui, as late as April 30. On the last-named date there were a few chestnut feathers on the breast of the birds. This species accompanies larger waders, and is always wonderfully tame.

TRINGA TEMMINCKI.

Limonites temmincki (Leisler); Sharpe, Cat. B. M. xxiv. p. 555.

Temminck's Stint occurs principally on the autumn and spring passages, but an occasional bird may remain for the winter. Like von Middendorff's Stint, it is exceedingly tame. On April 15, and thence to the end of the month, the birds pass northward, and from mid-September until the middle of November, southward again. They prefer paddy-fields and marsh-land to the river-banks, and are met with, as a rule, in small parties.

TRINGA SUBARQUATA.

Ancylochilus subarquatus (Güldenst.); Sharpe, Cat. B. M. xxiv. p. 586.

A Curlew Sandpiper was obtained on April 26, 1907, near Canton, where it was in company with a flock of Eastern Golden Plovers.

GALLINAGO STENURA.

Much that has been said about the Common Snipe applies to the Pintail, but the latter does not arrive on migration so early as the former, and it departs to the north a little later. The earliest date recorded for the arrival is August 9, and the latest for its departure May 12.

This bird is the "Spring Snipe" of European sportsmen, and, arriving in great numbers and in splendid condition at the time of year which gives it its name, is very highly esteemed as an article of diet.

When on the wing this species is easily distinguishable from *Gallinago gallinago* by its darker under wing-coverts and axillaries.

About the middle of April these birds were found to be moulting their "pintail" feathers and those of the upper tail-coverts and back.

GALLINAGO MEGALA.

This Snipe is not nearly so plentiful as the other two species, but is found with them, and has been obtained on various dates from August 26 until May 17, but chiefly during April, when it is most abundant. Probably none of these birds stay all through the winter.

GALLINAGO GALLINAGO.

The Common Snipe, like other members of the genus, is a bird of more than common interest to the bulk of the European residents, as it provides them with their best shooting.

These birds appear in great numbers both on the autumn and spring migrations, and although the majority continue their journey to the south after a variable rest, some pass the winter in favoured localities; none ever remain for the summer.

The habits of this species are so well known that little can be added to what has been said before, but it may be remarked that, in addition to affecting the paddy-fields and marshes, this bird has a great liking in the spring for the beds of mulberry-canes, so plentiful in the Canton Delta.

The earliest date on which this bird was shot was August 25, and the latest May 5; but it should be remarked that it can be obtained in the market at Canton from August 8, and it was seen at Kwei Hsien on the 10th of that month.

The Common Snipe often associates with the Pintail, the last-named largely predominating in the flocks as a rule.

LIMNOCRYPTES GALLINULA.

The Jack Snipe was only met with once, on November 12, at Kong Mun. Although more than 5000 Snipe were examined in four years, no other example of this species was found among them.

SCOLOPAX RUSTICULA.

The Woodcock is a regular, but never an abundant winter visitor, and has been seen from the beginning of November

until the middle of April, and is in some years more plentiful than in others. This bird occasionally takes up its winter quarters in a particular wood, or gully, and there remains for the whole season. Woodcocks can be purchased alive in the Canton bird-shops from the middle of October onwards.

ROSTRATULA CAPENSIS.

The Painted Snipe is partially resident and partially migratory in the area under discussion. Females containing eggs ready to be laid were shot at the end of April, and a nest was found on an island amidst the paddy-fields near Howlik, from which a road of retreat had been made by the bird into the growing rice-plants.

In October the resident birds are largely augmented by the arrival of numerous winter visitors. They are inclined to be gregarious, and lie closely in the marsh, or paddy, as they do elsewhere.

PHALAROPUS HYPERBOREUS.

Red-necked Phalaropes were only seen during the late spring, when, as often happens, there is a decided drop in the temperature, with rain and strong north-easterly winds; under these conditions immense numbers of these little birds have appeared on the waters of Tolo Harbour and Mirs Bay. The greatest inrush was noticed at Tolo Harbour for several days, commencing on April 10, and the latest date on which they were observed was May 2 at Kowloon.

PLATALEA LEUCORODIA.

Spoonbills have been observed in December and April at Deep Bay, Shiapo, and Taiping, and though not at all common are regular winter visitors. At Taiping they were noticed consorting with *Ardea cinerea*, and at Shiapo were observed swimming and putting their heads under water in the shallows, after the fashion of a Duck. On April 3 one was shot, asleep, on a rock, with its long bill depressed against its breast.

PHOYX MANILLENSIS.

The Eastern Purple Heron is a rare winter visitor to some parts of the coast ; it has been obtained at Deep Bay.

ARDEA CINEREA.

Hérons are resident on the West River, but are rare on the coast. In their habits they resemble their western relations, but display remarkable fearlessness and familiarity in their choice of a nesting-site.

In the centre of Samshui city, in the precincts of the Magistrate's Yamen, is an immense and aged tree, and in this a large heronry is situated. The nests are at a height of about sixty feet from the ground, among the upper and smaller branches, which are for the most part dead. There is another heronry at Shiu Hing city, in the Magistrate's garden, where the birds are never disturbed, and in this case the nests are placed in several scattered banyan-trees, and like those at Samshui are in the upper and dead branches. A few Night Herons breed in this colony also.

The nests are remarkably small for those of this species, appearing to be little larger than those of a Ring Dove, and the sitting bird spreads over them both fore and aft. After the eggs are laid the nests are somewhat added to in bulk however. On January 23, at Samshui, three nests were in process of construction, but on February 16 thirty-three were counted in this one tree, and although some contained well-incubated eggs, others were not yet finished. Twenty-four of the nests contained four eggs each. After one egg is laid the bird sits on the nest. A clutch generally exhibits eggs in various stages from fresh to those in which the embryo is formed. Eggs have been taken on May 3 and on June 4, so that this bird is almost certainly double-brooded. Owing to the fact that the tree at Samshui sheds its leaves at the end of February and becomes green again in April, the nests in the heronries and the birds on them are conspicuous for a great distance.

The Herons capture remarkably large fish at Samshui and Shiu Hing, and the Magistrate's coolies get many a good meal from those which are dropped from the tree tops.

The usual clutch is of four eggs, but three or even two have been noticed. Five occurred on three occasions.

Eggs vary from 2.6 to 2.18 in length, and in breadth from 1.79 to 1.61, whilst the average of a large number is 2.38×1.7 .

HERODIAS ALBA.

The Great White Egret is an occasional winter and spring visitor to the coast of Kwang Tung, but has not been met with inland.

GARZETTA GARZETTA.

The White Egret is a migrant, and very large flocks of it may be seen at Moto, Deep Bay, and elsewhere. Although commonest in the spring and autumn months, a few individuals may be seen on the West River all through the summer.

At Tak Hing an enterprising Celestial sportsman has made some decoys in the likeness of the species and placed them in trees with intent to deceive, and with like evil purpose has put other decoys, which are presumed to represent *Ardea cinerea*, in the river on the water's edge. He has moreover built a refuge to lie in wait for these fowls, but so far his truly praiseworthy efforts appear to have been unrewarded, although the decoys have been there for years.

DEMIEGRETTA SACRA.

This Egret was met with in the spring and early summer, and never away from the coast. The white phase of plumage was not observed.

NYCTICORAX NYCTICORAX.

Night Herons are very common on the river and certain parts of the coast, and are resident. At Samshui, behind the temple, there is a heronry of this species, numbering some three hundred pairs. The nests, placed in slender bamboos, are small platforms of sticks, so frail that the eggs, when present, can often be seen through them, and in size are only about as large as those of our Ringdove, at least this is the case with the earlier ones. Later in the season

the nests appear to be better built and are, to some extent, lined with dry stalks, which do not, however, radiate from the centre as has been described.

The time for laying varies remarkably, for on March 24, though only about a third of the birds were breeding, eggs were found in all stages of incubation, and there were young birds in several nests. At the end of March 1904, there were young birds at Samshui, whereas on April 6, 1906, only one egg had been laid! Three weeks later many birds were breeding and the nests appeared to be better built.

The heronry mentioned by Swinhoe ('Ibis,' 1861) at the Honam Temple, near Canton, no longer exists, though suitable banyan-trees still grow there.

These birds are supposed to be sacred, which does not, however, apply to their eggs, for a hungry Chinaman is not above going to the heronry on the quiet, and shaking the bamboos until an egg, or several, roll out of the shallow nests; if they are not utterly smashed by a fall of twenty feet they are promptly eaten. This peculiar habit of the Celestial may account for the vast numbers of broken eggshells on the ground at Samshui!

Probably this bird is single-brooded, although young have been found as late as September 11.

Besides the two heronries mentioned above, numerous smaller ones exist on the West River; at Tam Chau, on August 14, from one large banyan-tree in the centre of the city eighty-six of these birds were counted as they flew forth at sunset, to all points of the compass, in nocturnal quest of food, and no doubt there were more, for darkness only prevented others from being seen.

This Heron feeds chiefly on frogs, and the odour of a heronry on a damp, warm, spring day, such as characterizes that season in southern China, is beyond either conception or description.

A mature bird has been observed to mate with one in immature plumage.

The eggs, usually pointed at one end, vary somewhat in shape, and in depth of colour, even in the same clutches.

BUTORIDES JAVANICA.

This Bittern is a summer visitor to south-eastern China, but is not abundant. It breeds up the North River and at Howlik, and in one or two other places, making a slight nest high up in a banyan or fir tree.

When, as sometimes happens, this species nests among a colony of *Ardeola bacchus*, careful identification is necessary, as both eggs and nests of these two species are indistinguishable. Never more than four eggs have been taken in a clutch, and the bird sits much more closely than *Ardeola bacchus*; when put off its eggs it makes no sound, but flies a little way and returns from time to time, but always in silence. Most of these birds appear to commence laying in the first half of June. On one occasion, in the summer, a clutch was taken on the second of the month and put into a drawer on board the gunboat; it was looked at again on the sixth, when it was discovered that the shells had chipped and that the young birds were still alive!

Eggs vary in length from 1.61 to 1.40 and in breadth from 1.08 to 1.16, whilst the average is 1.52×1.12 .

ARDEOLA BACCHUS.

The Chinese Pond Heron is a resident and very abundant species in Kwang Tung and Kwang Si, but wanders about considerably in the winter months, when its numbers may perhaps be increased by immigrants from the north. In the winter it is sometimes seen at Hong Kong, but it does not breed there.

Birds in winter plumage are difficult to see whilst feeding on the mud-flats, until they take flight, when they at once become conspicuous, as they spread their white wings. As a rule, they feed by day and in the evening fly in flocks like Rooks to roost in some favourite clump of trees, but they do at times feed at night as well.

Among the Chinese they are considered to be a great delicacy.

As a rule, Pond Herons nest in colonies of some size and in high trees, but at the same time small heronries may be

encountered and in small trees, and several such occur on the coast of the New Territory. The largest colony, however, is at Samshui, where they breed in the same bamboos as the Night Herons, and as these are much earlier builders, the Pond Herons have to take what nesting-sites they can find, and one on a fallen bamboo, a few feet from the ground, was noticed.

The nests are made of fine bamboo or other twigs, and at Samshui do not outlive the winter gales, although less crude in construction than a casual glance would lead one to suppose.

The eggs are usually four, rarely five, and vary much both in shape and colour, even in the same clutch.

Young birds have been found in the nests as late as September 4, but it is doubtful whether this species is double-brooded, seeing it has many enemies, so that these may be merely belated broods.

Eggs vary from 1.63 to 1.39 in length and from 1.26 to 1.07 in breadth, and average 1.51×1.13 .

BUBULCUS COROMANDUS.

This species is an occasional visitor on the spring and autumn migrations.

ARDETTA SINENSIS.

The Chinese Little Bittern is a summer visitor and a breeding-species, and very common in suitable places, especially by the sides of reed-grown creeks, in the Delta country. It arrives in the middle of April, a few days after the Cinnamon Bittern, and is very much more plentiful; it leaves again in October, but a few individuals always remain on the river for the whole winter.

As soon as the Bitterns arrive they betake themselves to their breeding-grounds, which are identical with those of the next species in character, but far more extensive. This bird, moreover, often makes its nest in the big river-reeds, which *A. cinnamomea* never does; on the other hand, unlike the latter, it never places its nest on the ground.

The nests resemble those of the Cinnamon Bittern, but at Canton, where these birds have taken to building in the banyan-trees along the Shameen, or Promenade, they are a good deal more substantial. Here the birds make such a mess as to be deemed a nuisance and are being cleared out, which is not an easy matter.

This Bittern has been seen sitting on its tarsus catching flies, which it did with incredibly rapid lunges of its head and bill, and without moving its body at all.

The eggs are laid from early in May until August, so that this bird is probably double-brooded. Clutches of four or five are usual, but as many as seven have been taken. Eggs average $1.30 \times .95$, and vary in length from 1.34 to 1.17, and in breadth from .97 to .89.

ARDETTA CINNAMOMEA.

The Cinnamon Bittern is a summer visitor, arriving in April and leaving again in October. The usual date of arrival is April 7 or 8, and on one occasion a solitary individual was seen in January.

These birds nest in many favoured spots, but at Kong Mun, on an island, they occur in large numbers in company with *Ardetta sinensis* and *Dupetor flavicollis*. The nest is never placed at any great height, often only at an elevation of a foot or two, and sometimes on the ground itself; it is a slight affair of sticks, lined with a few dead leaves, except when in a thick creeper, where the sticks are dispensed with. Usually it is placed in tangled undergrowth of thorns and weeds, but it has been found in an orange-tree, and occasionally in a bamboo. When on the ground, a hollow is scraped and a few sticks placed in it. The birds sit lightly, and leave their eggs with harsh croaks when disturbed.

The eggs have not the greenish tinge which distinguishes those of *Ardetta sinensis*. The usual clutch is three or four, and the eggs vary in length from 1.24 to 1.22 and in breadth from 1.05 to .96, and average 1.29×1.02 .

The birds lay from the last week in May until the middle of June and are single-brooded.

DUPETOR FLAVICOLLIS.

This Bittern is a summer visitor to the delta of the Canton River, and is much the rarest of the three breeding species. It arrives early in May, and after nesting betakes itself to the ripe paddy ; when that is cut it looks out for other suitable cover until October, when it vanishes to the south.

Only two nesting-places were found : one at Kong Mun, where this species breeds in company with *A. sinensis* and *A. cinnamomea*, and the other between Kong Mun and Mōto Mun, in the reeds ; the former only contained three pairs. The nest is just a platform of dead and decaying vegetable matter, and on it two or three eggs are laid. These are white with a greenish tint.

The eggs vary from 1.74 to 1.59 in length and from 1.27 to 1.21 in breadth, and average 1.63×1.24 .

BOTAURUS STELLARIS.

A few Bitterns occur every winter and are sometimes shot in the Snipe marshes.

PHALACROCORAX CARBO.

Cormorants are winter visitors to the Kwang Tung coast, and they are not found very far up the rivers as a general rule. One particular bird, however, was often noted on a particular stake at a place forty miles from the sea. They appear in November, and for the most part leave again by the middle of April. They have, however, been seen about Hong Kong as late as the first week in May.

Young birds, with white breasts and underparts, were noted on November 26.

The practice of fishing with Cormorants, which is so well known among the Chinese, is only carried on up the North River.

PHALACROCORAX PELAGICUS.

Shags are not uncommon winter visitors to the Kwang Tung coast, though they are never so abundant as the Cormorants. From October until April they may be found

in suitable places, and especially on islands off the coast. Shags have been observed as far as eighty miles out at sea, but this is not usual.

PELECANUS PHILIPPENSIS.

Pelicans are rare and unusual winter visitors to Kwang Tung and Kwang Si, and have only been noticed on a few occasions. An immature bird was seen near Wuchau in August 1906, which, when approached, paddled down river at a great pace. Other specimens have been noticed in Deep Bay and off the coast, near Macao, in April.

COLYMBUS SEPTENTRIONALIS.

The Red-throated Diver was noticed once in February 1901, at Deep Bay, when a Chinaman encountered on the road had a bird of this species in a basket and volunteered the information that it had been caught in a fishing-net.

PODICIPES PHILIPPENSIS.

The Little Grebe is a resident species, but subject to considerable seasonal movement. In spring the migration of these birds is easily observed, because the paddy-fields are then dry and they are obliged to keep to the river, whereas in early autumn everything is wet.

The habits of the bird at the nest are the same as they are in England, and on leaving its eggs the female covers them with decayed vegetation. Lotus ponds are especially favoured for breeding purposes, and each pair has its own pond. The nests are hard to find, when hidden by a big floating lily-leaf; and there are no boats on these pieces of water.

Near Canton a Chinaman was observed killing these little birds with a musket ten feet in length; and at Shia Po, where there is a big marsh, they are killed, spatch-cocked, dried flat on stretchers, and sent to market, where the guileless heathen buy them and eat them under the impression that they are wild duck!

The eggs of this species may be found from May until

September, and as late as October 23 a chick about a week old was obtained. The first full clutch of three eggs was taken on June 3. The usual number is three, but six were obtained.

PODICIPES CRISTATUS.

The Great Crested Grebe is a common winter visitor to the creeks of the Delta and to the estuary of the Canton River, near Hong Kong, but was only once seen in Tolo Harbour, on the seaward side of Kowloon Peninsula.

The birds arrive in November, and are usually in small parties or alone ; but as many as a dozen have been seen together. They leave again in March.

HYDROCHELIDON LEUCOPTERA.

White-winged Black Terns are seen every spring in small parties, on their northern journey, but have not been observed on their return to the south. Usually they are noticed during the second week in May, but on one occasion as late as June 2. They have been seen in company with *Sterna caspia* and *Sterna sinensis*. They betake themselves to the flooded marshes and to the mulberry-canals, where they are often observed capturing water-beetles and other insects.

HYDROPROGNE CASPIA.

Caspian Terns pass along the coast in the spring, and particularly in the month of May, when a steady stream of small parties goes by ; but they are to be seen as early as the end of January. They are observed fishing and feeding on the flooded paddy-fields, but do not appear to go far inland.

STERNA MEDIA.

The Crested Tern has been observed twice on the coast of Kwang Tung in the month of September ; on one occasion this was after a typhoon, which may have impeded or altered its migration flight.

STERNA SINENSIS.

The Chinese Ternlet occurs, as a rule, during both the autumn and spring migrations, and chiefly confines itself to the tidal portions of the rivers.

The birds are usually single, but flocks of as many as twenty do occur, and they have been noted quite ninety miles away from the sea. They fish over the marsh-land in the same way as White-winged Black Terns, with which they are often associated.

GYGIS CANDIDA.

This Tern was only observed on one occasion; this was at Macao on September 20, 1905, when a small flock frequented the harbour for three days, during a strong blow from the north-east.

LARUS SAUNDERSI.

This Black-headed Gull has twice been noticed; on March 16, 1904, about a dozen individuals were seen about half-way between Kong Mun and Samshui, on the spring migration, and in September 1906, at Macao, a specimen was brought to Mr. J. C. Kershaw.

LARUS RIDIBUNDUS.

The Black-headed Gull occurs in considerable numbers from the third week in October until February or March, and unlike *Larus canus* frequents the West River for many miles inland; it has been seen in November at Tulok, 190 miles from the sea.

On September 9 an immature bird of this species was seen at Moto; an unusually early date. Like other Gulls, its numbers seem to depend to some extent on the kind of winter weather which obtains.

LARUS CRASSIROSTRIS.

The Bar-tailed Gull is a not infrequent visitor to the Kwang Tung coasts in the months of January, February, and March, when it associates freely with *Larus canus* and *Larus cachinnans*: it does not usually come into Hong Kong

Harbour except in very severe weather. Immature birds, as in the case of *Larus cachinnans*, vastly outnumber those which are in full plumage. These Gulls are exceedingly tame and confiding, coming right alongside a ship at anchor, so that they may be almost touched with a stick.

LARUS CACHINNANS.

The Mediterranean Herring Gull is possibly the only Herring Gull which visits the Kwang Tung coast in the winter months. The earliest date on which it was noticed was September 27, and the latest April 24.

Considerable numbers crowd into Hong Kong and Tolo Harbours and into the Western Approaches and Deep Bay, when the north-easterly gales occur in the winter and early spring; but of these the vast majority are immature birds. Mature specimens of *Larus cachinnans* have often been observed and several times obtained in Hong Kong and Tolo Harbours, but no undoubtedly mature specimen of *Larus vegæ* was either seen, or shot. It seems doubtful, however, whether the young of these nearly allied species are distinguishable, and therefore it is quite possible that both species of Herring Gulls are represented.

LARUS CANUS.

The Common Gull is a moderately frequent winter visitor to the Kwang Tung coast, but it does not leave the salt water.

LARUS GLAUCUS.

An immature specimen of the Glaucous Gull was noticed on several occasions in Hong Kong Harbour, during severe weather with north-easterly winds, during February 1908.

NETTOPUS COROMANDELIANUS.

The Cotton Teal Goose is a species of somewhat irregular occurrence, but has been noticed at all times of the year both on the river and in the Delta. Usually on fresh water, this species has been observed in other situations and on the lotus ponds.

ANSER CINEREUS.

Anser rubrirostris Hodgs.; Salvadori, Cat. B. M. xxvii. p. 91.

Gray Lag Geese occur every winter in small flocks, and have been noticed on the coast and islands, and on the river as well. They usually arrive in November and December, and appear to move to the north again in March.

The only specimen shot was a solitary bird, killed on the river above Shiu Hing, twenty miles above Samshui. On March 4, a Chinaman was seen stalking a small flock of these birds on Shia Po marsh, and to aid him in this difficult proceeding he had arranged a kind of bow of wood, in the centre of which lay the muzzle of his gun, with small green twigs all round on the arc of the bow, to provide him with suitable cover, whilst he, the Celestial, wriggling along on his belly, pushed the whole affair before him.

In northern China, at any rate until quite recently, the wild Geese would allow a native to walk within twenty yards of them.

DENDROCYGNA JAVANICA.

The Smaller Whistling Teal was observed on several occasions during the summer months, but there was no evidence that the species bred, and it should perhaps be looked up on as an accidental summer visitor.

At Fu Wan, twenty miles from Samshui, on July 23, two males of this species were obtained from a lotus pond, and ten others were seen at the same time. Because of their habit of diving and returning to the surface in the air-space under a floating lotus-leaf, these birds were retrieved with considerable difficulty. On August 3 a flock of twenty birds was seen on the same pond, and Staff-Surgeon C. E. Cortis Stanford, R.N., shot a female. On July 16, when proceeding up the Great Rapids, in western Kwang Si, one was flushed from a small island.

ANAS BOSCAS.

The Mallard is an unusual winter visitor to the West River, and has been once shot near Samshui.

ANAS PÆCILORHYNCHA.

The Spotbill is the commonest of the Ducks which spend the winter in south-eastern China; a few remain throughout the summer, and occasionally some of these breed.

This species has a great partiality for salt water, and it has been observed to frequent the small islands off the coast in company with *Larus canus*, *Larus cachinnans*, *Phalacrocorax*, and *Demiegretta*, and it often rests during the day on the bare boulders that abound on their shores. Sometimes these birds roost on the islands, but usually they flight at sunset to the paddy-fields to feed, and many of them are caught in the flight-nets at Wang Mun, the entrance to the West River. The Chinese who net these Ducks split them down the back, dry them, and sell them in the Canton market.

In May 1904 a female of this species was seen swimming in the sea off one of the islands, followed by five ducklings, and this, together with the discovery, on several occasions, of broken egg-shells, constitutes the only evidence as to the breeding of this Duck in Kwang Tung.

The birds seen during the summer are usually in pairs, or in threes, but in October and November large flocks occur on the river and on the coast, often in company with other species.

MARECA PENELOPE.

Widgeon were observed from October 11 until February 25, occasionally in flocks of their own kind only, but more often in company with various other species.

NETTION CRECCA.

Teal are not uncommon during the winter months, and sometimes large flocks of them are seen on the river.

They arrive as early as the end of August and have been seen as late as the middle of April, but the majority come in during October and November, and they show a much greater partiality for fresh water than some of the other

Ducks. Although associating at times with other species they have a tendency to keep to themselves.

Peregrine Falcons were observed to feed almost exclusively on the Teal, as they also do in northern China.

DAFILA ACUTA.

Near Canton the Pintails select a shallow backwater in which to doze away their daylight hours, and although this is close to the main river, where a continual stream of steamers of all sizes and junks innumerable passes all the time, the Ducks are entirely undisturbed by it. Their habitual caution, however, is never laid aside, for should an attempt be made to approach them in a shallow-draft native boat, they at once bestir themselves, and flapping along the surface in a cloud of spray they gradually rise into the air, and circling round, far out of gunshot, presently take their departure to some other shallow further back.

At sunset they flight to the tidal paddy-fields, there to feast through the dark hours. The Chinese, who know their habits well, set flight-nets of fine, but tough, bamboo fibre for them, and catch great numbers, so that a live Pintail may be purchased, in the winter time, for about threepence-halfpenny, or a dead one, for many get strangled in the nets, for somewhat less. The Chinese prefer to buy their Ducks alive, perhaps to make sure that they are fresh.

QUERQUEDULA CIRCIA.

About two thousand Duck were observed at Taiping, fifteen miles below Samshui, on November 22, and amongst other species was the Garganey. This species occurs both in the autumn and spring on passage, but its numbers vary considerably, and in some seasons none are seen at all; this happened in March and April 1907.

The Garganey keep a great deal to themselves and do not join up with the large flocks of other Teal and Spotbills which winter in south-eastern China. The first date in the autumn is November 12, and the last in the spring April 17, and on the last-named a good many of the birds were paired.

SPATULA CLYPEATA.

Shovelers occur not infrequently during the winter months, both on salt and fresh water, and are usually associated with other species of Ducks. On April 8, two males and three females were seen on a fresh-water lake, in company with a flock of tame Ducks.

FULIGULA MARILA.

Small parties of Scaups have been noticed at considerable distances up the river, as well as in the Delta. At Tolo Harbour in December, very large flocks of these birds were seen and a few were shot. Males are frequently seen alone in small flocks, and they dive continually.

MERGANSER SERRATOR.

The Red-breasted Merganser is a common winter visitor to the Kwang Tung littoral, where, although sometimes associating in small flocks of about a dozen, it very often joins the larger concourses of other Ducks, so common at this time of the year. It was first seen on November 22, and from that time onwards a few were to be met with all through the winter months, and at Tolo Harbour they were still about at the end of April, for the most part paired and in nuptial plumage. These birds have been seen 150 miles away from the sea.

On December 1 one of the writers had an exceptional opportunity of observing a Merganser chasing its prey under water, for he was placed 200 feet above the bird which was in a clear pool with a sandy bottom, into which there flowed a small fresh-water stream, whilst brilliant sunshine showed up every movement made by the Duck. Whilst under water the bird depended almost entirely on its feet, and only twice in half an hour was it seen to open its wings, when submerged, and then the white alar specula were very conspicuous. The agility and speed with which the bird doubled round the rocks and stones whilst under water were extraordinary, and apparently it was invariably successful in capturing the fish it was hunting, although some

even threw themselves on to the sandy edges of the pool in their efforts to escape.

At times the bird flapped along the surface of the water with its wings and head alone submerged, and in this way also apparently obtained food. After a successful bout of fishing the Merganser rested on the surface of the pool, and defecated, and this function was performed three times in half an hour. At length a Chinaman passed by, and the Merganser being frightened, made off to sea.

APPENDIX.

A further Note on certain Species of Pericrocotus which occur in South-eastern China, with the Description of a new Species of the Genus.

Since the above article was written there have come to light certain facts which appear to call for further comment on this genus, and a species has been differentiated from *Pericrocotus roseus* which it is desirable to name.

To deal with this species first. *Pericrocotus stanfordi*, sp. nov. appears to be most nearly allied to *Pericrocotus roseus* and *P. cantonensis*. From *P. roseus* it differs in the presence, at all ages, and in both sexes, of a frontal patch and an incomplete collar. *Pericrocotus cantonensis* differs from *P. stanfordi* in the total absence of any pink or reddish feathers in the plumage of the male. +

The general colour of *P. stanfordi* is that of *P. roseus*, but the frontal patch mentioned above varies from a light pink to orange-buff in colour. The collar is of a very light orange-buff or pink according to age and sex, and inclining to whitish at the sides of the neck. There is a well marked alar speculum which varies much in width in different specimens, and in colour from orange to vermilion in the male. The upper tail-coverts are of a reddish orange colour; the colour appears to vary according to the age of the specimen.

In the female the red or orange of the male is replaced by lemon-yellow.

The measurements are as follows:—Length of the male averaging 7.25 in., of the female 7.10 in.; culmen 0.5 in.; wing 2.5 in.; tarsus 0.7 in.; tail in male 3.7 in., and in female 3.3 in. Bill black, legs brown, irides brown.

It remains to make some remark as to the distribution of these three species: *Pericrocotus stanfordi*, *P. roseus*, and *P. cantonensis*. *P. stanfordi* is found at Samshui, and thence as far west as Tak Hing, where it is replaced by *P. roseus*. Both these species are migratory, and both breed in their respective areas. *P. roseus*, which has not been noticed from China before, probably occurs through Kwang Si and Yunnan on into India.

Pericrocotus cantonensis was only met with once upon the North River, and is, in the writer's opinion, an accidental visitor to the region dealt with in this article. The range of *P. cantonensis* is further to the east and north—so far as is known—than that of the other two species.

What has been written as to habits and nidification under the head of *P. roseus*, applies equally well to *P. stanfordi*.

It has been suggested that *P. stanfordi* is a hybrid between *P. roseus* and *P. cantonensis*.

The type of *P. stanfordi* is, with all the other examples collected, now preserved in the Natural History Museum at S. Kensington.

XXI.—*The Evolution of Adaptation in Parasitic Cuckoos' Eggs.* By E. C. STUART BAKER, F.Z.S., M.B.O.U.

It is still sometimes a matter for argument and discussion as to whether the eggs of Parasitic Cuckoos have undergone, or are now undergoing, any process of adaptation in shape, size, or coloration, to render them similar to those of the foster-parents in whose nests they are deposited.

As regards *Cuculus canorus canorus* it is almost universally accepted as a fact that some such process is being slowly undergone, and that by it a most wonderful adaptation has already been arrived at in many instances. Thus we may



Vaughan, R. E. and Jones, K H. 1913. "The Birds of Hong Kong, Macao, and the West River or Si Kiang in South-eastern China, with special reference to their Nidification and Seasonal Movements.-Part III." *Ibis* 1(3), 351-384.

<https://doi.org/10.1111/j.1474-919x.1913.tb06558.x>.

View This Item Online: <https://www.biodiversitylibrary.org/item/85342>

DOI: <https://doi.org/10.1111/j.1474-919x.1913.tb06558.x>

Permalink: <https://www.biodiversitylibrary.org/partpdf/378351>

Holding Institution

Smithsonian Libraries and Archives

Sponsored by

Smithsonian

Copyright & Reuse

Copyright Status: Public domain. The BHL considers that this work is no longer under copyright protection.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.