THE SNAKES OF BANGKOK.

BY

MALCOLM SMITH, M.R.C.S., L.R.C.P.

Subfamily. *DIPSADOMORPHINÆ*. 30. Dipsadomorphus multimaculatus.

Siamese 3 13 (ngu sing) ?

A rare snake in Bangkok. Mr. Tatner tells me that several years ago, when the grass was being cut at the Sports Club, a small patch remained which the men were afraid to enter owing to some very fierce snakes which they said were in it. He went out with the men, and as the cutting was completed and the snakes driven forth, killed no less than 13 of this species. I have never seen any other specimens from Bangkok.

This snake bears a superficial resemblance to Russell's Viper, and at a casual glance might be mistaken for it. Russell's Viper, however, is a much heavier snake, and the spots are larger, more distinct, and somewhat differently arranged. In lepidosis the two species are entirely different.

Length. The largest specimen I have seen came from Sanam Cheng and measured 890 mm. in total length. It appears to be longer than any previously recorded.

Color. Light brown or greyish brown above, with two series of roundish dark brown dorso-lateral spots, and a series of smaller spots or short cross bands on either flank. These spots are usually paler in the centre, and are edged with white. Below, whitish or yellowish, spotted and speckled with pale brown. Head with a blunt \wedge - shaped mark above, and with a dark band from the eye to the angle of the mouth.

Distribution. From Southern China and Burma to the Malay Peninsula and Archipelago.

31. Psammodynastes pulverulentus. The Mock Viper.

I have seen two specimens of this little snake, both from Dusit Park. It is fairly common in some parts of the country. One which I kept alive for some time was shy and very active, but made no attempt to bite when handled. It fed upon frogs.

Distribution. From the Eastern Himalayas and Southern China to the Malay Peninsula and Archipelago.

32. Dryophis mycterizans. The Common Green Whip Snake.

Common in Bangkok. This snake is entirely arboreal in its habits, living among the bushes and hedges about the gardens and plantations. I have hardly ever seen one on the ground, nor do I think they ascend trees to any great height. It is of a gentle and placid disposition. Individuals that have only just been caught show hardly any fear of one, and will, after a few hours, allow themselves to be handled quietly and without protest. As an instance of the placid nature of this snake, a half grown specimen was once found in my garden and brought in at tiffin time. It was placed among the flowers on the table, and remained there calmly throughout the entire meal, watching me, but making no effort to get away. Old ones are sometimes bad tempered, and cannot always be trusted. Unlike most snakes, that bite at your hands, they have a nasty habit of watching your face, and especially your eyes, and then suddenly making a dart at you. Fortunately the teeth in the front of the jaws are extremely small, and they are unable to inflict any damage. It is the only snake I know of that the Siamese are not afraid to handle, and boys may be sometimes seen carrying one along, fastened with a noose of thread or string.

The Green Whip Snake appears to take more interest in its surroundings than most snakes. Captive specimens may be frequently seen to observe one, following with both head and eyes whatever is taking place before them. The rest of the body is kept absolutely still. They hardly ever move about their cage, and will remain extended upon a branch in almost the same position for days together. I should imagine that these snakes in a wild state seldom go in search of their food, but rather wait for their prey to come to them. For this purpose their protective coloring, harmonizing so perfectly with the foliage among which they live, must be of the greatest value. They feed chiefly upon lizards and small birds, killing the latter by constriction.

Length. The largest specimen I have seen measured 1670 mm. Color (in life). Verdant green, paler below than above. A yellow or white line at the outer border of the ventral shields. Throat white. Interstitial skin in the fore part of the body, alternately white and black. Iris golden yellow with horizontal pupil. The young have generally two fairly distinct whitish lines down the middle of the belly.

The identification of this snake is easy, the coloration, the elongated head with the curious tip to the snout, and the horizontal pupil, serving to distinguish it easily from the Green Pit Viper, the only other entirely green snake that is found in Bangkok.

Distribution. India, Ceylon, Burma, Siam. This species does not extend into the Malay Peninsula and it would be interesting to find out its most southern habitat in this country.

33. Chrysopelea ornata. The Green and Black Tree Snake.

Siamese & ITED (ngu khieo).

Very common in Bangkok, and, owing to its partiality for living in houses, is the snake which is brought more into contact with the residents of the town than any other kind. There is probably hardly a house or office where it has not been met with at some time, and one might safely say, that of every ten snakes encountered inside dwelling places, eight of them would prove to be of this species. This partiality for living in habitations is by no means universal, but appears more especially to be a trait of Bangkok individuals. Its climbing powers are extraordinary and are shown at their best amongst masonry. The special formation of its ventral shields greatly assists it in these performances, and by taking advantage of every projection, crack and corner available, it is enabled to scale perpendicular walls and to reach positions apparently quite inaccessible.

Chrysopelea ornata is a bold and courageous snake, and, for its size, extremely powerful. Its habits are diurnal. It is a voracious feeder and will, I believe, devour anything that it can overcome. Mice, birds, lizards and frogs have all been recorded as forming part of its diet, but I do not think that other snakes have yet been mentioned. In the stomach of one sent me last year, I found the head and fore part of the body of a young tree-snake (*Dendrophis pictus*). Even the great "tuk-kaa" (*Gecko verticillatus*) is not secure against this rapacious creature, and I know of several occasions on which it has been tackled. It is not always that the snake comes out of these combats unharmed, and considering the tremendous bite which this lizard can give, it is not surprising. In one encounter at least that I know of, the gecko had got a firm hold immediately behind the head of its opponent, and although the snake ultimately proved the victor, it was so badly damaged as to be only just able to crawl away, leaving its victim uneaten.

I have seen this snake, also, catch a full grown mouse, crush it to death in its coils, and swallow it, the whole operation being accomplished in mid-air, the snake suspended by its tail only from a small branch.

Flower calls it the fiercest snake he has ever met, and says that individuals which he tried to keep in captivity showed no signs of becoming tamer, and were also an annoyance to other inmates of the cage. I have not found this so. Those I have kept became moderately tame, and soon allowed themselves to be handled.

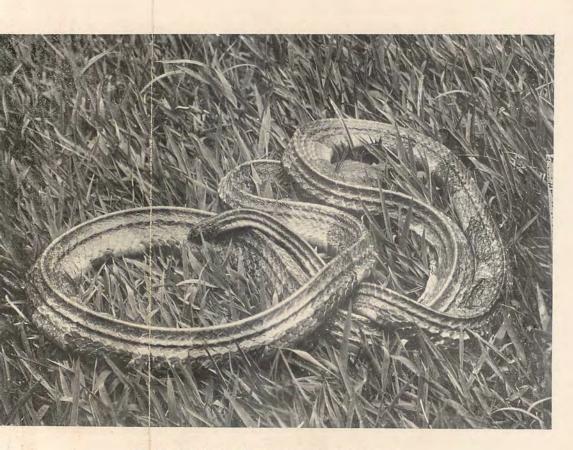
Length. 1400 mm.

Color. Very variable, but only one form (var. D. Blgr. Cat. Snakes) is found in Bangkok, and as far as I am aware, throughout the whole of Siam. It is as follows :—Above pale green, each scale edged with black and with a median black line, giving the whole the appearance of fine longitudinal lines drawn down the body, with finer diagonal cross-lines. Below, a paler green, with a series of black dots at the lateral keel. Subcaudals edged with dark grey. Head yellowish, extensively marked with black, which takes the form of transverse bars.

In the young, the black lines mentioned above, coalesce and form a regular series of dorsal cross-bars. In some specimens this is so marked that the snake appears to be black, with narrow green cross-bars.

Distribution. India, Ceylon, Burma and Southern China to the Malay Archipelago.





The Banded Krait (Bungarus fasciatus), poisonous.

THE SNAKES OF BANGKOK.

Subfamily. HYDROPHIINÆ. The Sea Snakes.

Siamese 3 MILG (ngu talay).

34. Enhydrina valakadien.

35. Enhydris Hardwickii.

Both the above species have been occasionally recorded from Bangkok, having been caught in the river Menam. The true Sea Snakes are, however, strictly inhabitants of the salt water and their occurrence here can only be regarded as accidental, carried up probably upon some unusually heavy tide.

As far as is known at present, all the Sea Snakes are extremely poisonous.

Subfamily. ELAPINÆ.

36. Bungarus fasciatus. The Banded Krait.

Siamese. ง ลาม เดียม (ngu sam liem).

The Siamese name refers to the marked triangular shape which the body of this snake has in section, and which is produced chiefly by the prominence of the vertebral region.

It is curious that Flower did not record this snake from Bangkok, or indeed meet with it himself in any part of the country. Its vivid and striking coloration make it unusually conspicuous, whilst its sluggish movements render it an easy victim whenever encountered by man. Its strictly nocturnal habits have probably saved it on many occasions.

The Banded Krait, whilst by no means common in Bangkok, is not infrequently met with. It prefers, I believe, the open country, but has been found in many parts of the town. One of the finest specimens I ever caught, was in hiding beneath a box beside the Chancery at the British Legation, whilst a young one was once sent me, having been killed in the dining room of the mess at the Borneo Company. In disposition it is an extremely quiet and inoffensive creature, and I have never seen one attempt to bite, even under strong provocation. Its strange behaviour and the attitude which it often assumes when captured is well illustrated in the accompanying photograph. Instead of endeavouring to escape, it throws its body into a loose coil or two, and hides its head away beneath some part of it. Perhaps like the ostrich of fable, with its head concealed, it thinks itself entirely hidden from view. If provoked with a stick it will give a convulsive jerk or two, and hide its head again beneath some other part of the body. If left undisturbed, it will remain in this position for a long time. The photograph was taken the day after the snake had been caught, and although it gives no idea of the brilliant contrasts in colouring, shows very clearly the strong vertebral prominence, and the blunt, enlarged ending to the tail which is characteristic of this snake.

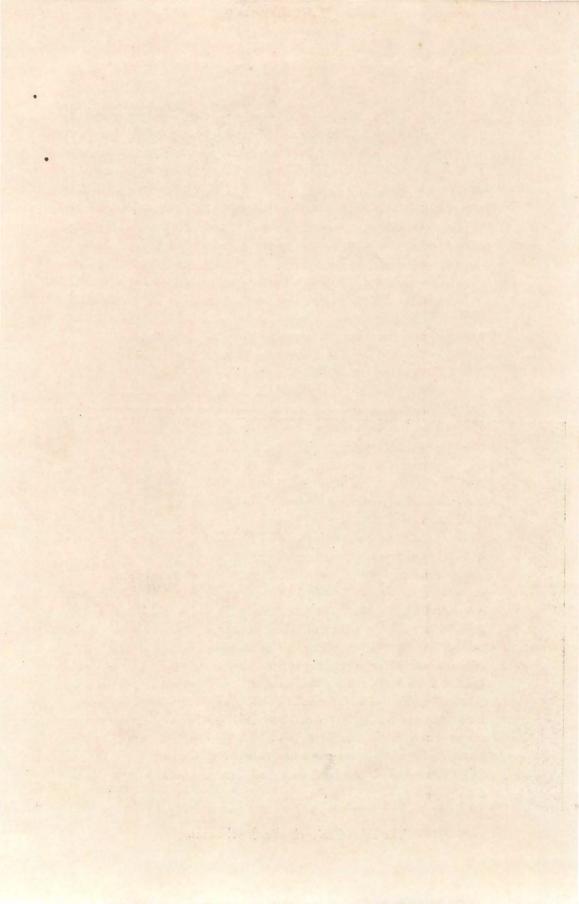
The Banded Krait feeds almost entirely upon other snakes.

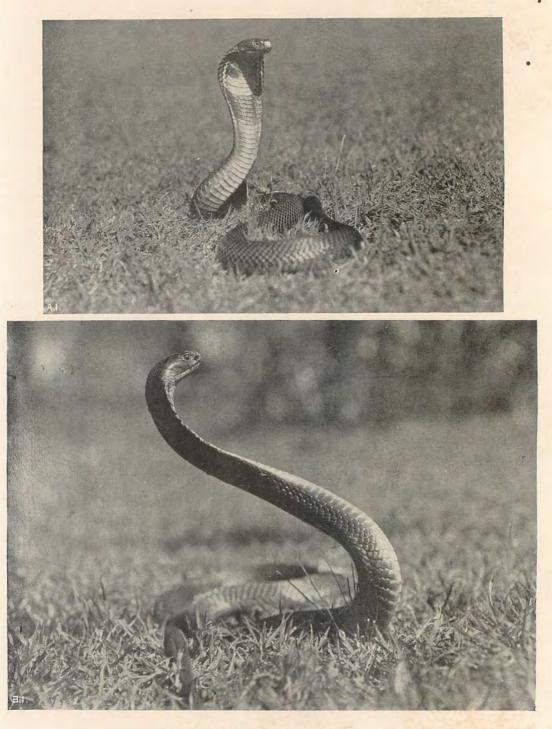
Length. This snake grows to a great size in Bangkok. I have seen seven specimens over 6 feet in length. One of the largest ever recorded was mentioned previously in this *Journal* (No. 1, Vol. I, p. 58), and I have since seen another almost as long. It was killed at Klong Rangsit and measured 1955 mm. in length.

Poison. No authentic case of a bite from this snake in man has yet been recorded, but the poison appears from experimental evidence to be considerably less toxic than Cobra venom, and is possibly not fatal to human beings.

Color. The coloration of the Banded Krait is so distinctive that it is quite impossible to mistake it for any other snake in Bangkok. It is commonly described as being marked with alternate broad bands of black and yellow, which completely encircle the body. In the majority of Bangkok specimens, however, except in very large ones, this yellow color is buff or dirty buff above, pale yellow below, the two shades meeting with a distinct line of demarcation at the costo-ventral junction. These yellow bands number from 17 to 23 on the body and from 3 to 4 on the tail. Many Siamese specimens have in addition a variable patch of black upon the belly in some of the ventral bands. Wall mentions this as occurring in a specimen which he examined in Hongkong, but it does not appear to occur elsewhere. There is a black mark upon the top of the head, beginning between the eyes and widening and extending backwards into a saddle-shaped mark upon the neck. The blunt and enlarged tip to the tail which is characteristic of this snake in adult life, I have not found in the young. The whole snake has a fine polished appearance.

Distribution. India, Burma, and South China to the Malay Archipelago.





The Cobra (Naia tripudians), poisonous.

37. Naia tripudians. The Cobra.

Siamese 9 1991 (ngu hao).

Various other names are also used, such as \P in AN (ngu hao dong), \P in ND (ngu hao maw), \P in ADD \P in in (ngu hao dork chan), according to markings and coloration. The last named term, meaning the sandal-wood flower, but also used to designate any small round mark, is applied generally to those specimens that have a well-defined circular mark upon the hood.

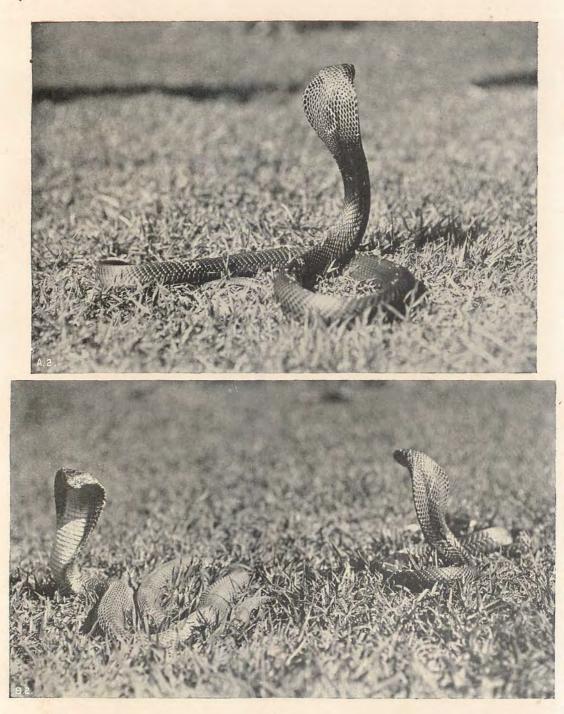
The name "ngu hao", or the snake that barks, has no doubt been given to it on account of the characteristic spitting or explosive hiss which it makes when angered.

The Cobra, fortunately for Bangkok residents, cannot be considered a common snake, although it is by no means rare. In the country round it is more plentiful, and in some localities, (notably at Klong Rangsit and Pachim, and probably also at many others) is very plentiful. In Bangkok it may be found almost anywhere, being more abundant upon the West side of the river than upon the East. The many old and disused buildings there harbour a considerable number of them, among the foundations of which they find easy and convenient In the country districts, away from habihiding places. tations, they live upon the open grass-lands and in the paddy fields, finding shelter in holes in the earth, chiefly those that have been made by rats. In those places, as the country is completely under water for several months in the year, they must be flooded out of their homes, and forced, for the time, to lead a semi-aquatic existence.

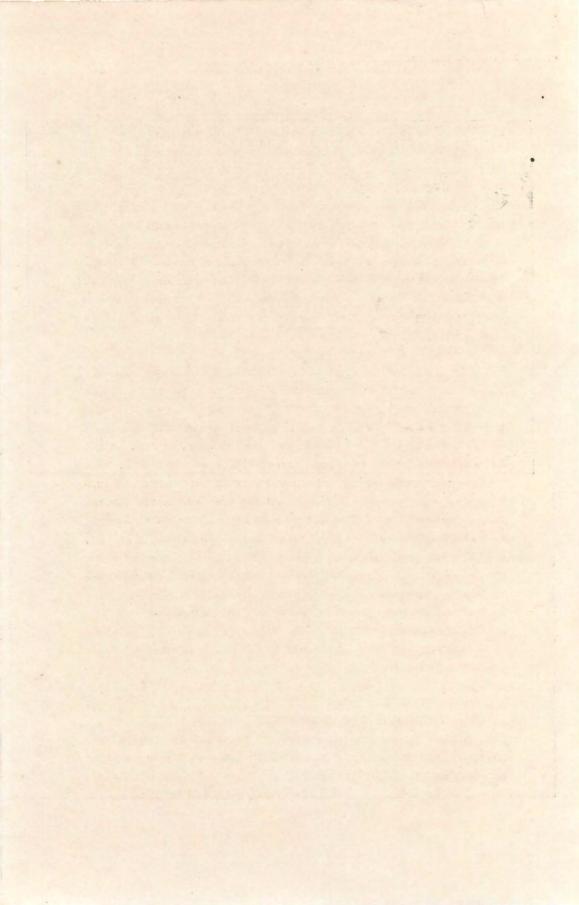
It is astonishing how few Europeans in Bangkok, with the exception of those who have come from India, where they have been treated to displays by snake charmers, have ever seen a cobra alive. Under ordinary circumstances, when moving about in search of food, or when lying in repose, the so-called "hood" is not expanded at all, but lies as a loose fold of skin on either side of the neck, adding but little to its thickness, and hardly noticeable. It is only in the presence of danger, when suddenly encountered and confronted, that the characteristic pose is assumed, with the fore part of the body perpendicularly erect and the "hood" spread out. This menacing attitude however, threatening as it may appear, usually goes no further, and the snake if left undisturbed, will soon quieten down and glide away. I have never seen a cobra take the offensive, and it will not, I believe, attempt to bite one, unless thoroughly angered or actually seized. The accompanying illustrations, of specimens that had been recently caught, were taken upon an open lawn. They were photographed at a distance of from 3 to 4 feet, and are a further testimony, I am sure the photographer will not object to my saying so, more to the nonaggressive disposition of the creature, than to his own courage. Adult cobras when met with in their native haunts, generally seek refuge in immediate flight, and disappear into the nearest shelter available. Young ones are more aggressive. They are very alert, inclined to bite readily, and undoubtedly more dangerous.

Cobras live well in captivity and are voracious feeders. Their natural food is small mammals, (chiefly rats), frogs, toads, and sometimes other snakes. My own experience with them in captivity is unusual, in that they feed almost entirely upon toads. The reason of this is not one of preference, as they will readily devour dead rats and frogs if placed before them, but simply because they are not sufficient_ ly quick to catch anything else. Even the slow-hopping toad is not caught with any ease and certainty. I have watched them when feeding on numberless occasions, and also when angered and fighting with each other in their cage, and so often do they miss and go wide of the object at which they strike, that they given one the impression of having defective sight. Or else they are particularly clumsy. In dealing with toads they do not attempt to make any use of their poison, but proceed at once to swallow the creature alive.

Poison. Upon the rare occurrence of cases of cobra bite in Bangkok, I have already remarked (No. 1, Vol. I, p. 6). They occur more frequently in the outlying districts, as the records of the Pasteur Institute, during the short time in which it has been opened, will show. Dr. Robert who is in charge, told me that all that he had seen had occurred at night, and were due to the snake having been accidentally trodden upon in the dark. Dr. Yai Sanitwongse also informs me, that since the decree has been issued for the destruction of Java weed in this country, quite a number of people have been bitten at Klong Rangsit. The snakes, it would appear, during the hot and



Cobras.



dry months of the year, retire to the canals, for cobras drink freely and do not like to be long without water. Here they find excellent shelter, and can lie entirely concealed among the dense packs of this weed, and the people in dragging it out to destroy it, accidentally seize the snakes and so get bitten.

The treatment of cobra bite is not within the scope of this article, but I may mention briefly, that the permanganate of potash cure, so strongly boomed a few years ago, has shown itself to be of much less value than was originally claimed for it. The only antidote at present known of any real benefit, is antivenene, a large stock of which is now always on hand at the Pasteur Institute. Ligature above, and deep incisions at the seat of, the bite, should of course always be performed at once.

Length. 1830 mm.

Color (in life). Above.—From darkish olive-brown to black. Hood usually adorned with a clear, pale yellow or whitish circle or oval. It may be incomplete and indistinct, but is seldom entirely absent. Across the back, just behind the hood, usually a pale chevron or oval mark or only a plain bar, and sometimes one or two or more similar marks farther down the body. Below.—Throat and commencement of body yellow, rest of belly and tail grey or pale brown. Hood usually with a black spot on either side, and a dark transverse bar behind. The transverse markings across the back, may be continued as yellowish bars across the belly. The young when first born are black, usually with a high polish like a well polished boot. As they grow up they become lighter. The markings upon the hood are even more variable than I have mentioned, and it would be unnecessary to describe them all. This description applies to Bangkok and the neighbouring country only.

Distribution. Southern Asia, from Transcaspia to China and the Malay Archipelago.

Family. AMBLYCEPHALIDÆ.

38. Amblycephalus moellendorfii.

Count Gyldenstolpe records a specimen of this little snake from Bangkok, and another was recently found in a garden in the Suriwongse Road.

Distribution. S. China, Indo-China, Siam, Tenasserim.

Family. VIPERID.E.

39. Vipera Russellii. Russell's Viper.

Siamese 3 UNO 127 (ngu maaw sao).

The origin of the words "maaw sao," meaning "sleepy cat," is obscure, but may refer to the lethargic disposition of this creature.

As far as I am aware, the only specimen of this poisonous snake that has been found in Bangkok was one killed on the grounds of the Sports Club several years ago. It has been met with in several localities near Bangkok, but appears to be nowhere common. My collector once caught one in the roof of an attap shelter upon a raft at Sam Kok, an unusual position to find this snake in, as its corpulent build does not at all fit it for climbing. It is no doubt in this way, namely drifting down the river upon some log or floating structure, that most of them find their way to us from the North. Russell's Viper is not usually accounted a lover of the water, and the wet paddy plains of this part of the country, are probably not to its liking.

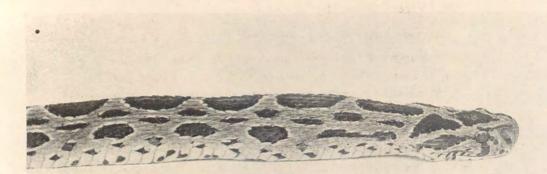
In disposition it is sluggish in the extreme, and will usually not attempt to move out of the way when met with. The three occasions that I know of, when snipe shooters have encountered it, all confirm this, the snake making no attempt to escape and allowing itself to be shot at close quarters.

The only specimen I ever kept alive, fed readily upon mice.

Poison. The poison of Russell's Viper, although less toxic than cobra venom, is fatal to man, death occurring in the cases which have been recorded, in about 24 hours or longer.

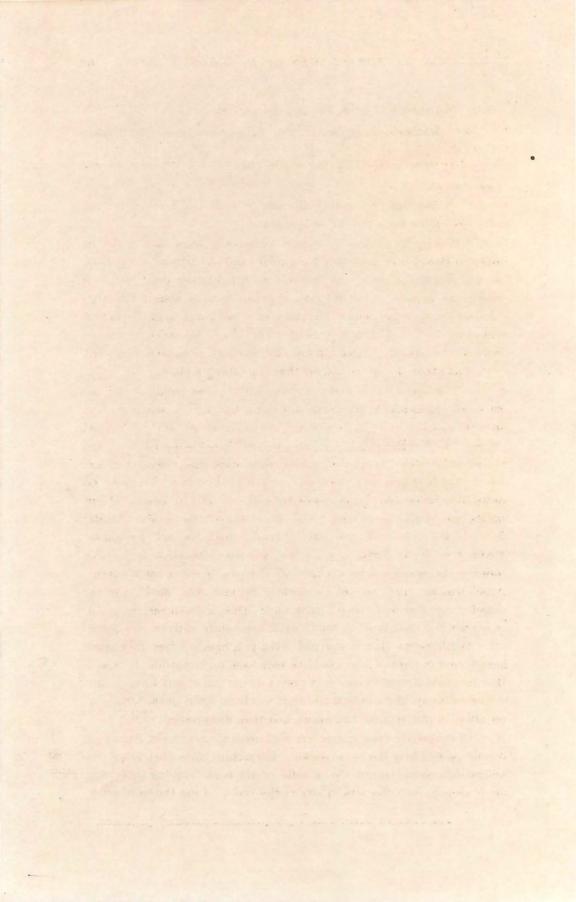
Length. 1600 mm.

Color (in life). Light brown above, with three longitudinal chains of large dark brown oval spots, the dorsal row somewhat larger than the two lateral ones. The spots have a black periphery and are edged with white. Between them are two other series of spots, considerably smaller and much elongated, and others adorn the flanks lower down. Belly white, with dark semi-lunar spots. Head with dark symmetrical markings, including a lozenge shaped patch upon the forehead, another patch below the eye, and a streak from the eye to the angle of the mouth. The photograph is excellent. Upon the superficial resemblance of this snake to the harmless *Dipsadomorphus multimaculatus* I have already remarked. Journal Nat. Hist. Soc., Siam. Vol. I. No. 3.



Russell's Viper (Vipera Russelli), poisonous.

The Common Green Tree Viper (Lachesis Gramineus), poisonous.



Distribution. India, Ceylon, Burma, Siam.

40. Lachesis gramineus. The Common Green Pit Viper.

Siamese งูเขียวหางใหม้ or หางแดง (nyu khico hang mai or hang daang).

"Hāng mai," meaning literally "burnt tail", refers to the rusty coloration upon the tail of this snake.

It is by far the most common poisonous snake that is to be found in Bangkok, frequenting the gardens and plantations everywhere, usually arboreal in its habits, but seldom found at any great elevation above the ground. One at least, is generally to be seen in the large bamboo clump in my compound, and I have had many opportunities of watching the habits of these snakes. The same one seldom remains there for any length of time; a few days perhaps, or sometimes a few weeks, and then it is gone and another one takes its place.

They are very sluggish creatures. When discovered they seldom endeavour to escape, or even show any signs of alarm, but remain quietly in their position, eyeing one steadily. Sometimes one will lift its head fiercely, as if protesting at the disturbance. Even when actually dislodged from their post, they preserve the same calm demeanour, and move away in a quiet and leisurely manner. They can, however, be extremely fierce, and when once roused will bite furiously. Their habits are strictly nocturnal, and they do not move about until it is quite dark. On the other hand, they are not particular where they lie up during the day, and any shady bough or nook, provided it is not actually exposed to the sun, seems to satisfy them. After feeding they remain completely at rest until their meal is digested, and this may occupy many days One, I remember, remained in exactly the same position for 15 days, apparently without moving at all. Another one that I watched, lived in a hole in a tree, and when hungry and in need of food, could be seen each night outside its home. How far afield it went in search of prey I do not know, but I never saw it very far away, and in the morning it was back again in the hole. It remained in this spot for ten weeks, and then disappeared.

In captivity these vipers live well, feeding upon mice, frogs and lizards, particularly the house gecko. In catching mice, they seize the animal if possible across the middle of the back, burying their long fangs deeply into the vital parts of the body. I use the word seize, for they do not strike and let go, but continue to hold on, and do not relax their grip, until the victim is quite dead. A mouse caught in this way dies with extreme rapidity, generally in two or three minutes, and beyond a few faint convulsive kicks does not struggle at all. The actual paralysing factor in this case is no doubt shock. If perchance, from the snake not being sufficiently quick, some other part of the animal is caught, such as a limb or the head, death is by no means so rapid, and the mouse usually manages to shake itself free and escape. The snake then goes off in search of it, but appears to have no sense of direction, and in a wild state, if the animal had been able to travel any distance before collapsing, would certainly not be found.

Poison. The poison of this snake is almost entirely local in its action. It is fatal to small mammals, but can hardly be considered dangerous to human beings. I see a fair number of patients who have been bitten by this snake every year, and their symptoms vary in intensity from those with slight swelling round the bitten part and practically no pain, to others with considerable swelling and very severe pain. General symptoms are entirely absent, except for some occasional slight feeling of giddiness, which may be due to a very natural trepidation on the part of the patient. In my own case, which may be looked. upon as a severe one. I was bitten in the terminal joint of the right thumb whilst incautiously handling the snake. I had seized the it too far down the neck, and it was able to turn its head round and bite me. Fortunately it could only reach me with one fang, but that one went deeply in. The pain was intense and immediate, as if a red hot needle had been thrust into me, and it continued with great severity for 24 hours. Sleep was impossible without opium. The whole hand as far as the wrist swelled rapidly up, and at the actual seat of the bite, a small area, as big as a pea, became necrotic and ultimately sloughed away. The swelling of the hand subsided within a week, but in the thumb itself it persisted much longer, and it was six weeks before the wound had healed and I had recovered the full use of my hand. Treatment in this case consisted in applying a ligature to the base of the thumb until the pain from the constriction became unbearable, and in scarifying the wound and rubbing in crystals of permanganate of potash. Owing to the difficulty, however, of operating upon myself with my left hand.

this part of the treatment was not sufficiently deep to be of any value.

Length. Up to 870 mm.

Color (in life). Above verdant green, below pale green, yellowish green, bluish green or light blue. There is usually a well-marked flank line, upon the last row of the costal scales beginning at the neck and running the entire length of the body and tail. It may be white, yellowish or pale blue in colour. Dorsum of tail and tip, reddish brown. Interstitial skin blackish, the colour often extending on to the adjacent scales and forming indistinct dark cross bars. Iris golden yellow with vertical pupil.

This snake is well known to the Siamese, and its local name may be relied upon.

Distribution. From India to China and the Malay Archipelago.

This concludes the Snakes of Bangkok. Three other species will probably have to be recorded, namely, *Dryophis prasinus*, *Hypsirhina plumbea*, and *Typhlops siamensis*. The two former are fairly common in the country districts outside the city, and there appears no reason why they should not be found in Bangkok. Of the earth snake, *T. siamensis*, only one specimen is so far known, obtained by M. Mouhot many years ago. Last year, however, Major Sprater was given a snake, caught at Bangsue, which I considered to be this species, in spite of some slight differences in lepidosis. He took it home with him to compare with the type specimen in the British Museum but unfortunately the War broke out before he was able to do so.

KEY TO THE SPECIES DESCRIBED.

The accompanying key will enable anyone, with a little care and trouble, to identify all the species described in the previous articles. It is entirely an arbitrary key, and is of no value elsewhere.

Method of using the key. Count the number of costal scales across the middle of the body, as shown in the diagram opposite p. 5 of this volume, and compare it with the color description given. Note that the middle of the body is mid-way between the head and the vent, and not the head and the tip of the tail. The characters of the scales given, although not essential to this list, will be of further assistance. The "keel" is a more or less pronounced ridge down the centre of a costal scale, and is an important feature in identification.

THE SNAKES OF BANGKOK.

Costal scales.	Character of scales.	Name of Species.	Page in Journal
		Ventral shields enlarged	
18 15 " " " " " " " " " " " " " " " " " "	Smooth Smooth Vertebrals enlarged } " Partly keeled Smooth " " Smooth Partly keeled Vertebrals enlarged } Keeled " Smooth Smooth Smooth Smooth Smooth	Dryocalamus Davisonii Xenopeltis unicolor Zamenis korros Dendrophis pictus Dryophis mycterizans Bungarus fasciatus Zamenis mucosus Chrysopelea ornata Psammophis condanarus Lycodon aulicus Simotes Mouhoti Simotes taeniatus Coluber radiatus Dipsadomorphus multimaculatus Tropidonotus piscator Tropidonotus piscator Tropidonotus subminiatus Naia tripudians Simotes cyclurus Hypsirhina enhydris Lachesis gramineus Hypsirhina bocourti Vipera Russelli Herpeton tentaculatum	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
20 21-23	Smooth Smooth "Tubercular	Python reticulatus Ventral shields not enlarged Typhlops braminus Cylindrophis rufus Acrochordus javanicus	. 8 . 10

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