

Chapter 9

Reptiles of Na Haeo: a preliminary survey

Olivier S. G. Pauwels and Philippe J. R. Kok

Introduction

Although major works have been dedicated to the Thai herpetofauna (for instance the monographs on Thai lizards and snakes by TAYLOR, 1963 and 1965 respectively), much work remains to be done. Species are still regularly added to the national list, especially in northern (notably Chiang Mai) and northeastern (notably Loei) provinces which are still largely unprospected and whose herpetofauna interestingly shows marked affinities with that of the northern Indochinese mountain ranges (CHANHOME *et al.*, 2001; DAVID & PAUWELS, 2000; PAUWELS *et al.*, 2001). Among them are a number of species new to Science. Several taxa are known in Thailand only from Loei area (notably the colubrid snakes *Amphiesma khasiense*, *Oligodon dorsalis*, and *Opisthotropis boonsongi*) and future field research in this area will undoubtedly bring additional valuable results.

In the course of a collaborative biodiversity study project between the Srinakharinwirot University (SWU) at Bangkok and the Royal Belgian Institute of Natural Sciences, a short field trip has been dedicated to the study of the Reptile fauna at the SWU Field Research Station (SWU-FIRS), Na Haeo District, Loei Province. Our aim is to provide here a preliminary Reptile species list, as a basis for future systematic inventories in the station.

Methods

The survey took place from 11th to 26th November 1998, i.e. during the winter. Two different methods of investigation were used: systematic sampling survey and visual encounter survey (HEYER *et al.*, 1994 for details).

Results

The following list of Reptile taxa includes all species currently recorded from Na Haeo, and is based both on our own observations in November 1998 in the SWU-FIRS and on the few available literature data on Na Haeo herpetofauna (TAYLOR & ELBEL, 1958).

Manuscript received in 2001

Chapter published in: *The Environment of Na Haeo, Thailand. Biodiversity, non-timber products, land use and conservation*. L. Ampornpan and S. S. Dhillion (Editors). Craftsman Press Ltd., Bangkok, Thailand, 2003. ISBN 974-91734-1-4

Literature data concerning other localities in Dan Sai District or Loei Province were not taken into account. Within each family, genera and species are arranged by alphabetical order. Data on general distribution for each species are drawn from the works of CHANARD et al. (1999), COX (1991), MANTHEY & GROSSMANN (1997), TAYLOR (1963, 1965), and TAYLOR & ELBEL (1958).

Lacertilia

Gekkonidae:

Gekko gecko (Figure 1):

It is the largest gekko of Thailand, reaching a total length of 35 cm, often heard at night when it emits the lugubrious call, which gave its common name *took-kae*. It is easily identifiable by its large and wide head and its bright coloration: dorsum gray to bluish-gray with numerous reddish and whitish spots, tail with contrasted annuli. We found this species on all buildings and on tall trees at Na Haeo field station. It is recorded from most Thai provinces, and occurs throughout eastern tropical Asia.

Hemidactylus frenatus:

This is the commonest gekko in Thailand, found in most houses throughout the country; this species occurs in much of tropical Asia. Its total length does not exceed 14 cm. It can be distinguished from other small Thai geckos by the whorls of spiny tubercles on tail, the presence of rounded tubercles intermixed with small granular scales on the back, and its inner toe bearing a large claw. We observed it every evening in numbers around the neon lights on the buildings of the field station.

Agamidae:

Acanthosaura lepidogaster (Figure 2):

This forest species is easily identifiable by its brownish colour, its dorsal crest, its large black diamond-shaped spot on nape not connected to spots on the shoulders and by having the outer part of tympanum covered with small scales. Its total length is about 25 cm, of which 9 for the body. It is found on the ground or on small trees in forested areas. It seems uncommon around the field station, since we encountered only a single specimen during our survey. The range of this species includes northern and western Thailand, Vietnam, Cambodia, Myanmar, Laos and southern China.

Calotes emma:

This beautiful species, reaching a total length of 35 cm, of which 10 for the body, is recognisable by its greenish colour, its high spines on the dorsal crest just behind the head, and its lateral body scales which point backwards and upwards. It is found on bushes and trees in forested areas and, according to our observations, it is quite common around the field station. This species is recorded from Assam (India) to Malaysia.

Calotes versicolor (Figure 3):

This familiar diurnal species, found in gardens and cultivated areas all over Thailand, reaches a total length of 38 cm (10 for the body). Like *Calotes emma*, its lateral body scales point backwards and upwards, but it can be distinguished from that congener by the absence of fold with small dark scales in front of the shoulder, and by its brownish colour. These lizards can very quickly change their colour, according to their emotions. We found them in numbers on tall grasses and on bushes in the garden around the field station. This species is widespread, ranging from south-eastern Iran to Indonesia.

Scincidae:

Leiopisma eunice:

This small and slender ground species (total length 13 cm) found in central and northeastern Thailand, is distinguished from several sympatric skinks similar in coloration by subtle scale characters, notably: 32 to 34 scale rows around midbody, a transparent disc on the eyelid, and the absence of supranasal scales. We found it in daytime on the ground among leaves in secondary forest near the headquarters of the station.

Lipinia vittigera:

This little skink is unmistakable by its bright coloration: the body is glossy black with longitudinal yellowish stripes, and the tail is orange. This beautiful species can be seen basking on tree trunks, especially on tall trees near streams. Its extreme rapidity makes it difficult to approach. We observed several specimens around the headquarters of the field station. The distribution of this species covers Myanmar (Tenasserim), Thailand, Laos, southern Vietnam, West Malaysia and Indonesia.

Mabuya macularia:

The adults of this moderately sized terrestrial skink (total length 16 cm) show a reddish orange throat. The body of this wide-ranging species (from Pakistan and India to northern Peninsular Malaysia) is broad and flat, and the main scale characteristics are the absence of a transparent eye disc, five, seven or nine keels on the dorsal scales, and 30 to 34 scale rows around midbody. We found many specimens by day around the station on the ground in secondary forest.

Mabuya multifasciata:

This large and heavy-bodied skink (total length to 35 cm) is extremely common, being recorded from most Thai provinces, and can be often seen basking in gardens and cultivated areas. It is characterised notably by 3 to 5 keels on its dorsal scales, 30-34 midbody scale rows, the presence of a postnasal scale, and the absence of a transparent eye disc. We found numerous specimens around the station, in secondary forest and gardens. The species is to be found from eastern India to New Guinea and Philippines Islands.

Sphenomorphus maculatus:

This widely distributed diurnal species (occurring from eastern India through most of southeast Asia) is very similar to *Leiolopisma eunice* from which it can however be distinguished by its larger size (total length 16 cm), its less elongated body, and 38 to 42 scale rows around midbody; we found both species syntopically on the ground in secondary forest around the field station.

Tropidophorus cf. laotus (Figures 4-5):

This aquatic skink is certainly the most remarkable lizard species recorded to date from Na Haeo field station. We found numerous specimens in the waterfall and the stream behind the headquarters. Its total length is about 18 cm, and it is remarkable by its exposed, superficial tympanum, its scaly eyelid, its two large preanal shields, 36 midbody scale rows and the absence of supranasal scales, and of course by its exclusively aquatic habits. This species has a limited range, it has been reported from Nong Khai and Phu Kading Mt. (TAYLOR, 1963 : 992) and Laos.

Lacertidae

Takydromus sexlineatus ocellatus:

This species is very interesting in that it is the only representative of its family in Thailand. It can be observed in daytime in tall grass in open areas. Its extremely long tail readily distinguishes it: although the adult body length is about 7 cm, the total length reaches 36 cm! Contrary to all other Thai lizards, the back is covered with large keeled scales while the flanks bear fine granular scales. We found a few specimens in grass fields near the station. The global distribution of this lizard includes India (Sikkim and Assam), China, Myanmar, Thailand, Laos, Cambodia, Vietnam, Peninsular Malaysia and Indonesia.

Serpentes

Colubridae

Boiga cyanea:

This nocturnal arboreal snake has a very elongated body (total length to 190 cm), and its coloration is unique among Thai snakes: adult specimens show a uniformly olive-green body with a yellowish belly and a large blue spot on throat, hence its scientific name. Its main scale characteristics are: 21 midbody dorsal scale rows, 237-257 ventral scales, anal scale single, and 124-158 divided subcaudal scales. It has mild venom but is not dangerous to man. We did not encounter this species during our survey, but it has been mentioned by TAYLOR & ELBEL (1958: 1143). Its whole distribution includes India, Myanmar, southern China, Thailand, Vietnam, Laos and Cambodia.

Boiga ocellata:

This recently described species (1973) reaches a total length of 180 cm, and although its body shape is very similar to that of the preceding species, notably by its slender body and its head well distinct from the body, its coloration is very different: the body is greyish-brown with transversal black crossbars and white spots on flanks. Its main scale characteristics are: 23 midbody dorsal scale rows, 247-270 ventral scales, anal scale single, and 116-129 divided subcaudal scales. It has mild venom but is not dangerous to man. We did not observe the species during our study, but it has been quoted from Na Haeo by TAYLOR & ELBEL (1958: 1145), under the name *Boiga cynodon*, a closely related species.

Chrysopelea ornata ornatissima (Figure 6):

This elegant snake, with its black and green contrasted pattern, is unmistakable. It reaches a total length of 150 cm. This diurnal species can be regularly observed hunting gekkos on walls and inside houses. It often hides in tree holes, and has been encountered in most Thai provinces. Its main scale characteristics are: 17 midbody dorsal scale rows, 213-234 ventral scales, divided anal scale, and 110 to 142 divided subcaudal scales. We found a single specimen in a tree hole a few meters from the headquarters of the station. It is not venomous and is to be found from India, Sri Lanka, Myanmar to Indonesia and Philippines Islands.

Dendrelaphis pictus:

This species is one of the most common snakes in Thailand. It reaches a total length of 120 cm and is recognisable by its black postorbital stripe, its cream stripe on the first two lateral body scale rows bordered by black stripes, and its bronze dorsum colour. Its main scale characteristics are: 15 midbody dorsal scale rows, 163-200 ventral scales, divided anal scale, and 112 to 169 divided subcaudal scales. It lives in bushes where it hunts mainly frogs. It is not venomous. We found a single specimen in a hollow dead tree trunk in the afternoon near the headquarters of the station. Its distribution extends from India to Philippines Islands.

Oligodon fasciolatus:

Like the other members of its genus, this species shows a typical dark chevron mark on the nape of the neck. Its main scale characteristics are: 21 or 23 midbody dorsal scale rows, 170-195 ventral scales, single anal scale, and 42 to 58 divided subcaudal scales. It is to be found in secondary forest. It is not venomous. This species, not encountered during our study, has been mentioned by TAYLOR & ELBEL (1958: 1137). Its whole distribution ranges from Myanmar, Thailand, Laos, Cambodia to Vietnam.

Pareas carinatus:

This very little nocturnal snake (total length under 60 cm) has a peculiar blunt head, a strongly compressed body; its colour is brown with dark markings, and with an X-shaped spot on the neck. Its main scale characteristics are: 15 midbody dorsal scale rows, 158-206 ventral scales, single anal scale, and 53 to 99 divided subcaudal scales. Interestingly, it is an unusual snake in that it feeds exclusively on slugs and snails. It is not venomous. No specimen was encountered during our study, but this species has been mentioned by TAYLOR & ELBEL (1958: 1128). Its range includes Myanmar, Thailand, Vietnam, Laos, Cambodia, China (Yunnan), East Malaysia and Indonesia.

Ptyas korros:

This large greyish diurnal snake is very common all over Thailand and occurs from India (Assam) and Myanmar, Laos, South China, Cambodia, Malaya to Sumatra, Java and Borneo. We quote this species from Na Haeo on the basis of two specimens we saw sold as food in the Na Haeo market and said to be locally collected.

Rhabdophis subminiatus:

This diurnal and nocturnal snake shows a peculiar coloration: in the adults the head is olive, with a red neck, and the dorsum is brownish-olive. It reaches a total length of 130 cm. Its main scale characteristics are: 19 midbody dorsal scale rows, 132-175 ventral scales, divided anal scale, and 63 to 89 divided subcaudal scales. Although no fatalities have been reported, the venom has already caused severe symptoms by humans, and this snake must thus be regarded as dangerous. We observed a single specimen in a cultivated area. This snake lives in a wide variety of habitats, from deep forest to gardens, and is recorded throughout Thailand to western Indonesia.

Xenochrophis flavipunctatus:

This snake, active by day and night, is by far the most often encountered species in Thailand, and occurs in India, southern China, West Malaysia, Laos, Cambodia, Vietnam and Indonesia. It shows two black postorbital stripes, a black stripe bordering each ventral scale, and a dark olive dorsum with regular black markings. Its total length is about 120 cm. Its main scale characteristics are: 19 midbody dorsal scale rows, 122-158 ventral scales, divided anal scale, and 70 to 97 divided subcaudal scales. It is not venomous. We found it common at SWU-FIRS.

Viperidae

Trimeresurus macrops (Figure 7):

This recently described green pitviper is very common in central and northern Thailand, and reaches a total length of about 70 cm. It has very large eyes, hence its scientific name. Its main scale characteristics are: large supraocular scales, 21 midbody dorsal scale rows,

160-175 ventral scales, single anal scale, and 49-74 divided subcaudal scales. It is typically found near the streams on branches overhanging the water from where they hunt frogs. An important population lives on the bushes along the waterfall and the stream behind the Na Haeo field station. *T. macrops* is a venomous species.

Conclusion

The herpetofauna of Na Haeo and direct surroundings is known to date to include 21 species belonging to 6 families (12 lizards and 10 snakes), among them one is of special interest: *Tropidophorus cf. laotus*. We have surveyed the SWU-FIRS only two weeks, and moreover during the dry season, which is not the best period for a biodiversity study, since many species are then less active and thus more difficultly encountered than during the rainy season. Future fieldwork, especially during the rainy season, will undoubtedly increase this species list. However, it should be noted that most of the species we encountered during our survey are wide-ranging taxa, which are to be found in disturbed areas, due to the fact that the station is surrounded by degraded secondary forest. Several of the forest species listed by TAYLOR & ELBEL.(1958). might have now disappeared from Na Haeo due to the loss of their habitat during the last decades. Moreover, among other Reptiles, the lizards *Calotes* spp. and the snake *Ptyas korros* are part of the diet of the Na Haeo villagers.

Acknowledgements

We are grateful to Dr. La-aw AMPORN PAN and Prof. Shivcharn S. DHILLION for inviting us to participate to the biodiversity research project at Na Haeo. We warmly thank Dr. Georges LENGLET (IRSNB) for working facilities, Mrs Chucheep CHIMSUNCHART (Phetchaburi) and Dr. Patrick DAVID (MNHN, Paris) for constructive discussions, and Dr. Georges COULON (IRSNB) for companionship in the field. Our field trip has been made possible thanks to a grant from the Fund King Leopold III through the IRSNB.

Reptiles of Na Haeo: a preliminary survey



Fig 1 *Gekko gecko*



Fig 2 *Acanthosaura lepidogaster*



Fig 3 *Calotes versicolor*



Fig 4 *Tropidophorus cf. laotus*



Fig 5 *Tropidophorus cf. laotus*



Fig 6 *Chrysopelea ornata ornatissima*



Fig 7 *Trimeresurus macrops*

Photographs by Philippe J. R. Kok

Literature cited

- CHAN-ARD, T., GROSSMANN, W., GUMPRECHT, A. & SCHULZ K-D. 1999. *Amphibians and Reptiles of Peninsular Malaysia and Thailand. An Illustrated checklist. Amphibien und Reptilien der Halbinsel Malaysia und Thailand. Eine illustrierte Checkliste.* Bushmaster Publ., Wuerselen: 1-240.
- CHANHOME, L., PAUWELS, O.S.G., JINTAKUNE, P. & DAVID, P. 2001. Catalogue of the Herpetological Collection of the Queen Saovabha Memorial Institute, Thai Red Cross Society, Bangkok. Part I. Snakes (except Elapidae and Viperidae). *Bulletin of the Maryland Herpetological Society*, 37 (2): 49-72.
- COX, M.J. 1991. *The snakes of Thailand and their husbandry.* Krieger Publ. Co., Malabar, Florida: i-xxxviii + 1-526.
- DAVID, P. & PAUWELS, O.S.G. 2000. Book review. T. Chan-ard, W. Grossmann, A. Gumprecht & K.-D. Schulz. *Amphibians and Reptiles of Peninsular Malaysia and Thailand. An illustrated checklist. - Amphibien und Reptilien der Halbinsel Malaysia und Thailand. Eine illustrierte Checkliste.* *Russian Journal of Herpetology*, 7 (1): 87-90.
- HEYER, W. R., DONNELLY, M. A. & MCDIARMID, R. W, HAYEK, L.-A. C., & FOSTER, M. S., eds. 1994. *Measuring and monitoring biological diversity. Standard methods for amphibians.* Biological Diversity Handbook Series. Washington D.C. : Smithsonian Institution Press : 1-320.
- MANTHEY, U. & GROSSMANN, W. 1997. *Amphibien & Reptilien S dostasiens.* Natur und Tier-Verlag, Münster: 1-512.
- PAUWELS, O.S.G., DAVID, P., NUTPHAND, W. & CHIMSUNCHART, C. 2001. First record of *Xenochrophis punctulatus* (Günther, 1858) (Serpentes: Colubridae: Natricinae) from Thailand. *Hamadryad*, 26 (2): 259-264.
- TAYLOR, E.H. 1963. The lizards of Thailand. *Univ. Kansas Sci. Bull.*, 44: 687-1077.
- TAYLOR, E.H. 1965. The serpents of Thailand and adjacent waters. *Univ. Kansas Sci. Bull.*, 45 (9): 609-1096.
- TAYLOR, E.H. & ELBEL, R.E. 1958. Contribution to the Herpetology of Thailand. *Univ. Kansas Sci. Bull.*, 38 (2): 1033-1189.