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**Herpetological investigations in Phang-Nga Province,  
southern Peninsular Thailand,  
with a list of reptile species and notes on their biology**

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**Preliminary investigations in Phang-Nga Province, southern Peninsular Thailand, conducted during a collaborative project between the Royal Forest Department of Thailand and the Muséum national d'Histoire naturelle, provided a total of 92 reptile species (11 turtles, 1 crocodile, 32 lizards and 48 snakes), of which 46 are new records for the province. The list is based on museum specimens, literature records, and observations and new material gathered in the field in the course of this research project. The records of *Gekko monarchus*, *G. smithii*, and *Tropidophorus robinsoni* constitute important range extensions. The unconfirmed presence of several additional species is discussed. Data on biology of collected specimens and local vernacular names are provided when available.**

## INTRODUCTION

The Province of Phang-Nga is situated on the western coast of southern Peninsular Thailand, just south of the Isthmus of Kra. Its western and southern limits are bordered by the Andaman Sea, whereas on the north and east it is bordered, from north to south, by the provinces of Ranong, Surat Thani and Krabi, respectively. It is connected to the south by a bridge with Phuket Island, which is a continuation of the land mass of Phang-Nga Province. The surface of the province is 4170 sq. km with 239 km of coastline; it is divided into 8 districts: Khuraburi, Takua Pa, Kapong, Tap-Phut, Muang, Thai Muang, Takua Thung and Ko Yao. The main economical activities are rubber, fruit and palm oil plantations, fishery and coastal aquaculture.

The relief of the province can be broadly divided into a western and southern coastal plain, and a region of hills and low mountains covering a major part. The coastal plain, narrow along the west coast, is more developed in its southern part, although it is intersected with low hills (highest point at about 430 m a.s.l.), and especially on the south-east of the province, where the lowlands, transversed by several short estuaries that meet the sea via numerous mangroves and mudflats. The large hilly part, which covers nearly the whole of the central, eastern and northern part of the province, is made of moderately elevated hills (maximum elevation 1080 m a.s.l.) is, however, deeply entailed west-east by a wide valley and nearly divided into two parts, the southern portion culminating at 655 m a.s.l.. Phang-Nga hills are located at the southern end of the long, narrow mountain chain coming from north-west of Thailand, which can be described as the backbone of Peninsular Thailand. The climate is typically wet tropical, with maximal average temperatures included between 30 and 32°C throughout the year, the corresponding mean minima ranging from 23 to 25°C (with minima not below 17°C). The year can be divided into a short, dry season from mid-December to March (with up to 80 mm of precipitation, but less than 40 mm in January-February), and a marked rainy season from the end of April to November giving more than 200 mm of rain per month, with two peaks in May and August-October, respectively (up to 325 mm of precipitation in September). The total annual height of precipitation is around 2500 mm. The water temperature is around 27-29°C throughout the year.

In spite of the dramatic scenery offered by its geological relief, i.e. spectacular abrupt limestone monoliths which result from a drowned karstland, abundantly shown in movies and travel guides, and the direct proximity of the highly touristic Phuket Island, Phang-Nga Province still keeps some authenticity and harbours a rich biota. The limestone massifs, covered with forest, often travelled by endless caves, and naturally protected by abrupt cliffs, offering a refuge to numerous species of herpetofauna. FRITH (1977) even suggested that the absence of some amphibians species on Phuket Island may be due to the lack of extensive limestone surface, in contrast to Phang-Nga Province.



Besides the still undisturbed natural places, many protected areas are to be found in the province, including the Ao Phang-Nga National Park. These preserved areas encompass various biotopes, from mangroves and coral reefs to dense lowland rainforests and to wet low montane forests, offering numerous rich and extensive suitable places for the reptile and amphibian fauna. Obviously, it was striking since our first zoological excursions that it would be extremely worthwhile to survey thoroughly its herpetofauna, very partially known from casual records published mainly by FRITH (1977a, 1978) and CHAN-ARD et al. (1999). Actually, strange as it may be, in spite of its richness and zoogeographical interest, and easy access, close to highly visited island of Phuket, the herpetology of Phang-Nga Province had not been previously systematically investigated. Another interest in studying the herpetofauna of this province directly stems from its location south of the Isthmus of Kra, a strategical place in the understanding of the zoogeography of the south-east Asian herpetofauna. Phang-Nga Province is at about mid-distance between the isthmus and the northern extremity of Peninsular Malaysia.

An active collaborative research programme between the Royal Forest Department of Thailand (Bangkok) and the Muséum national d'Histoire naturelle (Paris) was initiated in order to survey the herpetology of the province. Emphasis was put on the systematic inventory of the reptile diversity of the whole of the province. During several trips, we surveyed both unprotected and protected areas. Although we did not visit all suitable places, especially some elevated areas, and hence we cannot claim that we traced all reptile taxa present in the Phang-Nga Province, we feel appropriate to publish here a list of taxa currently recorded, with available notes on their basic biology.

Our list of species present in the province is based both on specimens collected by us during our field trips, as well as on specimens deposited in Thai and foreign collections with an unquestionable collection locality, and on literature. Unsurprisingly, some species proved to be addition to the known fauna of the province and are indicated as such. Besides establishing the first list of reptiles of the province, we also provide informations on biology of listed specimens and local vernacular names, when available.

#### MATERIALS AND METHODS

We preserved at least one specimen of most of the encountered species, with emphasis on rare or poorly known taxa; only representative voucher specimens of the most common species were collected. We also systematically recorded scale counts and all major morphological characters of all preserved specimens examined, although for

the sake of brevity they cannot be presented here. Released animals were, as far as possible, photographed. Most noteworthy observed biological data were recorded.

#### ABBREVIATIONS

Abbreviations of the institutions and collections in which were deposited the voucher specimens collected by us, or in which we examined previously deposited Phang-Nga specimens, are as follows:

BAY: Prof. Bruce A. YOUNG personal collection, Lafayette College, Easton, USA.

CUB-MZ (R): Chulalongkorn University Museum of Zoology (Reptiles), Bangkok Thailand.

IRSNB: Institut Royal des Sciences naturelles de Belgique, Brussels, Belgium.

KPS: Ko Panyi School, Panyi Island, Phang-Nga Province, Thailand.

MCZ: Department of Herpetology, Museum of Comparative Zoology, Cambridge, USA.

MNHN: Muséum national d'Histoire naturelle, Paris, France.

MZUSP: Museum of Zoology, University of São Paulo, São Paulo, Brazil.

PATC: Phang-Nga Agriculture and Technology College, Phang-Nga, Thailand.

QSMI: Queen Saovabha Memorial Institute, Thai Red Cross Society, Bangkok, Thailand.

RFD: Royal Forest Department, Bangkok, Thailand.

#### Other abbreviations:

NRCT: National Research Council of Thailand, Bangkok, Thailand

RFP: Raman Forest Park, Takua Thung District, Phang-Nga Province, Thailand

SVL: snout-vent length

TL: total length

All our investigations were conducted in compliance with regulations currently in force in Thailand. Involved licences and authorisations were thus obtained from RFD and NRCT. Authorities who kindly approved us these licences are cited in the Acknowledgements.

## RESULTS

## SYSTEMATIC LIST

Species new for the province are marked with an asterisk (\*).

## CHELONII

## TRIONYCHIDAE

***Dogania subplana* (Geoffroy Saint-Hilaire, 1809) \***

MNHN 1997.6590, Moo.8, Ban Khura, Khuraburi District, 30 July 1985 (donation PATC).

MNHN 1997.6591, Ban Bang Ba, Muang District, 17 February 1998.

Biology. The specimen MNHN 1997.6591 was collected in a swamp within a cultivated area. This species is regularly caught and eaten by the villagers. Small specimens are sometimes kept and fed in artificial tanks until they reach a size sufficient for consumption.

Vernacular name. *Taphab-nam*.

## CHELONIIDAE

*Chelonia mydas* (Linnaeus, 1758)*Eretmochelys imbricata* (Linnaeus, 1766)*Lepidochelys olivacea* (Eschscholtz, 1829)

See below.

## DERMOCHELYIDAE

***Dermochelys coriacea* (Vandelli, 1761)**

Every year since 1970 takes place in March the "Sea Turtles Conservation Festival" in Thai Muang District. During this celebration, hundreds of sea turtles are released to the sea by Thai and Chinese tourists willing to gain merit according to Buddhist beliefs. In 1998, at the time we (CC & OP) assisted to the celebration, several hundreds of *Chelonia mydas* (Linnaeus, 1758) were freed by everyone who agreed to pay 50 bahts per specimen (about 1.5 US dollars). The number of released turtles varies between 400 and 1000 every year. The festival is also the occasion for colorful fanfare and parades. This opportunity is remarkably used to heighten population awareness of the problems of protection of sea turtles and wildlife in general. Mr JINDAMAUKUL (*in litt.*, 1998) provided us information about the situation of the sea turtles in the province. The turtles lay eggs notably on Phathong and Similan Islands (Khuraburi District), Kaopilai beach (Takuathung District), and Thai Muang and Banbodan beaches (Thai Muang District). In the latter district, four species are known to lay eggs on the sandy beaches: *Chelonia mydas*, *Eretmochelys imbricata*, *Lepidochelys olivacea* (CHELONIIDAE) and *Dermochelys coriacea* (DERMOCHELYIDAE), the most common being *Lepidochelys* and



*Dermochelys* which are recorded every year. Sea turtles were severely threatened in the province by industrial projects (INCHUKUL, 1996).

#### TESTUDINIDAE

##### *Indotestudo elongata* (Blyth, 1853) \*

Biology. The species is common throughout the province in open grassy areas. Many farmers keep specimens in enclosures and use them as food stock. We notably observed specimens at Hat Thai Muang, Thai Muang District, on 16 February 1998.

##### *Manouria emys* (Schlegel & Müller, 1840) \*

Biology. As for *I. elongata*, numerous specimens are regularly brought to PWBS by farmers who try to gain merit according to the Buddhist beliefs in releasing animals.

#### BATAGURIDAE

##### *Cuora amboinensis kamaroma* Rummeler & Fritz, 1991

MNHN 1997.6595, Hat Thai Muang, Thai Muang District, 16 February 1998.

Biology. Our single preserved specimen was caught, along with two larger specimens of the same species, in a small sunny pool in a sandy area close to a beach, by Burmese workers, who intended to eat them.

##### *Cyclemys oldhami* Gray, 1863 \*

Several specimens were offered by farmers to the PWBS in 1998, where they are kept alive.

##### *Heosemys spinosa* (Gray, 1831) \*

Several specimens were offered by farmers to the PWBS in 1998, where they are kept alive.

##### *Siebenrockiella crassicollis* (Gray, 1831) \*

MNHN 1997.6598, Hat Thai Muang, Thai Muang District, 16 February 1998.

Biology. Our single specimen was discovered along with the specimen of *Cuora amboinensis* listed above.

#### CROCODYLIA

#### CROCODYLIDAE

##### *Crocodylus porosus* Schneider, 1801 \*

A living three meters long specimen is exposed in the zoo of the PWBS. This specimen was formerly housed in a temple in the province; because the specimen became too dangerous it was given by the monks to the PWBS in 1998.

Biology. Fishermen had caught this specimen several years before in a fishing net in the mangrove of Ao Phang-Nga, Muang District. Due to intensive hunting, the species is

now locally very rare, and is said by fishermen to be extinct in Ao Phang-Nga N. P.  
Vernacular names. *Joraké*, *také*, or *ké*.

## LACERTILIA

### GEKKONIDAE

#### *Cnemaspis siamensis* (Smith, 1925) \*

MNHN 1999.7707-08, PWBS, Muang District, July 1998.

Biology. These specimens were collected under a decaying stump in an evergreen rainforest.

Vernacular name. *Jing-jok* (Thai spelling given by COX, 1991: 472).

#### *Cosymbotus platyurus* (Schneider, 1792) \*

MNHN 1998.0527, MNHN 1999.7652-55, Phang-Nga Police Station, Phang-Nga City, Muang District, 22 February 1998 (MNHN 1998.0527), 14 February 1999 (others).

Remark. A sexual dimorphism at the level of the development of the skin fringes is well visible in our series: the fringe bordering posterior limbs is more developed in males, and a lateral fold of skin on the sides of the head is lacking in females.

Biology. MNHN 1998.0527 and MNHN 1999.7652 contain two eggs of diameter of ca. 7 mm. All specimens were found on a wall near a fluorescent tube on a building at night in syntopy with *Gekko monarchus* and *Hemidactylus frenatus*.

Vernacular name. *Jing-jok*.

#### *Cyrtodactylus oldhami* (Theobald, 1876) \*

MNHN 1999.7626, MNHN 1999.7698, RFD (Field Nr. P181), PWBS, Muang District, 20 July 1998, 10 January 2000, 14 January 2000.

Biology. MNHN 1999.7626 was found at night in a path in an evergreen dense forest. It was kept ten days in captivity in the station, but refused all offered insects. RFD (Field Nr. P181) was collected at 8.00 PM at the base of a large tree in evergreen forest. MNHN 1999.7698 was found by day in a hollow dead tree that we cut down.

Vernacular name. *Took-kae* (Thai spelling given by COX, 1991: 499).

#### *Cyrtodactylus peguensis peguensis* (Boulenger, 1893) \*

MNHN 1998.0544, Ban Kok Jaroen, Tap-Phut District, 19 July 1998.

The single collected specimen was removed from the stomach of an adult snake *Ahaetulla prasina* (Boie, 1827) (IRSNB 15068, see below). Because it is partially digested, the skin on the head and venter is almost totally destroyed. Nevertheless, on the basis of the structure of the fingers and the dorsal and caudal colour pattern, which are similar to the one illustrated by TAYLOR (1963: 731), we propose this identification.

#### *Cyrtodactylus pulchellus* Gray, 1828 \*

IRSNB 15143, MNHN 1998.0600, Tham Phung Chang, Phang-Nga City, behind

Provincial Hall, Muang District, 21 July 1998.

MNHN 1999.7706, RFD (Field Nr. P144), Tham Reusi, Muang District, 11 January 2000.

Biology. On July 21st 1998, during a mere one hour visit in Phung Chang cave, 6 specimens were seen. In Reusi cave too, the species is abundant. IRSNB 15143 contains 2 eggs of about 11 mm diameter; the specimen was kept alive two weeks in PWBS; it was not shy, accepting moths and butterflies, and attempted to bite when handled. MNHN 1998.0600 contains an egg of about 9 mm diameter and another much less developed. The specimen MNHN 1999.7706 was born on January 11th, 2000 from an egg collected the day before deeply in the cave; this egg was deposited along with 15 others, of which 11 had already hatched in a small fissure filled with soft soil. The dimensions of the eggs are 16 x 13 mm. Measurements of this new born specimen are SVL 38 mm and TL 79 mm.

Vernacular name. *Took-kae*.

***Dixonius siamensis* (Boulenger, 1898) \***

A single adult was briefly but clearly observed at night in a crack between large rocks near the entrance of Reusi cave on 11 January, 2000; it unfortunately escaped in a narrow and deep crevice.

***Gehyra mutilata* (Wiegmann, 1834) \***

MNHN 1999.7703-05, RFD (Field Nr. P202-203), Ko Boi Yai, Ko Yao District, 18 January 2000.

Biology. The species was common inside (during the day) or on (at night) dead trees everywhere in the dry secondary forest on the island, from sea level to its summit (about 135 m a.s.l.); it was however never seen on the few human settlements of the island where only *H. frenatus* was found. Numerous clutches of two eggs (9 x 8 mm) were seen exposed on trunks or hidden under bark. We also observed one active during the day on a coconut tree on the beach of Ko Yao Yai on 20 January, 2000, but we never found the species on the mainland.

Vernacular name. *Jing-jok*.

***Gekko gecko* (Linnaeus, 1758) \***

IRSNB 15158, MNHN 1998.0593, Ban Khurod, Khuraburi District, 28 February 1998.

MNHN 1999.7623, Ban Bang Khlang, Khuraburi District, 28 February 1998.

Biology. All specimens were caught within human dwellings in the afternoon. Stomach of MNHN 1999.7623 contains the remains of a large winged insect. Stomach of MNHN 1998.0593 contains remains of a large beetle (Scaraboidea). The species was encountered only in the northern district of Khuraburi, where it appears quite common. It seems absent from the houses in Phang-Nga City where it is at least locally replaced by the other large species, *Gekko monarchus* or *Ptychozoon lionotum*.

Vernacular name. *Took-kae*.



***Gekko monarchus* (Duméril & Bibron, 1836) \***

CUB-MZ (R) 1999.07.15.5, MNHN 1998.0546, MNHN 1999.7649-51, RFD (Field Nr. P146-147), Phang-Nga Police Station, Phang-Nga City, Muang District, 22 February 1998, 8 September 1997, 14 February 1998, idem, 11 January 2000.

Remark. This Sundanese species was previously known to reach its northernmost locality at Narathiwat, Narathiwat Province, in extreme south-eastern Thailand (TAYLOR, 1963: 799; MANTHEY & GROSSMANN, 1997: 234). The present records extend its range northwards by about 400 km.

Biology. The specimen MNHN 1999.7649 was collected at night on a jackfruit tree in front of the Police Station in the city. All other specimens were caught on a wall near a fluorescent tube on a building of the Police Station at night. These geckoes are shy and hunt late in the evening, later than the smaller species (*Cosymbotus platyurus* and *Hemidactylus frenatus*) which live in syntopy. During the day, they stay hidden behind closets in houses.

Vernacular names. *Took-kae* for the adults, *jing-jok* for the juveniles (the latter being confused with the adults of syntopic smaller species of geckoes).

***Gekko smithii* Gray, 1842 \***

Although we do not have voucher specimen, an adult which was identified as belonging to this species, was observed in the late afternoon in December 1998 in Reusi cave, Muang District. It escaped in a fissure at the cave vault. At the same place we observed and collected *Cyrtodactylus pulchellus*.

Remark. This species was previously known to reach its northernmost locality in Satun Province, in extreme south-western Thailand (MANTHEY & GROSSMANN, 1997: 235). The present record extends its range northwards by ca. 250 km.

Vernacular name. *Took-kae*.

***Hemidactylus frenatus* Duméril & Bibron, 1836 \***

MNHN 1998.0566-68, MNHN 1999.7657, MNHN 1999.7670-72, Ban Bang Ba, Muang District, 15 February 1998, idem, idem, 7 September 1997, 6 September 1997, idem, idem.

MNHN 1999.7656, Phang-Nga Police Station, Phang-Nga City, Muang District, 14 February 1998.

MNHN 1999.7658, Ban Klong Khian, Takua Thung District, 16 February 1998.

MNHN 1999.7659-60, Hat Thai Muang, Thai Muang District, 16 February 1998.

MNHN 1999.7673, MNHN 1999.7700, RFD (Field Nr. P140), PWBS, Muang District, 16 February 1998, 10 January 2000, idem.

PATC (unnumbered, 10 specimens), Khuk Khak Subdistrict, Takua Pa District, 12 September 1998.

PATC (unnumbered, 3 specimens), PATC, Takua Thung District, 29 August 1993.

Biology. MNHN 1998.0566-0568 were caught at night on the walls of a house near a lamp; their stomachs contain numerous small insects, mainly Coleoptera and Hymenoptera. MNHN 1999.7656 was discovered on a wall near a fluorescent tube on a

building at night, in strict syntopy with *Platyurus platyurus* and *Gekko monarchus*. MNHN 1999.7658 was collected in the afternoon on a tree in a coconut tree plantation, whereas MNHN 1999.7659-60 were found in the afternoon under coconut leaves on the ground near the beach. MNHN 1999.7670-72 was caught in the afternoon, also on the ground in a rubber plantation. MNHN 1999.7673 was found active during the afternoon on a path near the headquarters of PWBS. MNHN 1999.7700 and RFD (Field Nr. P140) were caught on walls near lamps at the headquarters of PWBS. Many specimens were observed hunting at night on trunks in evergreen forest in PWBS in January 2000. The species is common everywhere in the province, on the mainland and on islands; we observed numerous specimens hunting at night on wall of houses on Lawa Island on 27 December, 1999, and at the headquarters of Ko Boi Yai on 31 December, 1999. Vernacular name. *Jing-jok*.

***Hemiphyllodactylus typus* Bleeker, 1859 \***

RFD (Field Nr. P205), Ko Boi Yai, Ko Yao District, 18 January 2000.

Biology. A single specimen was found in strict syntopy with two *Gehyra mutilata* under the bark of a dead tree in dry secondary forest at an altitude of 120 m above sea level.

Vernacular name. *Jing-jok*.

***Ptychozoon lionotum* Annandale, 1905 \***

CUB-MZ (R) 1999.07.15.4, MNHN 1998.0590, MNHN 1999.7661, PWBS, Muang District, 16 February 1998, 15 February 1998, June 1998.

IRSNB 15144, Phang-Nga City, Muang District, 23 July 1998.

RFD (Field Nr. P191), PWBS, Muang District, 14 January 2000.

Biology. CUB-MZ (R) 1999.07.15.4 were caught in the afternoon on a cage in the zoo of PWBS. IRSNB 15144 was collected in the afternoon in a house in the city; it contains two large eggs (longest dimension 11 mm). MNHN 1998.0590 was discovered in the afternoon in the office of the PWBS on the wall; this specimen and another (not collected) living in the same room were observed during several weeks; they were diurnal and crepuscular and did not allow the presence of other species of geckoes in their territory; both hid during the night under the same frame. MNHN 1999.7661 contains two well-developed eggs; interestingly, its stomach, apart from remains of insects (Blattoptera and Coleoptera) also contains remains of several eggs of Gekkonidae. RFD (Field Nr. P191) is a completely formed embryo extracted from an egg, "glued" with another egg at 1.6 m above the ground on a tree in evergreen forest.

Vernacular name. *Took-kae-bin*.

AGAMIDAE

***Acanthosaura crucigera* (Boulenger, 1885)**

IRSNB 15141, MNHN 1998.0528, PWBS, Muang District, 26 July 1998, 28 July 1998.

MNHN 1999.7697, RFD (Field Nr. P145), Tham Nam Pud, Muang District, 11 January 2000.

Biology. IRSNB 15141 and MNHN 1998.0528 were found in the afternoon active on



tree trunks at an height of one meter, in evergreen forest. The abdominal cavity of IRSNB 15141 contained numerous nematodes. RFD (Field Nr. P145) was collected by day under a stone in the dry bed of a stream in secondary forest, at only a few meters from MNHN 1999.7697, which was collected on the ground. MNHN 1998.0528 was kept in captivity in Europe until December 20th, 1998; it fed mainly on earthworms and woodlice, staying nearly always concealed in moist foliage on the ground.  
Vernacular name. *King-ka*.

***Bronhocela cristatella* (Kuhl, 1820) \***

IRSNB 15140, PWBS, Muang District, June 1998.

RFD (Field Nr. P152), RFP, Takua Thung District, 15 January 2000.

Biology. Both specimens were caught during the day in dense evergreen forest. RFD (Field Nr. 152) displayed an unusual escape mode: it was first seen at an height of 1 m on a fern overhanging a small stream; when it was disturbed by us, it immediately plunged into the water and actively swam to the bottom at a depth of about 15 cm where it remained motionless until we caught it.

Vernacular name. *King-ka*.

***Calotes emma emma* Gray, 1845 \***

IRSNB 15061-64, MNHN 1999.7668-7669, Ban Bang Ba, Muang District, 6 September 1997.

BAY (Field Nr. 327), Ban Khurod, Khuraburi District, 28 February 1998.

BAY (Field Nr. 202 K), MNHN 1999.7667, PWBS, Muang District, June 1998, July 1998.

PATC (unnumbered), PATC, September 1985.

PATC (unnumbered), Bo Saen, Tap-Phut District, September 1987.

PATC (unnumbered), Takua Thung District, 10 September 1993.

PATC (unnumbered, 2 specimens), Takua Thung District, 14 February 1984.

PATC (unnumbered), Ban Kok Kloi, Thai Muang District, 23 August 1997.

RFD (Field Nr. K201, P130), PWBS, Muang District, no date, 10 January 2000.

Biology. IRSNB 15061-64 were caught in a rubber plantation in the afternoon. RFD (Field Nr. P130) was discovered at night asleep on a shrub along a forest path.

Vernacular name. *King-ka*.

***Calotes versicolor* (Daudin, 1802) \***

BAY (Field Nr. 244-245), IRSNB 15060, Ban Bang Ba, Muang District, 17 February 1998, 7 September 1997.

PATC (unnumbered), Bo Saen, Tap-Phut District, September 1987.

RFD (Field Nr. P221), Phang-Nga City, Muang District, 22 January 2000.

Biology. IRSNB 15060 was collected in a garden in the afternoon. RFD (Field Nr. P221) was found dead on road in the city.

Vernacular name. *King-ka*.



***Draco blanfordii* Boulenger, 1885 \***

MNHN 1998.0538, Sanang Manora, Tung Kha Ngok, Muang District, 17 February 1998.

Biology. Our single specimen was caught at an height of 1.5 m on a tree trunk in the afternoon in primary evergreen forest. It contains 4 eggs of a maximal diameter 5 mm; its stomach is filled with ants remains.

Vernacular name. *King-ka-bin*.

***Draco maculatus* (Gray, 1845) \***

CUB-MZ (R) 1999.07.15.8-1999.07.15.9, CUB-MZ (R) 1999.07.15.10, IRSNB 15135, MNHN 1998.0532, MNHN 1998.0534-0537, MNHN 1998.0561-0562, Ban Bang Ba, Muang District, 6 September 1997 (CUB-MZ (R) 1999.07.15.8-1999.07.15.9), 17 February 1998, 22 February 1998 (MNHN 1998.0561-0562).

Biology. Our series was caught in a rubber plantation in the afternoon. The stomach of MNHN 1998.0562 is filled with ants remains. This species is locally extremely common.

Vernacular name. *King-ka-bin*.

***Draco taeniopterus* Günther, 1861**

CUB-MZ (R) 1999.07.15.7, IRSNB 15134, MNHN 1998.0563-0564, Ban Bang Ba, Muang District, 6 September 1997 (same date for all except CUB-MZ (R) 1999.07.15.7: 8 September 1997).

MNHN 1999.7601, RFD (Field Nr. P132), PWBS, Muang District, June 1998, 10 January 2000.

RFD (Field Nr. P200), Ko Boi Yai, Ko Yao District, 18 January 2000.

RFD (Field Nr. P222), Ban Bang Ma, Tham Subdistrict, Takua Thung District, 15/9/? (donation PATC).

Remark. In TAYLOR (1963), there is a contradiction between the key (p. 821) where the nostrils are erroneously said to be lateral, and the diagnosis (p. 852) where they are said to be directed upwards.

Biology. Specimens CUB-MZ (R) 1999.07.15.7, IRSNB 15134 and MNHN 1998.0563-0564 were all caught in a rubber plantation in the afternoon, in strict syntopy with the specimens of *Draco maculatus* listed above, the latter species being much more abundant. Stomachs of MNHN 1998.0563-0564 was filled with ants remains. MNHN 1999.7601 was caught in a primary evergreen forest; it contains 4 eggs (12 x 6 mm) and its stomach is filled with ants remains. RFD (Field Nr. 132) was collected by day on a tree in evergreen forest. RFD (Field Nr. 200) was obtained by day on a tree 4 m above the ground in a open secondary forest.

Vernacular names. *King-ka-bin*, *king-ka*.

## UROMASTYCIDAE

***Leiolepis belliana* (Hardwicke & Gray, 1827) \***

IRSNB 15159, Ban Bang Ba, Muang District, 25 July 1998.

MNHN 1999.7640, MZUSP 87791, Hat Thai Muang, Thai Muang District, all 16 February 1998.

Biology. IRSNB 15159 was extirpated in the afternoon out of its hole in a cultivated garden; its stomach contains remains of ants; at the entrance of the hole was a large *Bufo melanostictus*. MNHN 1999.7640 and MZUSP 87791 were discovered in holes in the sandy soil very close to the beach. MNHN 1999.7640 was caught near the beach and brought by a dog.

Vernacular name. *Yae*.

#### SCINCIDAE

##### *Dasia olivacea* Gray, 1838

MNHN 1998.0550, Ban Bang Ba, Muang District, 6 September 1997.

Biology. Our specimen was caught in the afternoon on the ground in a garden bordering a rubber plantation.

Vernacular name. *Jing-len*.

##### *Lygosoma quadrupes* (Linnaeus, 1766) \*

MNHN 1998.0565, Ban Bang Ba, Muang District, 6 September 1997.

Biology. MNHN 1998.0565 was caught under wood debris in a rubber plantation. Its stomach contains a partly digested spider. We also found a specimen (not collected) under dead leaves on the ground in the secondary forest of Lawa Island during the afternoon of December 27th, 1999.

Vernacular name. *Ngoo-teen* ("snake with feet").

##### *Mabuya macularia* (Blyth, 1853) \*

IRSNB 15157, MNHN 1999.7631, Ban Bang Ba, Muang District, 6 September 1997, 17 February 1998.

Biology. Our two specimens were found in the afternoon among the leaves on the ground in a rubber plantation.

Vernacular name. *Jing-len*.

##### *Mabuya multifasciata* (Kuhl, 1820)

MNHN 1998.0540, Sanang Manora, Tung Kha Ngok, Muang District, 17 February 1998.

MNHN 1999.7628, Ko Mai Phai, Muang District, 27 February 1998.

MNHN 1999.7632, Ban Klong Kian, Takua Thung District, 16 February 1998.

MNHN 1999.7675, Phang-Nga Police Station, Phang-Nga City, Muang District, 21 February 1998.

MNHN 1999.7676, Ban Song Peng, Muang District, 22 February 1998.

Biology. MNHN 1998.0540 was caught in the afternoon on the ground in primary evergreen forest. MNHN 1999.7628 was killed with a slingshot by children in the afternoon in an open degraded secondary forest; its stomach contains remains of a snail and insects. MNHN 1999.7632 was found in the afternoon on the ground under



dead coconut leaves in a coconut plantation. Its stomach was filled with various remains of invertebrates, notably a snail (Gastropoda), a butterfly larva (Lepidoptera), crickets (Orthoptera), a spider (Arachnida), and woodlice (Crustacea). Two specimens were observed active at midday near the beach at the edge of the forest of Ko Boi Yai on 31 December, 1999. Another specimen (not collected) was disturbed at about 1.00 AM on 10 January, 2000 while it was sleeping under dead leaves on the ground in evergreen forest at PWBS.

Vernacular names. *Jing-len*; the children on the Mai Phai island who helped us to catch them call it *len* (diminutive of *jing-len*).

***Riopa bowringi* (Günther, 1864) \***

MNHN 1998.0531, Ban Bang Ba, Muang District, 6 September 1997.

MNHN 1999.7630, Hat Thai Muang, Thai Muang District, 16 February 1998.

Remark. We follow ZHAO & ADLER (1993) and MANTHEY & GROSSMANN (1997) in regarding the genus *Riopa* Gray, 1839 as valid [a].

Biology. MNHN 1998.0531 was collected under wood debris in a rubber plantation, while MNHN 1999.7630 found at noon under dry coconut leaves on the ground on a sandy soil near the beach.

Vernacular name. *Jing-len*.

***Riopa herberti* (Smith, 1916)**

MNHN 1999.7701-02, RFD (Field Nr. P208-209), Ko Boi Yai, Ko Yao District, 18 January 2000.

Biology. Although we never observed this species on the mainland, on this island it is very common under dead leaves and dead wooden pieces in the dry secondary forests.

Vernacular name. *Jing-len*.

***Sphenomorphus maculatus* (Blyth, 1853) \***

CUB-MZ (R) 1999.07.15.11, Ban Bang Ba, Muang District, 22 February 1998.

MNHN 1998.0586, MNHN 1999.7665-66, PWBS, Muang District, 31 July 1998, 15 February 1998, *idem*.

MNHN 1999.7662-64, Sanang Manora, Tung Kha Ngok, Muang District, 17 February 1998.

MNHN 1999.7699, RFD (Field Nr. P174-176), RFP, Takua Thung District, 15 January 2000.

Biology. CUB-MZ (R) 1999.07.15.11 was caught in the afternoon on the ground in a rubber plantation. MNHN 1998.0586 and MNHN 1999.7665-66 were found active in the afternoon in primary evergreen forest. Stomach of MNHN 1998.0586 contains an orthopteran and a spider partly digested. Stomach of MNHN 1999.7663 contains remains of various arthropods, of which two spiders and a myriapod. MNHN 1999.7662-64, MNHN 1999.7699 and RFD (Field Nr. P174-176) were collected on the ground among leaves in primary evergreen forest near a stream. Stomach of MNHN 1999.7665 contains numerous termites.



Vernacular name. *Jing-len*.

***Tropidophorus robinsoni* Smith, 1919 \***

MNHN 1999.7694-96, RFD (Field Nr. P172, P184, P235), RFP, Takua Thung District, 15 January 2000.

Remark. This species was previously known to reach its southernmost locality in Chumphon Province, Peninsular Thailand (TAYLOR, 1963: 998; MANTHEY & GROSSMANN, 1997: 283). The present records extend its range southwards by about 250 km.

Biology. The specimens were found active by day in water of a hill waterfall, and under stones along a stream [here in syntopy with *Ingerana tasanae* (Smith, 1921); voucher specimens MNHN 1999.7709-10, RFD (Field Nr. P166-167)], or under rotten wood and dead leaves (there in syntopy with *Sphenomorphus maculatus*) in a dense primary evergreen forest.

Vernacular name. *Jing-len*.

LACERTIDAE

***Takydromus sexlineatus ocellatus* Cuvier, 1829 \***

MNHN 1998.0579-0580, Ban Bang Sai, Muang District, 24 & 25 February 1998.

Biology. Our series and numerous other specimens were observed living in tall grass in a banana and mangosteen trees plantations. The site was visited several times at midday in February 1998, but in the hot sun, no specimens were detectable, while in the late afternoon, at the time our specimens were caught, they seemed very numerous. The female MNHN 1998.0579 contains 3 eggs (length about 9 mm, width about 5 mm).

Vernacular name. *Jing-len-hang-yao* (long-tailed lizard).

VARANIDAE

***Varanus bengalensis nebulosus* (Gray, 1831)**

CUB-MZ (R) 1998.02.28.1, Ban Bang Tip, Khuraburi District, 28 February 1998.

Biology. CUB-MZ (R) 1998.02.28.1 was found by locals, hidden in the recess of a wall in a bathroom of a villa; its stomach contains remains of various arthropods, notably Coleoptera, and a yellow snail of about 13 mm diameter.

Vernacular name. *Heea*.

***Varanus salvator* (Laurenti, 1768)**

The species is common in the province, and we notably observed in January 2000 several specimens on beaches of small islands in Ao Phang-Nga N. P. When disturbed, they often escaped by plunging into the sea.

SERPENTES

TYPHLOPIDAE

***Ramphotyphlops braminus* (Daudin, 1803)**

CUB-MZ (R) 1998.12.11.36, Ban Bang Ba, Muang District, October 1998.

MCZ 182617, Phang-Nga Police Station, Phang-Nga City, Muang District, 27 July 1998.

MCZ 182619-621, Muang District, no date.

MCZ 182622, Muang District, 1997.

Biology. CUB-MZ (R) 1998.12.11.36 was found while digging in a garden in a cultivated area, whereas MCZ 182617 was discovered while digging in a garden in the city. MCZ 182619-621 were found dead and dried in or near human habitations. MCZ 182622 was also found dead near human habitations. The species is very common in the area.

Vernacular names. *Ngoo-din* (living and fresh specimens; Thai spelling in COX, 1991: 469), *ngoo-how-pak-pet* (specimens which are found dead and dried, collected and venerated by the native people, see PAUWELS et al., 2000).

#### XENOPELTIDAE

##### ***Xenopeltis unicolor* Boie, 1827 \***

CUB-MZ (R) 1998.12.11.33, Ban Bang Ba, Muang District, October 1998.

IRSNB 15076, Ban Khao Tao, Muang District, 28 July 1998.

MNHN 1999.7613, Ban Kok Kloi, Thai Muang District, 30 July 1998.

Biology. CUB-MZ (R) 1998.12.11.33 was discovered in a garden. IRSNB 15076 was found freshly killed at 11.00 PM on a road crossing over a wet cultivated area. MNHN 1999.7613 was obtained at 10.00 PM on a road crossing over a cultivated area.

Vernacular name. *Ngoo-saeng-ah-thit* (Thai spelling in COX, 1991: 470).

#### UROPELTIDAE

##### ***Cylindrophis ruffus* (Laurenti, 1768)**

MNHN 1997.6582, Ban Bang Ba, Muang District, 25 July 1998.

Biology. The single available specimen was injured and exhumed while gardening in a cultivated area; its stomach contains the remains of an unidentified typhlopod whose head and anterior body were already digested, its remaining part being 9 cm long.

#### PYTHONIDAE

##### ***Python brongersmai* Stull, 1938 \***

IRSNB 15071, Phang-Nga, Muang District.

Remark. This taxon, formerly known as *Python curtus brongersmai*, was raised to full species status by SHINE et al. (1999).

Vernacular name. *Ngoo-lahm-pak-pet* (Thai spelling in COX, 1991: 470).

##### ***Python reticulatus* (Schneider, 1801)**

Biology. We examined on February 28th, 1998 at Ban Bang Tip, Khuraburi District, an adult female which was found in a hollow tree in a cultivated area by a farmer who was felling the dead tree with his tractor in the afternoon. The snake was then killed and eaten; it contained 29 large eggs that were also eaten; the farmer kept the skin and threw the head away. The species is still common in the province. During the rainy



season, about one specimen a day is brought by farmers to PWBS from where they are released. A 3 m long specimen was longly observed on January 18th, 2000 while it was resting in the afternoon among leaves in the dry forest of Ko Boi Yai.

Vernacular name. *Ngoo-leuam* (Thai spelling in COX, 1991: 471).

#### ACROCHORDIDAE

##### *Acrochordus granulatus* (Schneider, 1799)

BAY (no Field Nr.), CUB-MZ (R) 1999.07.15.13, IRSNB 15136, MNHN 1997.6573 & MNHN 1997.6576-6578: Ko Mai Phai, Muang District, all 27 February 1998.

PATC (unnumbered), Ka Lai Subdistrict, Takua Thung District, 20 August 1998.

RFD (Field Nr. P199), Ko Boi Yai, Ko Yao District, 19 January 2000.

Biology. The specimens from Mai Phai island were caught by fishing net during the afternoon between the piles of the fishermen's village houses, close to the mangrove. This species is not eaten by the villagers of this island, nor hunted for its skin. None of these specimens attempted to bite while even roughly handled. Stomachs of specimens IRSNB 15136 and CUB-MZ (R) 1999.07.15.13 contain remains of fish. RFD (Field Nr. P199), collected in the afternoon in mangrove, regurgitated a 12 cm long fish.

Vernacular name. *Look-khoei-Phayanark* ("the child of the son in law of the King of snakes").

#### COLUBRIDAE

##### *Ahaetulla prasina* (Boie, 1827)

IRSNB 15068, Ban Kok Jaroen, Tap-Phut District, 19 July 1998.

IRSNB 15086, Ban Tha Taeng, Thai Muang District, 1 September 1993 (donation PATC).

MNHN 1998.0588, Ban Lam Wa, Tham Subdistrict, Takua Thung District, 10 August 1996 (donation PATC).

PATC (unnumbered), Ban Tak Daet, Muang District, 30 July 1995.

RFD (Field Nr. P155), PWBS, Muang District, 12 January 2000.

Biology. The specimen IRSNB 15068 crossed over the road along a rubber plantation in the afternoon; its stomach contained a partly digested *Cyrtodactylus p. peguensis* (Boulenger, 1893) (MNHN 1998.0544; see above). The stomach of IRSNB 15086 contains a partly digested *Hemidactylus frenatus* Duméril & Bibron, 1836. RFD (Field Nr. P155) was caught by day on a shrub in evergreen forest.

Vernacular name. *Ngoo-kheeo* (Thai spelling in COX, 1991: 472).

##### *Boiga cyanea* (Duméril, Bibron & Duméril, 1854)

MNHN 1998.0585, Phang-Nga City, Muang District, 20 February 1998.

MNHN 1998.8570, Muang District, no date (donation KPS).

RFD (Field Nr. 178), Ko Boi Yai, Ko Yao District, 18 January 2000.

Remark. The specimen from KPS was not accompanied by any label, but, according to our measurements, scale counts and the prey found in its stomach, we conclude that it is undoubtedly the specimen described by FRITH (1977a). The teachers of KPS claimed



that it was caught in Muang District.

Biology. MNHN 1998.0585 was collected at dusk on the ground in the main street of the city after being injured by a bicycle. Stomach of MNHN 1998.8570 contains a partly digested bird that FRITH (1977a: 284) determined as a *Motacilla* sp. (Aves: Motacillidae). RFD (Field Nr. 178) was collected in the afternoon in dry secondary forest in a tree hole at about 3 m above the ground.

Vernacular name. *Ngoo-kheeo*.

***Boiga cynodon* (Boie, 1827) \***

MNHN 1998.0596, PWBS 205, PWBS, Muang District, all June 1998.

Biology. MNHN 1998.0596 and PWBS 205 were collected in evergreen forest. The stomach of MNHN 1998.0596 contains some blue feathers.

***Boiga dendrophila* (Boie, 1827) \***

MNHN 1998. 8572, PWBS, Muang District, June 1998.

RFD (Field Nr. P224), RFP, Takua Thung District, 22 January 2000.

Biology. MNHN 1998. 8572 was caught on a bird cage in the zoo of PWBS. RFD (Field Nr. P224) was collected by day on a shrub along a stream of RFP where the species is said to be common.

Vernacular name. *Ngoo-plong-thawng* (Thai spelling in COX, 1991: 473).

***Boiga nigriceps* (Günther, 1863) \***

IRSNB 15041, Ao Phang-Nga, Muang District, 19 July 1998.

Biology. The single collected specimen was found injured at 10.00 PM on a road while crossing a rubber plantation.

Vernacular name. *Ngoo-kheeo*.

***Cerberus rynchops* (Schneider, 1799)**

MNHN 1998.8583, Ko Mai Phai, Muang District, 27 February 1998.

Biology. This single specimen was collected in afternoon into shallow sea water, coiled around a pile of household rubbish in a fishing village; its stomach contained two fishes, of which one is a *Periophthalmus*.

Vernacular name. *Ngoo-nam* ("water snake").

***Chrysopelea ornata* (Shaw, 1802)**

CUB-MZ (R) 1998.12.11.35, Ban Bang Ba, Muang District, October 1998.

PATC (unnumbered), Ban Bang Mak, Takua Thung District, 15 September 1985.

Biology. CUB-MZ (R) 1998.12.11.35 was found in a garden in a cultivated area.

Vernacular name. *Ngoo-kheeo*.

***Chrysopelea paradisi* Boie in Boie, 1827 \***

MNHN 1998.0589, RFD (Field Nr. K206), PWBS, Muang District, all June 1998.

Biology. Our specimen were caught during the day in primary evergreen forest.

Vernacular name. *Ngoo-kheeo*.

***Dendrelaphis cyanochloris* (Wall, 1921)**

MNHN 1999.7624, Ban Tham Thong Lang, Tap-Phut District, 19 July 1998.

Biology. This specimen was found freshly killed at 04.00 PM on a road crossing over a secondary forest.

Vernacular name. *Ngoo-kheeo*.

***Dendrelaphis formosus* (Boie, 1827) \***

MNHN 1997.6579, PWBS, Muang District, June 1998.

Biology. Our single specimen was collected during the day in evergreen forest.

***Dendrelaphis pictus* (Gmelin, 1789) \***

MNHN 1998.0573, PWBS, Muang District, 28 July 1998.

Biology. Our single specimen crossed over a path in the afternoon in evergreen forest; its stomach contains the remains of the limbs of an unidentified species of ranid frog (Anura: Ranidae).

***Dendrelaphis striatus* (Cohn, 1905) \***

RFD (Field Nr. P194), Phang-Nga Province (donation PATC).

***Dryocalamus subannulatus* (Duméril, Bibron & Duméril, 1854) \***

MNHN 1997.6593, PWBS, Muang District, 17 July 1998.

Biology. Our specimen was found in a guardian's log cabin near the evergreen forest, fallen from the roof in the early afternoon. The snake was kept alive for two weeks in PWBS and refused crickets and small ranids; even when roughly handled, it never attempted to bite.

Vernacular name. *Ngoo-plong-chanuan* (Thai spelling given by COX, 1991: 480).

***Elaphe radiata* (Boie, 1827)**

MNHN 1997.6581, Ban Tak Daet, Muang District, 27 February 1998.

MNHN 1998.0577, PWBS, Muang District, June 1998.

Biology. MNHN 1997.6581 was discovered wounded on a road crossing over the mangrove at 6.00 PM. The other specimen was caught in an evergreen forest.

Vernacular name. *Ngoo-thang-ma-paow* (Thai spelling in COX, 1991: 476).

***Elaphe taeniura ridleyi* (Butler, 1899) \***

QSMI 131, Phang-Nga Prov., 30 January 1990.

***Gonyosoma oxycephalum* (Boie, 1827)**

MNHN 1998.8580, PWBS, Muang District, 22 July 1998.

RFD (Field Nr. P225), Ban Hin Sam Khon, Takua Thung District, 23 January 2000.

Biology. MNHN 1998.8580 was caught in the early afternoon on a bird cage in the zoo



of the PWBS. RFD (Field Nr. P225) was found injured on a road crossing over a rubber plantation.

Vernacular name. *Ngoo-kheeo*.

***Homalopsis buccata* (Linnaeus, 1758)**

CUB-MZ (R) 1999.07.15.14, MNHN 1998.0592, Lampi river, Ban Poo Poui, Thai Muang District, all 25 July 1998.

Biology. Our specimens were found at night in a fast-moving river with a stony substrate crossing over a cultivated area. The species seems uncommon in the province.

Vernacular name. *Ngoo-kin-pla*.

***Lycodon laoensis* Günther, 1864 \***

MNHN 1998.8584, Bang Toei, Muang District, 28 July 1998.

RFD (Field Nr. P125), PWBS, Muang District, 9 January 2000.

Biology. MNHN 1998.8584 was found freshly dead on the road at 11.30 PM in a cultivated area. RFD (Field Nr. P125) was collected while it was foraging on a path in evergreen forest at PWBS at about midnight.

Vernacular name. *Ngoo-plong-chanuan* (Thai spelling given by COX, 1991: 480).

***Lycodon subcinctus* (Boie, 1827) \***

MNHN 1998.8568-69, Muang District, no date (donation PATC).

***Ptyas korros* (Schlegel, 1837)**

MNHN 1998.0525, MNHN 1998.8574, MNHN 1999.7618, Phang-Nga City, Muang District, 19 July 1998, 22 July 1998, 23 February 1998.

MNHN 1999.7674 (head), Ban Bang Tong Lam, Takua Thung District, 16 February 1998.

MZUSP 11486, Ban Bang Sai, Muang District, 25 February 1998.

PATC (unnumbered), PATC, Takua Thung District, 1985.

PATC (unnumbered), Thai Muang District, July 1985.

RFD (Field Nr. P226), PWBS, Muang District, no date.

Biology. MNHN 1998.0525 was found freshly killed on the road in the city at 10.00 AM. MNHN 1998.8574 was also collected freshly killed at 11 AM on a road crossing an urbanized area; its stomach contained the remains of two adult *Calotes* sp. (Agamidae) and of an unidentified small frog. MNHN 1999.7618 was found freshly road-killed at dusk in the city. MNHN 1999.7674 was found dead and desiccated on a road in a cultivated area. MZUSP 11486 was collected in late afternoon in a mangosteen plantation.

Vernacular name. *Ngoo-sing* (Thai spelling in COX, 1991: 477).

***Rhabdophis subminiatus* (Schlegel, 1837)**

CUB-MZ (R) 1998.12.11.34, Ban Bang Ba, Muang District, October 1998.

MNHN 1997.6594, Ban Klong Kian, Takua Thung District, 16 February 1998.

RFD (Field Nr. P212), Ban Hin Sam Khon, Takua Thung District, 16 January 2000.

Biology. CUB-MZ (R) 1998.12.11.34 was found in a garden; its stomach contains a *Kaloula pulchra* Gray, 1831 (Anura: Microhylidae) of 33 mm SVL. MNHN 1997.6594 was collected at day time on a path between a marsh and a coconut plantation; its stomach contained a *Bufo parvus* Boulenger, 1887 (Anura: Bufonidae) (MNHN 1997.6597; SVL 32 mm). RFD (Field Nr. P212) was caught in the afternoon in a house. An adult specimen (not collected) was observed foraging just after heavy rain at about midnight in shrubs in evergreen forest at PWBS on January 9th, 2000.

Vernacular names. *Ngoo-gapha-khaw-daeng* (Thai spelling of *gapha* in COX, 1991: 497 and of *khaw-daeng* in COX, 1991: 485); *ngoo-gapha* (the latter name being also applied in the area to *Calloselasma rhodostoma*).

***Xenochrophis flavipunctatus* (Hallowell, 1861)**

MNHN 1998.0583, Ban Lam Wa, Tham Subdistrict, Takua Thung District, 13 August 1997 (donation PATC).

MNHN 1999.7614, Ban Tha Dan, Muang District, 29 July 1998.

PATC (unnumbered), Tham Subdistrict, Takua Thung District, 20 August 1998.

Biology. MNHN 1998.0583 was caught in an artificial pond on the campus of the PATC. MNHN 1999.7614 was found fresh road-killed at noon on a road crossing over a mangrove forest.

Vernacular name. *Ngoo-kin-pla*.

ELAPIDAE

***Hydrophis spiralis* (Shaw, 1802)**

MNHN 1998.0521, Ao Phang-Nga, Muang District, no date (donation KPS).

Remark. This adult female, which was previously deposited at KPS, is accompanied by a hand-written bilingual (Thai-English) label dated December 1976 stating that the specimen was identified by C.B. FRITH. Its meristic data agree perfectly with those given by FRITH (1977a-b) for his specimen "KPS 1". Moreover, the comparison of the photograph he provided and our specimen shows that they have exactly the same coloration, and several other details, notably the position of ventral incisions, demonstrate undoubtedly that it turns over the same individual. The two other specimens mentioned by FRITH have very unfortunately been lost during a recent violent storm, which partially destroyed the Biology classroom<sup>1</sup>.

<sup>1</sup> FRITH (1977a) cited one *Acrochordus granulatus* (p. 270) and one *Chrysopelea ornata* (p. 292 & 293) from KPS that can also definitely be considered to be lost due to this storm. The collection of the KPS still contains several specimens accompanied by a label specifying that they were identified by FRITH in December 1976: one juvenile *Python reticulatus* (probably the only specimen from Phang-Nga Province cited by FRITH, 1977a: 270), one *Elaphe radiata*, one *Ptyas korros*, two *Naja kaouthia* (under the name *Naja naja*), and one *Cerberus rynchops* without label (we did not thoroughly examine this specimen, but it might well be that cited from KPS by FRITH, 1977a: 296).



***Laticauda colubrina* (Schneider, 1799)**

MNHN 1999.7692, RFD (Field Nr. P197), Ko Khai Nai, Ko Yao District, 20 January 2000.

Biology. These two specimens plus another were observed by day in holes of large rocks on the beach of this small island. Numerous tourists are brought every week for sunbath on this sandy beach, although one Thai man employee of the touristic company already died after having been bitten by a seasnake on the same beach. The species is said by locals to be present also on the close Ko Khai Nok.

Vernacular name. *Ngoo-nam*.

***Naja kaouthia* Lesson, 1831**

MNHN 1998.8575, Ban Lam Wa, Tham Subdistrict, Takua Thung District, 1997 (donation PATC).

MNHN 1998.8582, Muang District, no date (donation KPS).

MNHN 1997.6599, Ban Bang Ba, Muang District, 23 February 1998.

Remark. MNHN 1998.8582 was held at KPS and is accompanied by a hand-written bilingual (Thai-English) label dated December [19]76 stating that the specimen was identified by C.B. FRITH; it was however not included in the work of FRITH (1977a). There is no indication of locality, but, according to the teachers of KPS, it most probably comes from the island, and with certainty from the same district.

Biology. MNHN 1997.6599 was killed in a henhouse by the owner of the chickens who complained about the snake which already made several visits in the last weeks; its stomach indeed contains three large hen eggs. An adult specimen (not collected) was met on a path in the secondary dry forest of Ko Boi Yai in the afternoon; after having briefly displayed its hood, it disappeared under a dense amount of dead wood on the ground.

Vernacular name. *Ngoo-how* (Thai spelling in COX, 1991: 490).

***Ophiophagus hannah* (Cantor, 1836) \***

RFD (Field Nr. P151), near RFP, Takua Thung District, 15 January 2000.

Biology. Our specimen (389 cm TL) was surprised by the passage of a motorcycle while it was crossing a path in a rubber plantation in the afternoon, and immediately raised the fore part of its body in a threatening posture. Two Burmese employees working in the rubber plantation immediately arrived and hit the snake with long bamboo sticks with the intention of eating it. Thai people in Phang-Nga do not eat this species, but readily kill it when they meet it, because of its potent venom. The species is especially common in rubber plantations near forests.

Vernacular names. *Ngoo-jong-ang* (Thai spelling in COX, 1991: 490), *ngoo-how*.

## VIPERIDAE

***Calloselasma rhodostoma* (Boie, 1827)**

Biology. The species is well known by the local farmers, and is said to be especially common in the rubber plantations in the districts of Takua Pa and Tap-Phut.

Vernacular name. *Ngoo-gapha* (Thai spelling in COX, 1991: 499).

***Trimeresurus purpureomaculatus* (Gray, 1832)**

IRSNB 15142, Ban Khoun Dan, Ao Phang-Nga, Muang District, 27 July 1998.

MNHN 1999.7693, RFD (Field Nr. P195), Klong Kian, Takua Thung District, 21 January 2000.

Biology. IRSNB 15142 was caught at 3.00 PM on a mangrove tree at high tide; it tried to escape by swimming to other trees. Its stomach contains the digested remains of a *Trimeresurus* sp., most probably a congener. MNHN 1999.7693, a large female (SVL 778 mm) which contains 15 ovarian eggs, and RFD (Field Nr. P195) were collected in the afternoon at low tide on mangrove trees at an height of about 2 m. The species is very common in the mangroves.

Vernacular name. *Ngoo pang-ka* (Thai spelling in COX, 1991: 499); *pang-ka* being applied to two species of mangrove trees common in Ao Phang-Nga (easily distinguishable by the size of their leaves), on which this snake is associated with.

***Tropidolaemus wagleri* Wagler, 1830**

MNHN 1998.0591, PATC, Ban Lam Wa, Tham Subdistrict, Takua Thung District, July 1997 (donation PATC).

Biology. Students found the juvenile MNHN 1998.0591 with another larger congener (not preserved), on a single bush in the campus of the PATC.

Vernacular name. *Ngoo-kheeo* (juveniles).

## DISCUSSION

### LIST OF THE SPECIES RECORDED FROM THE PROVINCE OF PHANG-NGA

All Reptile species currently known from the province are listed in Table 1, which also includes source references when species were already known from Phang-Nga Province.



Table 1. - Reptile species currently known from the province of Phang-Nga.

Species cited	Origin of the citations
TRIONYCHIDAE	
<i>Dogania subplana</i>	This paper
CHELONIIDAE	
<i>Caretta caretta</i>	PENYAPOL (1958: map); SUTHITHAM (1996: 24)
<i>Chelonia mydas</i>	PENYAPOL (1958: map); INCHUKUL (1996: 2); SUTHITHAM (1996: 24); WANGKULANGKUL (1997: 4)
<i>Eretmochelys imbricata</i>	PENYAPOL (1958: map); INCHUKUL (1996: 2); SUTHITHAM (1996: 24); WANGKULANGKUL (1997: 4); THAMRONGNAWASAWAT & THIPHANAN (1998: 175, "Similan")
<i>Lepidochelys olivacea</i>	CHANTRAPORN SYL (1992a: 42, 1992b: 52); INCHUKUL (1996: 2); SUTHITHAM (1996: 24); WANGKULANGKUL (1997: 4)
DERMOCHELYIDAE	
<i>Dermochelys coriacea</i>	PENYAPOL (1958: map); INCHUKUL (1996: 2); SUTHITHAM (1996: 24); WANGKULANGKUL (1997: 4)
TESTUDINIDAE	
<i>Indotestudo elongata</i>	This paper
<i>Manouria emys</i>	This paper
BATAGURIDAE	
<i>Cuora amboinensis kamaroma</i>	MANTHEY & GROSSMANN (1997: 444); CHAN-ARD et al. (1999: 225); this paper
<i>Cyclemys oldhami</i>	This paper
<i>Heosemys spinosa</i>	This paper
<i>Siebenrockiella crassicollis</i>	This paper
CROCODYLIDAE	
<i>Crocodylus porosus</i>	This paper
GEKKONIDAE	
<i>Cnemaspis siamensis</i>	This paper
<i>Cosymbotus platyurus</i>	This paper
<i>Cyrtodactylus oldhami</i>	This paper
<i>Cyrtodactylus peguensis peguensis</i>	This paper
<i>Cyrtodactylus pulchellus</i>	This paper
<i>Dixonius siamensis</i>	This paper
<i>Gehyra mutilata</i>	This paper
<i>Gekko gekko</i>	This paper
<i>Gekko monarchus</i>	This paper; major range extension from the South
<i>Gekko smithii</i>	This paper; major range extension from the South
<i>Hemidactylus frenatus</i>	This paper
<i>Hemiphyllodactylus typus</i>	This paper
<i>Ptychozoon lionotum</i>	This paper

AGAMIDAE	
<i>Acanthosaura crucigera</i>	CHAN-ARD et al. (1999: 90; " <i>A. cf. crucigera</i> "); this paper
<i>Bronchocela cristatella</i>	This paper
<i>Calotes emma emma</i>	This paper
<i>Calotes versicolor</i>	This paper
<i>Draco blanfordii</i>	This paper
<i>Draco maculatus</i>	This paper
<i>Draco taeniopterus</i>	HENNIG (1936: 210-211; "Tung Pran", "Koh Rah"); this paper
UROMASTYCIDAE	
<i>Leiolepis belliana</i>	This paper
SCINCIDAE	
<i>Dasia olivacea</i>	ANONYMOUS (1996); this paper
<i>Lygosoma quadrupes</i>	This paper
<i>Mabuya macularia</i>	This paper
<i>Mabuya multifasciata</i>	ANONYMOUS (1996; " <i>Ma(l)buya fascinata</i> "); this paper
<i>Riopa bowringii</i>	This paper
<i>Riopa herberti</i>	SMITH (1930: 36; from "Tung Pran, Takua Pa"); this paper
<i>Sphenomorphus maculatus</i>	This paper
<i>Tropidophorus robinsoni</i>	This paper; major range extension from the North
LACERTIDAE	
<i>Takydromus sexlineatus ocellatus</i>	This paper
VARANIDAE	
<i>Varanus bengalensis nebulosus</i>	ANONYMOUS (1996; " <i>V. bengalensis</i> "); CHAN-ARD et al. (1999: 240; " <i>V. nebulosus</i> "); this paper
<i>Varanus salvator</i>	ANONYMOUS (1996); CHAN-ARD et al. (1999: 147); this paper
TYPHLOPIDAE	
<i>Ramphotyphlops braminus</i>	CHAN-ARD et al. (1999: 220); PAUWELS et al. (2000); this paper
XENOPELTIDAE	
<i>Xenopeltis unicolor</i>	This paper
UROPELTIDAE	
<i>Cylindrophis ruffus</i>	CHAN-ARD et al. (1999: 221); this paper
PYTHONIDAE	
<i>Python brongersmai</i>	This paper
<i>Python reticulatus</i>	FRITH (1977a: 270); CHAN-ARD et al. (1999: 217); this paper
ACROCHORDIDAE	
<i>Acrochordus granulatus</i>	FRITH (1977a: 270); this paper
COLUBRIDAE	
<i>Ahaetulla prasina</i>	CHAN-ARD et al. (1999: 152); this paper
<i>Boiga cyanea</i>	FRITH (1977a: 284); this paper
<i>Boiga cynodon</i>	This paper
<i>Boiga dendrophila</i>	This paper
<i>Boiga drapiezii</i>	CHAN-ARD et al. (1999: 157)



- Boiga jaspidea*  
*Boiga nigriceps*  
*Cerberus rynchops*  
*Chrysopelea ornata*  
*Chrysopelea paradisi*  
*Dendrelaphis cyanochloris*  
*Dendrelaphis formosus*  
*Dendrelaphis pictus*  
*Dendrelaphis striatus*  
*Dryocalamus subannulatus*  
*Elaphe flavolineata*  
*Elaphe radiata*  
*Elaphe taeniura ridleyi*  
*Gonyosoma oxycephalum*  
*Homalopsis buccata*  
*Lycodon capucinus*  
*Lycodon laoensis*  
*Lycodon subcinctus*  
*Ptyas carinatus*  
*Ptyas korros*  
*Rhabdophis chrysargos*  
*Rhabdophis nigrocinctus*  
*Rhabdophis subminiatus*  
  
*Xenochrophis flavipunctatus*  
*Xenochrophis trianguligerus*  
  
 ELAPIDAE  
*Bungarus candidus*  
*Hydrophis ornatus*  
*Hydrophis spiralis*  
*Laticauda colubrina*  
  
*Naja kaouthia*  
  
*Ophiophagus hannah*  
  
 VIPERIDAE  
*Calloselasma rhodostoma*  
  
*Trimeresurus borneensis*  
*Trimeresurus hageni*  
*Trimeresurus popeiorum* ssp.  
*Trimeresurus purpureomaculatus*  
  
*Tropidolaemus wagleri*
- FRITH (1977a: 286; from the Elephant Mountain Cave, Phang-Nga City)  
 This paper  
 FRITH (1977a: 296); ANONYMOUS (1996); this paper  
 FRITH (1977a: 292, 293); this paper  
 This paper  
 FRITH (1977a: 279); this paper  
 This paper  
 This paper  
 This paper  
 This paper  
 FRITH (1977a: 273); SCHULZ (1996: 127)  
 FRITH (1977a: 272); SCHULZ (1996: 223); this paper  
 This paper  
 FRITH (1977a: 271); SCHULZ (1996: 181); this paper  
 CHAN-ARD et al. (1999: 169); this paper  
 ANONYMOUS (1996)  
 This paper  
 This paper  
 FRITH (1977a: 275)  
 FRITH (1977a: 274); this paper  
 CHAN-ARD et al. (1999: 185)  
 MANTHEY & GROSSMANN (1997: 389)  
 FRITH (1977a: 282); CHAN-ARD et al. (1999: 188); this paper  
 FRITH (1977a: 281); this paper  
 CHAN-ARD et al. (1999: 191)  
  
 VIRAVAN et al. (1992: 101)  
 PURANANANDA (1957: Fig. 7; "*Disleira ornata*")  
 FRITH (1977a: 301; 1977b)  
 THAMRONGNAWASAWAT & THIPHANAN (1998: 170; "*Similan*"); this paper  
 WÜSTER et al. (1995: 509); CHAN-ARD et al. (1999: 211); this paper  
 This paper  
  
 PURANANANDA (1957: Fig. 7); THUMWIPAT & NUTPHAND (1982: 51); VIRAVAN et al. (1992: 102); this paper  
 JINTAKUNE & CHANHOME (1995: 132; "*T. puniceus*")  
 JINTAKUNE & CHANHOME (1995: 130)  
 CHAN-ARD et al. (1999: 201)  
 FRITH (1977a: 302-303; Koh Surin); REGENASS & KRAMER (1981: 194; Koh Surin); VIRAVAN et al. (1992: 102); this paper  
 SMITH (1930: 90; "from Pang-nga"); TAYLOR (1965: 1070); CHANHOME et al. (1998: 312); this paper

Besides the specimens that we examined in the course of this study, accurate and unambiguous descriptions of some more taxa were recorded from native people, not included in Table 1. These species, immediately recognized on the pictures shown to them, are:

*Enhydryis plumbea* (Boie in Boie, 1827) (locally called *ngoo-kwang-kon*, and said to be especially common in pools in Takua Thung District);

*Bungarus fasciatus* (Schneider, 1801) (called *ngoo-sam-liam*);

*Maticora bivirgata flaviceps* (Cantor, 1839) (locally called *ngoo-sorn-lai* and said to be quite common along the streams at RFP, and also observed in the mountains near Phang-Nga City);

*Daboia russelii siamensis* (Smith, 1917), called *ngoo-pa-book*, and reported by many locals to be found, like *Calloselasma rhodostoma*, in the rubber plantations of Takua Pa and Tap-Phut Districts. The *ngoo-pa-book* is well distinguished from *Calloselasma* by the locals who know both species; it is said that the *ngoo-pa-book* is more venomous, that the place on the body that it bites "becomes spoiled", and that it "swells its body and hisses loudly when excited"; the confirmation of the occurrence of this species in Phang-Nga Province would greatly extend its range in Thailand (see VIRAVAN et al., 1992: 102).

Last, we may add to the fauna of Phang-Nga Province at least one more species of the genus *Trimeresurus*, based on local reports of the occurrence of a green pitviper (locally called *ngoo-kheeo-hang-mai*). It is probably *Trimeresurus albolabris* (Gray, 1842), but the occurrence of *T. stejnegeri* Schmidt, 1925, or a related undescribed species, cannot be ruled out. *T. stejnegeri* has been recorded as far south as Krabi Province (JINTAKUNE & CHANHOM, 1995), adjacent to Phang-Nga. This unidentified pitviper species might also be what THUMWIPAT & NUTPHAND (1982: 98) and NUTPHAND (1986: 78) cited from Phang-Nga Province as *Trimeresurus erythrurus* (Cantor, 1839). According to the picture published in THUMWIPAT & NUTPHAND (1982), it appears that this taxon is referable to what VOGEL (1990) and CHAN-ARD et al. (1999: 201) called *Trimeresurus popeiorum* ssp., a taxon which is in fact readily distinct from *T. erythrurus*. About the occurrence of this latter species in Thailand, COX (1991: 372) stressed that there is no evidence for its presence in the country. This well defined species, close to *T. albolabris* and currently known only from north-eastern India, Bangladesh and Myanmar (DAVID & INEICH, 1999), has apparently not been recorded from Myanmar south of Moulmein.

Based on our own observations and data already published, and not considering the four species above reported only by native people, the currently known herpetofauna of Phang-Nga Province is composed as follows (in number of species):

Chelonii	11	Lacertilia	32	TOTAL	92 SPECIES
Crocodylia	1	Serpentes	48		



The paucity of our knowledge of the herpetofauna of Thailand, which stands as the country with the best known herpetofauna in south-eastern Asia, is dramatically illustrated by the fact that 46 out of the 92 known species are recorded as new for the province in the present paper.

The number of reptile species from Phang-Nga Province will be obviously much increased when more material is available. A rapid survey of literature, local reports in Phang-Nga, and specimens collected in adjacent and near provinces suggest that, for snakes only, at least 50 more species (not including sea snakes) may be expected in Phang-Nga. Among them, we may cite especially *Ahaetulla nasuta*, *Cantoria violacea*, *Dendrelaphis caudolineatus*, *Dryophiops rubescens*, *Gongylosoma scriptum*, and *Maticora maculiceps* (all present on Phuket Island); *Amphiesma inas* and *Enhydris enhydris* (present in several southern provinces of the peninsula); *Boiga saengsomi* and *Maticora intestinalis* (known, among other provinces, from Krabi); *Macropisthodon flaviceps*, *Oligodon purpurascens*, *Psammodynastes pulverulentus*, *Xenelaphis hexagonotus*, and *Trimeresurus albolabris* (all at least known from Surat Thani); *Bungarus flaviceps* and *Ovophis monticola* (both known at least from Ranong Prov.); *Naja sumatrana*, *Trimeresurus* cf. *stejnegeri* (see above) and *Trimeresurus venustus* (known at least from Krabi and Surat Thani). On the same basis, we estimate that at least 25 additional lizards species might prove to be present in the province.

We may reasonably consider that all species of sea snakes listed by BUSSARAWIT et al. (1989) from Phuket Province are to be found on the coasts of Phang-Nga Province.

Some of the typhlopids collected by us might prove to be *Typhlops khoratensis* Taylor, 1962 (PAUWELS et al., 2000), a northern species not yet recorded from the peninsula. These specimens will be discussed elsewhere.

Commercial breeding stations of *Pelodiscus sinensis* (Wiegmann, 1835) exist in the province (ANONYMOUS, 1998: 94): some escaped specimen might be expected in the wild.

Although our survey is obviously incomplete, the reptile fauna of Phang-Nga Province is rich compared to its size and homogeneous climate. However, this richness is not as surprising, if one only considers the strategic location of the province at one extremity of the peninsula connecting West Malaysia and the Sundaland with the Asian mainland. Studies on the zoogeography of reptile species in this narrow area have unfortunately received little attention, in spite of its ideal geographical conformation which allows investigating the species ranges in a nearly linear dimension. In the frame of our researches on the herpetology of Thailand, we surveyed the reptile fauna of Phetchaburi Province (PAUWELS et al., in prep. [a]), which stands as a nearly northern symmetrical pendant to Phang-Nga Province relative to the Isthmus of Kra. We will

discuss the similarity of the reptile fauna between these two provinces on each side of the Isthmus, as a preliminary indicator of the influence of the Isthmus of Kra on short-distance variation of the herpetofauna in a forthcoming paper (PAUWELS et al, in prep.).

Conservation of biodiversity in south-eastern Asia is a major issue, considering the strong impact of deforestation and land management on the native fauna. The high number of Reptile species is a partial, although good indicator of the overall richness of the biodiversity of the province. The Thai Royal Forest Department has, since the 1980s, installed numerous protected areas in the province where many species can find refuge. Thanks to these efforts, this high biodiversity is still extant and accessible for further biological studies contributing to a better knowledge of tropical Asian species.

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<sup>2</sup> = JINTAKUNE; different spellings of Thai names are possible since there is no standard system of transliteration from Thai alphabet to Roman alphabet.

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#### EDITORIAL COMMITTEE

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#### ADDITIONAL COMMENTS OF THE EDITORIAL COMMITTEE

[a]. I prefer to use *Lygosoma* for the Asian species, pending a further reevaluation of *Riopa* and related genera (I. D.).