

## THE REPTILES SPECIES IN GUNUNG HALIMUN NATIONAL PARK, WEST JAVA, INDONESIA

[Reptilia di Taman Nasional Gunung Halimun, Jawa Barat, Indonesia]

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### ABSTRAK

Tiga puluh satu jenis reptilia dijumpai di Taman Nasional Gunung Halimun selama penelitian herpetofauna yang berlangsung dari bulan Oktober 2001 sampai bulan Agustus 2002. Ketiga puluh satu jenis yang dijumpai tersebut terdiri dari 3 jenis dari suku Gekkonidae, 7 jenis dari suku Agamidae, 1 jenis dari suku Lacertidae, 4 jenis dari suku Scincidae, 1 jenis dari suku Boidae, 13 jenis dari suku Colubridae, 1 jenis dari suku Elapidae dan 1 jenis dari suku Viperidae. Kadal jenis *Sphenomorphus punctiventris* adalah satu-satunya jenis yang endemic di Jawa yang dijumpai di TNGH. Kadal jenis *Mabuya multifasciata* paling sering dijumpai dan jumlahnya berlimpah; jenis ini dapat dijumpai tersebar luas di setiap tipe habitat yang terdapat di TNGH. Yang juga sering dijumpai adalah dua jenis ular *Ahaetulla prasina* dan *Dendrelaphis pictus*; kedua jenis ular ini kerap dijumpai di dalam hutan primer dan hutan sekunder pada ketinggian 700 sampai 1500 meter dari permukaan laut.

**Key words/ Kata kunci:** Reptiles/ Reptilia, Gunung Halimun National Park/ Taman Nasional Gunung Halimun, Biodiversity/ Biodiversitas.

### INTRODUCTION

The reptile fauna of Gunung Halimun National Park (GHNP) has never been previously reviewed systematically. The present study reviews the distribution and relative abundance of all the reptiles recorded on Gunung Halimun National Park and its buffer zone. This study is based largely on field surveys conducted during October 2001 to August 2002, together with records extracted from the literature and information provided by correspondents and local residents. The main objectives are to consolidate information on the distribution and to furnish a baseline that any future population changes can be measured.

### STUDY AREA

The study areas are located in ten survey sites, where the altitudes between 700 meters to 1900 meters above sea level (asl). The study sites elevation of Citalahab, Cikaniki, and Cianten are at elevation 1000 meters asl; Cibunar, Gunung Wangun, Gunung Bedil and Cigadog are between 700 to 1200 meters asl; Cikeris, Legok Karang and Gunung Botol are between 1500 to 1900 meters asl. In the ten study sites, seven habitat types were found. Citalahab, Cikaniki and Cigadog consist of rain forest, edificarian and

cultivated land; Cianten, Gunung Wangun, Gunung Bedil and consist of disturbed forest, secondary vegetation, ruderal and edificarian; whereas Cibunar, Cikeris, Legok Karang and Gunung Botol consist of rain forest and cloud forest. The average daily temperature is 25°C and at night between 15°C to 20°C. Relative humidity averages 70% to 85%. Brief descriptions of the habitats are following:

1. *Edificarian*: Building and other manmade structures of wood, stone, concrete and other materials provide an important habitat especially for some gecko species that are commensally with humans.
2. *Ruderal*: This habitat consists of grassy, weedy areas usually near settlements and adjacent to human habitation, includes roadsides ditch.
3. *Cultivated land*: Paddy field and tea plantations are dominant in this area.
4. *Disturbed forest*: Disturbed forest occurs frequently between 700 to 1000 meters asl, where many of native trees have been selective cut and the under story has been cleared or modified by human activity directly or by livestock.
5. *Secondary vegetation*: This habitat consists mainly of thickets of small trees, shrubs and vines where

the forest has been more severely disturbed, and most of the mature trees have been removed.

6. *Rainforest*: This is the most widespread and abundant vegetation type on the main area of Gunung Halimun National Park, ranging from 1000 meters to 1500 meters asl. Tree ferns are common in this habitat, especially at the higher elevation.
7. *Cloud forest*: This vegetation type known as moss forest, usually above 1500 meters asl. Mosses and fern festoon the trunks, limbs and branches of trees and shrubs, and they provide much of the ground cover.

## MATERIALS AND METHODS

Terms of abundance followed Buden (2000); the terms were used to appraise overall status are:

1. Common (at least 30 sightings/day in suitable habitat and under optimal weather condition).
2. Fairly common (10-30 sightings/day).
3. Uncommon (up to 10 sightings/day on most days).
4. Scarce (up to 5 sightings/day, but possibly unrecorded on more than half days).
5. Rare (under 5 sightings in most time survey).

Most of the sites were sampled only once during day or night or both. Counts were made by slowly walking through a selected habitat and recording individual encounters for each species. Voucher specimens were collected whenever possible. The suitable techniques of collecting of the species are:

### a. *Catching by hand*

This technique is suitable for snake and lizard by searching in micro habitats such as leaf litter, tree bark and buttresses, low lying vegetation and in or under logs.

### b. *Trapping*

This technique is fit only for small lizard such as gekkonid (Gekkonidae) or skinkid (Scincidae). The applied technique is using some small woods (size 20x30 cm) covered by rat glue will be used as lizard traps. They will be placed in several habitats of research areas such as grasslands, edificarian, disturbed forest and secondary vegetation, agroforest, rainforest and cloud forest. The capture animals were released by cooking oil.

In the case of the animals that are easy to identified, even at considerable distance, relatively little collecting effort was expanded. A much greater effort was directed toward collecting examples of the animals, which are at times difficult to distinguish, by sight under field conditions. All of specimens were deposited in Museum Zoologicum Bogoriense (MZB), Cibinong, West Java, Indonesia.

In identification, major taxonomy of the gekkonid and skinkid, were based de Rooij (1915), whereas especially for *Sphenomorphus puncticentralis* was based on Iskandar (1994); for Ophidia or snakes were based on de Rooij (1917), Tweedie (1983) and Stuebing and Inger (1999); and for agamid based on Musters (1983). Major nomenclature of lizards and snakes Iskandar and Colijn (2001) and Iskandar and Colijn (in printed) were used; and for gekkonid, Bauer (1994) was used.

## RESULTS

Thirty-one species of reptiles were found in Gunung Halimun National Park during herpetofauna surveys since October 2001 to August 2002. They consisted of three species of gekkonidae, seven species of agamidae, one species of lacertidae, four species of scincidae, one species of boidae, thirteen species of colubridae, one species of elapidae and one species of viperidae. Natural history of species found are described below.

### Lizards

#### Gekkonidae

*Cyrtodactylus marmoratus* (Gray, 1831)

*Habits and Habitat*: Marbled Bow-Fingered Gecko is widespread in Gunung Halimun National Park. It is generally scarce in almost survey sites, occurring mainly in rainforest and open areas where adjacent to rain forest. The gecko was found at elevation 700 to 1500 meters asl and usually not far from stony strong water stream.

*Geographic Range*: Indo-Australian Archipelago and New Guinea (Bauer, 1994).

***Gehyra mutilata* (Wiegman, 1834)**

*Habits and Habitat:* Stump-Toed Gecko is widespread in Gunung Halimun National Park. The gecko is common at elevation between 700 to 1000 meters asl in the survey areas such as Cigadog, Gunung Wangun, Cianten and Gunung Bedil, and become scarce at elevation above 1000 meters asl. It occurs in edificarian areas and usually seen on building or any human settlements.

*Geographic Range:* India, SE Asia, Indonesia, Philippines, Pacific (Iskandar & Colijn, in printed).

***Hemidactylus frenatus* Dumeril & Bibron, 1836**

*Habits and Habitat:* House Gecko is widespread in Gunung Halimun National Park. The gecko lives sympatric with Stump-Toed Gecko; both of geckos species have similar habit.

*Geographic Range:* Southern and southeast Asia, Indo-Australian Archipelago, Philippines, Polynesia, Micronesia, Melanesia, Taiwan, Rhukyu Islands.

Agamidae

***Draco fimbriatus hennigi* Muster, 1983**

*Habits and Habitat:* The species only found in Cigadog survey sites (elevation 800 meters asl), occurs in disturbed forest and on some trees in primary forest that close to open area. It is fairly common in the survey area.

*Geographic Range:* Java, Bali (Muster, 1983).

***Draco haematopogon* Gray, 1831**

*Habits and Habitat:* The species also found in Cigadog survey sites (elevation 800 meters asl), occurs in disturbed forest and on some trees in primary forest that close to open area. It is scarce in the survey area. Based on Muster (1983), *D. haematopogon* is found to an altitude of about 1200 meters asl.

*Geographic Range:* Southern Thailand, Malaya, Sumatra, Borneo, Java (Muster, 1983).

***Draco volans volans* Linnaeus, 1758**

*Habits and Habitat:* Flying Dragon is one of the most familiar names for *P. volans*. The species were found in survey sites at elevation between 700 to 1000 meters asl, such as Cianten, Cigadog, Gunung Bedil, Gunung Wangun and Legok Karang. It is fairly common in the

survey sites, and usually found on three trunks in disturbed forest, secondary vegetation and sometimes seen on Pines tree trunk.

*Geographic Range:* Java, Bali (Muster, 1983).

***Bronchocela cristatella* (Kuhl, 1820)**

*Habits and Habitat:* The species was found in Cigadog and Legok Karang survey sites at elevation 700 and 1000 meters asl. It is scarce in the sites and only found in cultivated land such as crop plantation where close to human habitation, it is never seen in rain forest.

*Geographic Range:* SE Asia, W. Malaysia, Sumatra, Borneo, Java, Sulawesi, Maluku, New Guinea, Philippines (Iskandar and Colijn, in printed).

***Bronchocela jubata* Dumeril & Bibron, 1837**

*Habits and Habitat:* The species is widespread in Gunung Halimun National Park. It occurs at elevation between 700 to 1500 meters asl, and usually found around crop plantation where close to human habitation; it is never seen in rain forest. It is generally fairly common in most of survey sites. Because of its habit likes to forage insect around crop plantation, most of local people blame it as a pest.

*Geographic Range:* Sumatra, Java (Iskandar and Colijn, in printed).

***Gonocephalus chamaeleontinus* (Laurenti, 1768)**

*Habits and Habitat:* The species was only found at elevation about 800 meters asl in Cigadog survey site; occurs in rainforest and disturbed forest. It is seen on tree trunk in diameter up to 30 cm. This is rare species in the survey site, because only two individuals found in the most survey times. The rare of the species possibly because of its habit likes to roost on the tips of thin tree branches (Manthey and Schuster, 1996), so they were missed in observations.

*Geographic Range:* Tioman Island (western Malaysia), Sumatra and a few nearby islands, Natuna Islands, Java (Manthey and Schuster, 1996).

***Gonocephalus kuhlii* (Schlegel, 1848)**

*Habits and Habitat:* The species was only found in survey sites Cibunar, Cikaniki and Citalahab; occurs at elevation 1000 to 1200 meters asl, and it is only found in rain forest. Generally it is fairly common in the survey sites. Based on Manthey and Schuster

(1996), *G. kuhlii* is more common at higher altitudes up to about 1600 meters asl than in lowlands.

*Geographic Range:* Sumatra, Java (Manthey and Schuster, 1996).

***Pseudocalotes tympanistriga* (Gray, 1831)**

*Habits and Habitat:* The species was found at elevation 1000 to 1800 meters asl in Cibunar, Cikaniki, Citalahab and Gunung Botol survey sites. They were seen among shrub branches in rain forest or shrubs at the adjacent of rain forest. It is fairly common species in the sites.

*Geographic Range:* Sumatra, Java (Manthey and Schuster, 1996).

**Lacertidae**

***Tachydromus sexlineatus sexlineatus* Daudin, 1802**

*Habits and Habitat:* Asian Grass Lizard is widespread in Gunung Halimun National Park. It lives in tall grass in ruderal habitat where close to human habitation or in cultivated land. Usually it appears when the sunlight shines very strong. The lizard is never seen in rainforest. This species is fairly common in the sites.

*Geographic Range:* W. Malaysia, Sumatra, Java (Iskandar and Colijn, in printed).

**Scincidae**

***Mabuya multifasciata multifasciata* (kuhl, 1820)**

*Habits and Habitat:* East Indian Brown Mabuya is widespread in Gunung Halimun National Park. It occurs abundant at elevation between 700 to 1700 meters asl and become very abundant in lowland forest such as rain forest in Ujung Kulon National Park (Kurniati *et al*, 2001). It is one of the most common lizards in the park, being most numerous in agroforest, disturbed forest and secondary vegetation. It usually occurs on the rain forest floor in areas where patches of sunlight have filtered through the canopy.

*Geographic Range:* India, SE Asia, Thailand, W. Malaysia, Sundaland, New Guinea, Philippines (Iskandar and Colijn, in printed).

***Sphenomorphus puncticentralis* Iskandar, 1996**

*Habits and Habitat:* First describing of this species was based on a specimen from Baturaden, Central Java; the specimen was captured on a small tree in an

open secondary forest (Iskandar, 1994). However in Gunung Halimun National Park, it was found on forest floor in the rain forest at Cicemet Trail in Citalahab survey site. So far this lizard is rare in the site. No specific local name for this species. This is an endemic scincidae to Java.

*Geographic Range:* Java (Iskandar, 1994).

***Sphenomorphus sanctus* (Dumeril & Bibron, 1839)**

*Habits and Habitat:* This is an arboreal lizard that found in Cigadog survey site. It occurs in degraded forest at elevation 800 meters asl. This species is fairly common in the site. In Ujung Kulon National Park, it was widespread and common over the mainland (Kurniati *et al*, 2001).

*Geographic Range:* W. Malaysia, Sumatra, Java (Iskandar and Colijn, in printed).

***Sphenomorphus temmincki* (Dumeril & Bibron, 1839)**

*Habits and Habitat:* This lizard was seen in Cianten and Gunung Botol survey sites at elevation 1000 and 1800 meters asl; possibly it occurs between 1000 to 1800 meters asl. It occurs under life litter or dead log in degraded forest in Cianten and in cloud forest in Gunung Botol. This is a cryptic lizard that not easy to find.

*Geographic Range:* W. Malaysia, Sumatra, Java (Iskandar and Colijn, in printed).

**Ophidia or snakes**

**Boidae**

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

*Habits and Habitat:* Reticulate Python was collected in 2000 at Citalahab Village (elevation 1000 meters asl); its length about four meters. The snake was eating a dog when it was caught by local people. Reticulate Python usually occurs in almost all lowland habitat (Steubing and Inger, 1999), however its present at high elevation such as Citalahab Village is uncommon. Information from local people in southern part of Gunung Halimun National Park (elevation about 700 meters asl), the snake usually seen around paddy field to forage rats.

*Geographic Range:* SE Asia, Java, Sumatra, Borneo, Sulawesi, Maluku, Lesser Sunda Islands, Philippines Islands (Welch, 1988).

Colubridae

*Ahaetulla prasina* (Boie, 1827)

*Habits and Habitat:* Green Vine Snake is widespread in Gunung Halimun National Park at elevation between 700 to 1000 meters asl. It occurs in shrubby, secondary vegetation to rain forest. Generally, the snake is common in the park, but scarce in the survey sites.

*Geographic Range:* India, SE Asia, Sumatra, Java, Borneo, Sulawesi, Bali, Lombok, Sumbawa, Sangihe Islands, Ternate, Philippines Islands (Welch, 1988).

*Aplopeltura boa* (Boie, 1828)

*Habits and Habitat:* Blunt-Headed Tree Snake was found in Citalahab, Cikaniki and Cibunar survey sites at elevation about 1000 meters asl. It is a nocturnal shrub and forest-dweller. Its main food is snail (Steubing and Inger, 1999). In the sites, the snake is rare, possibly because it is not easy to see.

*Geographic Range:* Thailand, West Malaysia, Java, Sumatra, Borneo, Philippines Islands (Welch, 1988)

*Calamaria lumbricoidea* Boie, 1827

*Habits and Habitat:* This snake was found in Gunung Wangun survey site at elevation 800 meters asl. It occurs in shady garden where close to human habitation. The snake is rare in the site.

*Geographic Range:* Thailand, West Malaysia, Java, Sumatra, Borneo, Philippines Islands (Welch, 1988).

*Calamaria schlegelii cuvieri* Jan, 1827

*Habits and Habitat:* Pink-headed Reed Snake was found in Citalahab, Gunung Botol, and Legok Karang survey sites at elevation between 1000 to 1700 meters asl. It occurs in rain forest, secondary vegetation or shady garden where close to human habitation. The snake is scarce in the sites.

*Geographic Range:* Java and Bali (Welch, 1988).

*Dendrelaphis pictus* (Gmelin, 1789)

*Habits and Habitat:* Painted Bronze-Back Snake is arboreal snake that was found and seen in most of survey sites at elevation between 700 to 1000 meters asl (Citalahab, Cikaniki, Cianten, Cigadog, Cibunar and Gunung Wangun), although it is uncommon in the sites. It occurs in rain forest, disturbed forest and secondary vegetation.

*Geographic Range:* India, SEAsia, Sumatra, Java, Bali, Lombok, Borneo, Sulawesi, Maluku, Philippines Islands (Welch, 1988).

*Liopeltis baliodeirus* (Boie, 1827)

*Habits and Habitat:* Spotted Ground Snake was found in Citalahab, Cikaniki and Cianten survey sites at elevation about 1000 meters asl. It occurs in rain forest, disturbed forest and secondary vegetation. It is scarce snake in the site; but based on Steubing and Inger (1999), this snake is one of the commonest snakes of the floor of lowland forest from near sea level to about 600 meters asl.

*Geographic Range:* Thailand, West Malaysia, Java, Sumatra, Borneo (Welch, 1988).

*Liopeltis tricolor* (Schlegel, 1837)

*Habits and Habitat:* Masked Ground Snake was only found in Cigadog survey site at elevation 700 meters asl. In Ujung Kulon the snake was found in lower boughs of *Calamus* vegetation overhanging the beach (Kurniati *et al*, 2001), however in Gunung Halimun, it occurs in secondary vegetation. All of the observations of it in Borneo were made in lowland forest (Steubing and Inger, 1999).

*Geographic Range:* Thailand, Malaysia, Java, Sumatra, Borneo, Philippines (Iskandar and Colijn, 2001).

*Psammodynastes pulverulentus* (Boie, 1827)

*Habits and Habitat:* Dusky Mock Viper was found in Legok Karang survey site at elevation 1500 meters asl. It occurs in rain forest. In Borneo the snake lives in rain forest below 750 meters asl (Steubing and Inger, 1999); it also found in Ujung Kulon at sea level elevation (Kurniati *et al*, 2001).

*Geographic Range:* China, Taiwan, India, Nepal, Bhutan, Bangladesh, Myanmar, SE Asia, Java, Sumatra, Borneo, Lesser Sunda Islands, Sulawesi, Philippines Islands (Iskandar and Colijn, 2001).

*Rhabdophis chrysargos* (Schlegel, 1837)

*Habits and Habitat:* Speckle-Bellied Keelback occurs in rain forest and edificarian at elevation between 700 to 1500 meters asl. It is common in the sites where found fish pond (Citalahab, Cikeris, Cigadog, Gunung Wangun, Gunung Bedil and Cianten), besides in rain

forest (Cikaniki survey site) and also found in lowland forest in Ujung Kulon (Kurniati *et al*, 2001); the snake is often seen on rain forest floor at some distance from stream banks.

*Geographic Range:* China, SE Asia, Java, Sumatra, Bali, Sulawesi, Flores, Philippines Islands (Iskandar and Colijn, 2001).

*Rhabdophis subminiatus* (Schlegel, 1837)

*Habits and Habitat:* Redneck Keelback Snake was found in Cigadog survey site at elevation 700 meters asl. In Gunung Halimun, it occurs in edificarian as well as in Ujung Kulon (Kurniati *et al*, 2001). By nature, Redneck Keelback Snake inhabits montane forest, hills and lowland areas, particularly near streams or rivers (Keng and Tat-Mong, 1990; Tweedy, 1983). Based on interview to local people, the snake often seen in their village at the areas where close to fish ponds.

*Geographic Range:* China, South Myanmar, SEAsia, Java, Sumatra, Borneo (Iskandar and Colijn, 2001).

*Xenochrophis trianguligerus* (Boie, 1827)

*Habits and Habitat:* Red-Sided Snake was found in Cianten and Cigadog survey sites, at elevation 700 and 1000 meters asl. It occurs in edificarian where fish ponds present. According to Steubing and Inger (1999), stream banks are the usual habitat for this snake, and also occurs around small ponds and in swamps. The snake is common in its usual habitat (Steubing and Inger, 1999) and in the lowland and ranges up into the mountains over 1000 meters (Tweedy, 1983).

*Geographic Range:* India, Myanmar, SE Asia, Java, Bali, Sumatra, Borneo, Sulawesi, Sangihe Islands (Iskandar and Colijn, 2001).

*Xenodermus javanicus* Reinhardt, 1836

*Habits and Habitat:* Rough-Backed Litter Snake was only found in Citalahab survey site at elevation 1000 meters asl. In Java, the snake has been found from 500 to 1000 meters asl, most often at the edge of harvested paddy field; but naturally, it is a nocturnal forest floor snake that lives under leaf litter (Steubing and Inger, 1999). In Citalahab survey site, it was collected under stone where close to small stream in the rain forest. This snake is rare in Gunung Halimun.

*Geographic Range:* Myanmar, Thailand, Malaysia, Java, Sumatra, Borneo (Iskandar and Colijn, 2001).

## Elapidae

*Bungarus candidus* (Linnaeus, 1758)

*Habits and Habitat:* Malayan Krait Snake was found around Gunung Walang (Gunung Halimun buffer zone) at elevation about 600 meters asl where close to Gunung Bedil survey site. According to Keng and Tat-Mong (1990), the Malayan Krait is fairly distributed, and inhabits hill forest; however in Gunung Halimun, it occurs around paddy field. Based on interview to local people, this snake is often seen in footpath ditch around paddy field after heavy rain.

*Geographic Range:* Vietnam, Cambodia, Malaysia, SE Thailand, Java, Bali, Sumatra, Sulawesi (Golay *et al*, 1993).

## Viperidae

*Trimeresurus puniceus* (kuhl, 1824)

*Habits and Habitat:* Flat-Nosed Pit Viper was seen in Citalahab, Cikaniki and Cibunar survey sites at elevation about 1000 meters asl. It occurs in rain forest, usually seen on tree branch but sometimes on forest floor. Based on interview to local people, Flat-Nosed Pit Viper sometimes seen around tea plantation.

*Geographic Range:* Java, Sumatra, Natuna (Golay *et al*, 1993).

## DISCUSSION

Thirty-one species of terrestrial reptiles are resident to Gunung Halimun National Park. *Spenomorphus puncticentralis* is the only endemic skink to Java which inhabit in Gunung Halimun. The species was described from one individual that collected from BatuRaden, Central Java, at elevation 700 meters asl; it was captured on a small tree in an open secondary forest (Iskandar, 1994); however, the skink from Gunung Halimun was captured on forest floor in rain forest at elevation 1000 meters asl. Possibly, *S. puncticentralis* has widespread distribution in Java after it was discovered in Gunung Halimun National Park.

Most of reptiles in Gunung Halimun National Park are numerous in disturbed habitat, including edificarian, ruderal, cultivated land, disturbed forest and secondary vegetation. However, *Gonocephalus kuhlii*, *Aplopeltura boa* and *Psammodynastes pulverulentus* occur mainly in rain forest. Although only few species are restricted in rain forest, but many species of reptiles use disturbed habitat as temporary place, they still need rain forest for their native habitat. So the enormous changes that take place when forest is removed can quickly bring about the demise of species through dessication, lethal temperatures and loss of prey items (Steubing and Inger, 1999). Among forest species

Thirty-two species of reptiles recorded in Gunung Halimun National Park. The majority of the species found are snakes; it is probably a reflection of the high diversity of snake species, most of which are characterized by low population densities and elusive nature. Several unfamiliar snake species were sighted that evaded to capture; it is likely that many species of snake in Gunung Halimun await discovery.

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