

Species Diversity and Checklist of the Herpetofauna of Pulau Tioman, Peninsular Malaysia, With a Preliminary Overview of Habitat Utilization

JESSE L. GRISMER¹, L. LEE GRISMER¹, INDRANEIL DAS², NORSHAM S. YAAKOB³,
LIM BOO LIAT⁴, TZI MING LEONG⁵, TIMOTHY M. YOUMANS¹, AND HINRICH KAISER¹

¹*Department of Biology, La Sierra University, Riverside, CA 92515-8247, USA*

²*Institute of Biodiversity and Environmental Conservation, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak, Malaysia*

³*Forest Research Institute Malaysia, Kepong, 52109 Kuala Lumpur, Malaysia*

⁴*Taman Negara (PERHILITAN), Km 10 Jalan Cheras, 50664 Kuala Lumpur, Malaysia*

⁵*Department of Biological Sciences, National University of Singapore, Singapore 119260*

Abstract. - The environmental diversity of Pulau Tioman, a 48 km² island off the eastern coast of Peninsular Malaysia, supports a remarkably diverse herpetofauna (97 species) with 22 frogs, one caecilian, one non-marine turtle, 34 lizards, and 39 snakes. The majority of this herpetofauna (74%) occurs in lowland dipterocarp forests. Fifteen new island records and eight newly described, or as yet undescribed, species are reported, bringing the number of endemic species to at least 11.

Key words. - Pulau Tioman, Malaysia, herpetofauna, habitat diversity, checklist.

Introduction

Pulau Tioman (Tioman Island) is centrally located on the Sunda Shelf 38 km off the southeast coast of Peninsular Malaysia in the South China Sea (Fig. 1). Despite its small size of approximately 48 km², it supports a diverse array of habitats. The island's coastline and low-lying periphery is dominated by mangrove and coastal vegetative communities whereas inland areas support lowland dipterocarp forest on the alluvial foothills and hill dipterocarp forest at upper elevations (Latiff et al. 1999). Topographically, Pulau Tioman is characterized by steep mountainous terrain reaching 1,035 m in elevation. Exposed granitic outcroppings consisting of large boulders define much of the island's rugged interior and its slopes are cut by several fast-flowing, boulder-strewn streams. As discussed below, this environmental diversity contributes to the island's remarkable herpetological diversity with 23 amphibians, one non-marine turtle, 33 lizards, and 39 snakes now confirmed as present on the island (Table 1). This is in contrast to the relative depauperate herpetofauna of the surrounding islands of Tulai (Grismer et al., 2001b), Aur (Escobar et al., 2002a; Grismer et al., 2001a), Dayang (Wood et al., 2003), Pemanggil (Youmans et al., 2002), Sembilan and Seribuat (Wood et al. in prep), Sibul and Besar (Wood et al., 2004a,b) and Tinggi (Escobar et al., 2002b).

Prior to Hendrickson (1966a,b), no herpetofaunal survey had been undertaken on Pulau Tioman and only

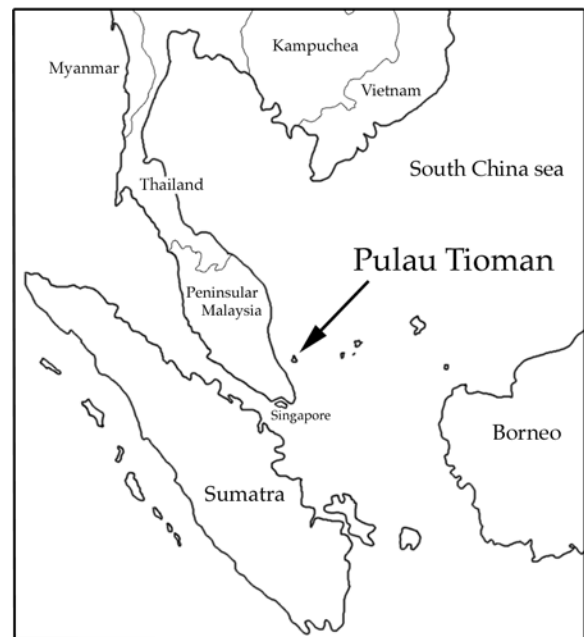


Figure 1. Location of Pulau Tioman, West Malaysia, in the South China Sea.

limited accounts on particular taxa existed (i.e., Boulenger, 1912; Smith, 1930; de Haas, 1949). However, despite the thoroughness of Hendrickson (1966a,b) and subsequent efforts by Day (1990), Lim and Lim (1999), Hien et al. (2001), and Grismer et al. (2002a), the herpetofauna of this small island still

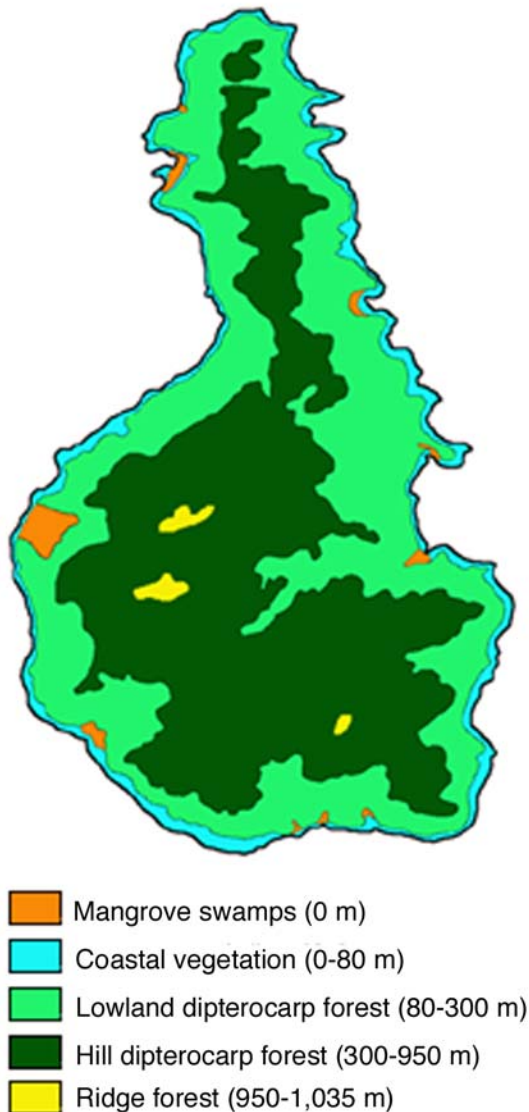


Figure 2. Distribution of vegetation zones on Pulau Tioman. Modified from Latiff et al. (1999).

remains incompletely known. This is evidenced by the 13 new island records since Grismer et al. (2002a) and Hien et al. (2001) and eight newly described and undescribed species reported herein. Additionally, there has been no attempt to establish the distribution or habitat use of each species on Pulau Tioman. Therefore, the intent of this paper is to report the results of the latest herpetofaunal surveys which not only list new additions to the island but new island localities of species known to be present. The latter will serve as the basis for a preliminary categorization of habitat use for each species based on its presence in different vegetation zones.

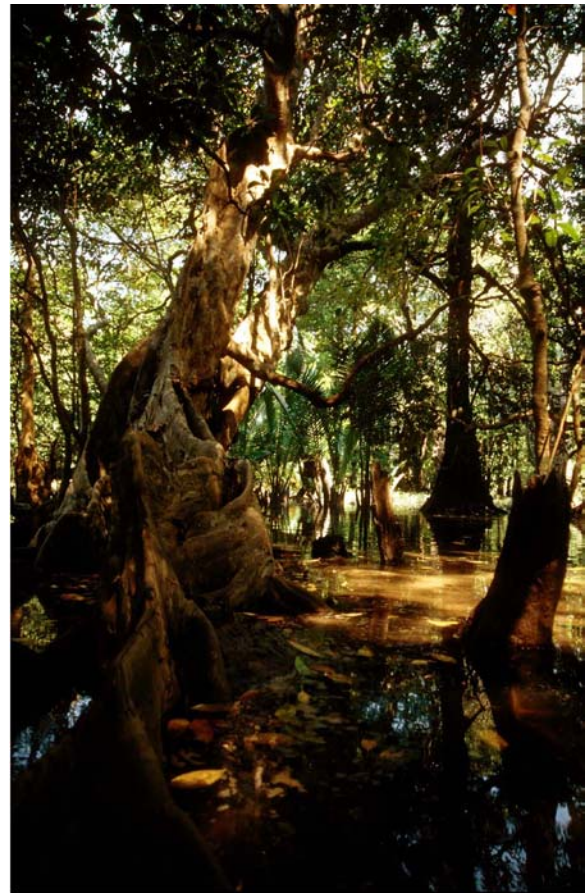


Figure 3. Mangrove swamp at Kampung Paya.

Vegetation Zones

Vegetation zones generally serve to highlight broad categorical differences between habitats across sizable geographic areas. On Pulau Tioman, as elsewhere, these categorical differences lack well-defined geographic boundaries (Ashton, 1995) and with the exception of mangrove communities, each zone transitions smoothly and continuously into another along an altitudinal transect. We use five different vegetation zones (Fig. 2), modified after Latiff et al. (1999), to characterize habitat differences on Pulau Tioman.

Mangroves (0 m; Fig. 3). - Mangrove swamps are disjunctly distributed along the island's coastline. Characteristic plant species include *Rhizophora apiculata*, *Bruguiera gymnorhiza*, *Excoecaria agallocha*, and *Avicennia alba*, which in some localities are unusually tall with large girth, attesting to the old age of the grove.

Coastal vegetation (0-80 m; Fig. 4). - Coastal vegetation forms a relatively narrow zone between the mangrove swamps (when present) and the lower reaches of the lowland dipterocarp forest. It is characterized by



Fig. 4. Coastal vegetation at Telok Nipah.



Fig. 5. Lowland dipterocarp forest on Tekek-Juara trail.



Fig. 6. Hill dipterocarp forest on Gunung Kajang.



Fig. 7. Ridge forest at summit of Gunung Kajang.



Figure 8. Collecting localities on Pulau Tioman. G. = Gunung (mountain); Kg. = Kampung (village); S. = Sungai (river); Tk. = Telok (bay); U. = Ulu (headwater).

palms, such as *Pandanus dubius*, and moderately-sized trees such as *Scaevola taccada*, *Calophyllum inophyllum*, and *Vitex trifolia*. Dipterocarp trees are noticeably absent.

Lowland dipterocarp forest (80-300 m; Fig. 5). - Lowland dipterocarp forest occurs on the alluvial slopes between coastal vegetation and hill dipterocarp forest and is usually dominated by large non-dipterocarp trees such as *Arenga pinnata*, *Caryota mitis*, and *Nenga macrocarpa*. A few large dipterocarp species such as *Anisoptera curtisii* and *Neobalanocarpus heimii* exist as emergents.

Hill dipterocarp forest (300-950 m; Fig. 6). - This zone is situated immediately above and adjacent to the lowland dipterocarp forest with which it is continuous. The transition from lowland dipterocarp forest to hill dipterocarp forest at approximately 300 m is essentially imperceptible and many plant species common to the lowland dipterocarp forest occur at lower elevations in the hill dipterocarp forest, a pattern paralleled by some species of amphibians and reptiles. To illustrate this we use the term low hill dipterocarp forest (300-500 m) and high hill dipterocarp forest (500-950 m). Hill dipterocarp

forest is dominated throughout by large species of *Shorea* and *Dipterocarpus*.

Ridge forest (hill top summits between 950-1035 m; Fig. 7). - Ridge forest occurs on summits where mosses, ferns, lichens, and bryophytes predominate. Due to increased exposure to sun and wind, trees are relatively short. At this altitude, species such as *Garcinia penangiana*, *Licuala tiomanensis*, and *Scleria sumatrensis* dominate and presumably have adapted to live in the damp wind-blown environment typical of ridge forests.

Materials and Methods

Our data were collected from various localities (Fig. 8) on five trips; 12-24 March and 7-16 July, 2001 and 19-27 March, 13-21 July, and 6-19 August, 2002 unless indicated otherwise. Individuals sighted but not collected or photographed are listed but considered to be unconfirmed records. Collecting was done during the day by hand and blowpipes and at night by torch light. During July 2001 and 2002, three pitfall trap arrays with three 15-m drift fence sections at each array were stationed in lowland dipterocarp forest at 142 m and 241 m along the Tekek-Juara trail. A third array was estab-

Table 1. Species checklist and vegetation zone utilization of the amphibians and reptiles of Pulau Tioman. Data are derived from Hendrickson (1966a,b), Day (1990), Lim and Lim (1999), Grismer et al. (2002a) and this report. M = Mangrove; CV = Coastal vegetation; LD = Lowland dipterocarp forest; LHD = Low hill dipterocarp forest; HHD = High hill dipterocarp forest; and RF = Ridge forest; * = Species is endemic.

	M	CV	LD	LHD	HHD	RF
Megophryiidae						
<i>Leptolalax kajangensis</i> *				X	X	X
<i>Megophrys nasuta</i>			X	X	X	
Bufonidae						
<i>Ansonia tiomanica</i> *			X	X	X	X
<i>Bufo asper</i>		X	X			
<i>Bufo melanostictus</i>		X	X			
<i>Bufo parvus</i>		X	X			
<i>Pelophryne brevipes</i>					X	X
Microhylidae						
<i>Chaperina fusca</i>		X	X	X		
<i>Kalophrynus pleurostigma</i>		X	X	X	X	
<i>Kaloula baleata</i>		X				
<i>Kaloula pulchra</i>		X	X			
Ranidae						
<i>Fejervarya cancrivora</i>	X	X		X		
<i>Limnonectes blythii</i>		X	X			
<i>Limnonectes hascheanus</i>		X	X			
<i>Rana chalconota</i>		X	X	X		
<i>Rana erythraea</i>	X	X		X		
<i>Rana hosii</i>			X	X		
<i>Rana picturata</i>			X	X		
Rhacophoridae						
<i>Nyctixalus pictus</i>			X	X		
<i>Philautus petersi</i>					X	X
<i>Polypedates leucomystax</i>		X	X	X		
<i>Theلودerma horridum</i>		X	X			
Ichthyophiidae						
<i>Ichthyophis</i> sp.			X			
Trionychidae						
<i>Dogania subplana</i>		X	X	X		
Agamidae						
<i>Acanthosaura armata</i>		X	X	X	X	

Table 1. Continued

	M	CV	LD	LHD	HHD	RF
Agamidae						
<i>Aphaniotis fusca</i>			X	X		
<i>Bronchocele cristatella</i>		X	X	X		
<i>Draco fimbriatus</i>		X	X			
<i>Draco haematopogon</i>		X	X	X	X	
<i>Draco melanopogon</i>		X	X	X	X	
<i>Draco sumatranus</i>	X	X	X	X	X	
<i>Gonocephalus chamaeleontinus</i>			X	X	X	
<i>Gonocephalus grandis</i>			X	X		
Gekkonidae						
<i>Cnemaspis kendallii</i>		X	X	X		
<i>Cnemaspis limi</i>		X	X	X	X	X
<i>Cosymbotus craspedotus</i>		X	X			
<i>Cosymbotus platyurus</i>		X	X			
<i>Cyrtodactylus quadrivirgatus</i>			X	X	X	
<i>Cyrtodactylus tiomanensis*</i>		X	X	X	X	
<i>Gelyra mutilata</i>			X			
<i>Gekko monarchus</i>		X	X			
<i>Gekko smithii</i>			X	X		
<i>Hemidactylus frenatus</i>		X				
<i>Lepidodactylus lugubris</i>		X				
<i>Pychozoon kuhli</i>		X	X	X		
Scincidae						
<i>Dasia olivacea</i>		X	X	X	X	
<i>Emoia atrocostata</i>	X					
<i>Eutropis longicaudata</i>		X				
<i>Eutropis multifasciata</i>		X	X	X		
<i>Larutia seribuatensis*</i>			X		X	
<i>Lipinia surda</i>		X	X			
<i>Lipinia vittigera</i>		X	X	X		
<i>Lygosoma bowringii</i>		X	X			
<i>Sphenomorphus scotophilus</i>		X	X	X	X	X
<i>Sphenomorphus</i> sp.*			X	X	X	X
Varanidae						
<i>Varanus nebulosus</i>		X	X			
<i>Varanus salvator</i>	X	X				

Table 1. Continued

	M	CV	LD	LHD	HHD	RF
Dibamidae						
<i>Dibamus tiomanensis</i> *	X	X	X			
Typhlopidae						
<i>Ramphotyphlops albiceps</i>			X			
<i>Ramphotyphlops braminus</i>	X	X				
Pythonidae						
<i>Python reticulatus</i>	X	X	X			
Colubridae						
<i>Ahaetulla prasina</i>		X	X	X	X	
<i>Boiga cynodon</i>		X	X			
<i>Boiga drapiezii</i>		X	X	X		
<i>Boiga nigriceps</i>		X	X	X		
<i>Calamaria ingeri</i> *				X		
<i>Calamaria lumbricoidea</i>			X	X	X	X
<i>Calamaria pavimentata</i>			X			
<i>Cerberus rynchops</i>	X			X		
<i>Chrysopelea pelias</i>			X			
<i>Dendrelaphis caudolineatus</i>		X	X			
<i>Dendrelaphis cyanochloris</i>			X			
<i>Dendrelaphis pictus</i>		X	X			
<i>Denderlaphis striatus</i>		X	X			
<i>Dryocalamus subannulatus</i>		X	X			
<i>Dryophiops rubescens</i>		X	X			
<i>Elaphe flavolineata</i>		X				
<i>Elaphe taeniura</i>		X	X			
<i>Enhydris enhydris</i>	X	X				
<i>Enhydris plumbea</i>	X	X				
<i>Fordonia leucobalia</i>	X	X				
<i>Gonylosoma muketense</i> *		X	X			
<i>Gonyosoma oxycephalum</i>	X	X				
<i>Lepturophis albofuscus</i>			X	X	X	
<i>Liopeltis tricolor</i>			X	X	X	
<i>Oligodon purpurascens</i>			X	X	X	
<i>Oligodon booliati</i> *			X	X	X	
<i>Pareas vertebralis</i>						X
<i>Psammodynastes pulverulentus</i>	X	X	X	X	X	

Table 1. Continued

	M	CV	LD	LHD	HHD	RF
Colubridae						
<i>Ptyas carinatus</i>		X	X			
<i>Rhabdophis chrysargos</i>	X	X	X	X		
<i>Sibynophis melanocephalus</i>		X				
Elapidae						
<i>Bungarus flaviceps</i>			X			
<i>Calliophis intestinalis</i>			X	X	X	
<i>Ophiophagus hannah</i>	X	X				
Viperidae						
<i>Trimeresurus</i> sp.*			X	X	X	
Unconfirmed Species						
<i>Chrysopelea paradisi</i>						
<i>Naja sumatrana</i>						

lished on the beach near boulders in coastal vegetation 1 km south of Kampung Tekek. Collecting site elevations were estimated with the aid of a hand-held global positioning satellite unit. Distribution data for species not addressed in the accounts below but listed in Table 1 were taken from Lim and Lim (1999).

Representatives of all species collected were photographed, tissue for liver, preserved, and deposited in the Department of Wildlife (PERHILITAN; JAM cat. nos.), Kuala Lumpur, Malaysia; Forest Research Institute of Malaysia (FRIM), Kuala Lumpur, Malaysia; the Zoological Reference Collection (ZRC) of the Raffles Museum of Biodiversity Research at the National University of Singapore; and the La Sierra University Herpetological Collection (LSUHC), Riverside, California, USA. Material from Hendrickson's (1966a,b) collection deposited in the Bishop Museum (BPBM), Honolulu, Hawai'i and Day's (1990) collection (uncatalogued in the British Museum of Natural History, London) was also examined. All tissues have been deposited at La Sierra University. Photographs are catalogued in the La Sierra University Photographic Collection (LSUPC) in the herpetology laboratory of L. Lee Grismer. The taxonomy of ranid genera follows Inger and Voris (2001).

Annotated Checklist

Amphibia

Order: Anura

Family: Megophryidae

Leptotalax kajangensis Grismer, Grismer, and Youmans, 2004
(Fig. 9)

Localities. - Larvae collected from 400 m on Gunung Kajang were reported by Lim and Lim (1999). Day (1990) reported larvae from a pool at Gua Tengku Air at 845 m. On 19 March 2001, we collected two adults (ZRC 1.7714-15) from Gua Tengku Air sitting on boulders approximately 2 m from the water 10 m below the surface of the cave floor. On 23 March, 2001, a specimen (LSUHC 4431) was collected from a cave at the summit of Gunung Kajang at 1035 m. On 10 August, 2002 and adult female (LSUPC-F1497) was observed at 210 m elevation along the Tekek-Juara trail. This species occurs from lowland dipterocarp to ridge forests. This species was originally known only from tadpoles and was reported as *Leptobrachium* sp. (Day, 1990) and *Leptotalax gracilis* (Lim and Lim, 1999). Examination of the adults indicated they belonged to the new species *Leptotalax kajangensis* (Grismer et al., 2004).

Family: Bufonidae

Ansonia tiomanica Hendrickson, 1966
(Fig. 10)

Localities. - Gua Sinah at Ulu Lalang (800 m; Hendrickson, 1966b).

New localities. - On 3 November, 2000, a specimen (LSUPC-F439-45) was photographed sitting on the vertical surface of a rock near the top of the Tekek-Juara trail at 220 m. On 19-21 March, 2001, we observed approximately 10 specimens in Gua Tengkuok Air at 845 m on Gunung Kajang. All were climbing on large boulders both in and outside of the cave. This species ranges from lowland dipterocarp to high hill dipterocarp forest in association with boulders in the vicinity of water.

Bufo asper Gravenhorst, 1829

Localities. - Sungai Nipah (80-200 m; Day, 1990).

New localities. - On 21 March 2001, we observed a specimen (LSUPC-F380-81) along the Sungai Mentawak (ca. 195 m) along the water's edge on a downward sloping face of a boulder. On 23 March, 2002, we observed 11 specimens during the day and night sitting on rocks at the edge of and within the Sungai Mentawak of which three (LSUHC 4443, 4447-48) were collected. This species occurs in coastal vegetation and lowland dipterocarp forest.

Bufo melanostictus Schneider, 1799

Localities. - Kampung Tekek (Lim and Lim, 1999).

New localities. - On 7 July, 2001, we collected specimens from Kampung Mukut (ca. 10 m) and on 9 July additional specimens (LSUHC 3754; ZRC 1.8248-49) were collected from the beginning of the Tekek-Juara trail (ca. 80 m) on the forest floor. On 9 July, 2001, a specimen (LSUHC 3814) was collected beneath a board at Kampung Paya (ca. 15 m). This species ranges from coastal vegetation to lowland dipterocarp forest.

Bufo parvus Boulenger, 1877

Localities. - Sungai Paya; Kampung Juara; and Sungai Keliling (Lim and Lim, 1999).

New localities. - Two specimens (JAM 1860-61) from Kampung Tekek were collected on 6 November, 1997. Additional specimens (LSUHC 3969-71, 3976-77, 3981; ZRC 1.8269) were collected on 11-17 July 2001 from the Tekek-Juara trail pitfall traps (142 m) and from Telok Dungun (ca. 25 m; ZRC 1.8263) on 12 July, 2001. This species ranges from coastal vegetation to

lowland dipterocarp forest.

Family: Microhylidae

Chaperina fusca Mocquard, 1892

Localities. - Sungai Air Besar; Teluk Penut; and between Kampung Tekek and Kampung Lalang (Denzer et al., 1989: 27).

New localities. - On 10 July, 2001, a specimen (LSUHC 3833) was collected from Telok Nipah (ca. 20 m) under a flat rock at the edge of a narrow stream. At Telok Penut, tadpoles were also collected from deep holes in rocks located along the shore of a dried-up stream bed on 9 July, 2001 and were observed along the Tekek-Juara Trail in root holes, tree cavities, and pitfall traps from 200-245 m elevation. On 7 July, 2002 adults (LSUHC 4667-71) and tadpoles were found in water catchments within fallen palm fronds along the Sungai Mentawak at 195 m. This species ranges from coastal vegetation to low hill dipterocarp forest.

Kalophrynus pleurostigma Tschudi, 1838
(Fig. 11)

Localities. - Gunung Kajang trail at 245 m in elevation (Escobar et al., 2003).

New localities. - On 17 July, 2002, a specimen (LSUHC 4682) was collected at 200 m elevation along the Tekek-Juara trail. On 9 August, 2002, a specimen (LSUHC 5024) was collected at night on Gunung Kajang at 813 m as it was ascending the vertical surface of a small rock. This species ranges from lowland dipterocarp to high hill dipterocarp forests.

Family: Ranidae

Fejervarya cancrivora Gravenhorst, 1829

Localities. - Kampung Lalang and Kampung Tekek (Hendrickson, 1966b).

New localities. - On 12 July, 2001, a specimen was collected at Telok Dalam (ca. 10 m) and released. The individual was sitting approximately 1 m from the edge of the water. When approached another specimen jumped into the water and buried itself in leaf litter at the bottom of the stream. This species occurs in mangroves and coastal vegetation.

Limnnectes blythii Boulenger, 1920

Localities. - Sedagong; Sungai Air Raja at Kampung Genting; Sungai Durian Kallang at Kampung Paya; Sungai Besar waterfall along Tekek-Juara trail; Sungai Pasal; Sungai Keliling; Sungai Paya; Sungai

Baharu; and Tekek-Juara trail (Lim and Lim, 1999).

New localities. - We add an additional specimen (LSUHC 3832) from Sungai Raya (ca. 100 m) collected on 10 July, 2001 and from the Sungai Mentawak (LSUHC 4642; 195 m) collected on 19 July, 2002. Both specimens were sitting near the water's edge on a large rock at night. Additional specimens (LSUHC 4646-47) were collected from a small stream at the back of Telok Monkey (ca. 3 m) on 19 July, 2002. This species occurs in coastal vegetation and lowland dipterocarp forest.

Limnonectes hascheanus Stoliczka, 1870

Localities. - Sungai Paya (Leong, 2000); Tekek-Juara Trail, Ulu Lalang (Hendrickson, 1966b).

New localities. - On 11 July, 2001, three specimens (LSUHC 3856, 3864, 3868) were collected from the Sungai Besar waterfall on the Tekek-Juara trail (220 m) while sitting near the base of the waterfall on a rocky slope. On 13 July, 2001, a specimen of *L. hascheanus* was observed but not collected at Telok Dalam. On 12 July, 2001 a specimen (LSUHC 3887) was collected from Sungai Dungun (ca. 10 m). Hendrickson (1966b) reported two specimens of this species as "*Rana (Discodeles/Platymantis)* sp." Upon examination of his material (BPBM 14200-2001) we find them to be *L. hascheanus*. This species occurs in lowland dipterocarp forest.

Rana chalconota Schlegel, 1837-1844

Localities. - Tekek-Juara trail; Kampung Tekek; Sungai Keliling; Sungai Mentawak; and Sedagong (Lim and Lim, 1999).

New localities. - On 21 March, 2001, a juvenile (LSUPC-F285) was observed sitting on a leaf approximately 0.5 m above the ground behind a house in Kampung Juara (5 m). On 9 July 2001, three specimens (LSUHC 3803-05; ZRC 1.8255) were collected from Sungai Nipah (10 m). All were found inside large boulder caves situated within the stream. On 12 July, 2001, three specimens (LSUHC 3886, 3909-10) were collected from Telok Dungun (15 m). This species ranges from coastal vegetation to low hill dipterocarp forest.

Rana erythraea Schlegel, 1837-1844

Localities. - Kampung Tekek (Hendrickson, 1966b).

New localities - On 9 July, 2001, a specimen (LSUHC 3815) was collected at sea level from Kampung Paya from along a large pond just behind the beach. On 21 March, 2002, one specimen was found during the day sitting on the branch of a mangrove tree

1 m above the water at Air Batang (ca. 5 m). This species occurs in mangrove and coastal vegetation.

Rana hosii Boulenger, 1891

Localities. - Tekek-Juara trail; Kampung Paya; Sungai Kalang; and Sungai Ayer Besar waterfall on the Tekek-Juara trail (Lim and Lim, 1999).

New localities. - On 13 July, 2001, a specimen was observed along Sungai Dungun, but not collected. On 11 July, 2001, a specimen (LSUHC 3819) was collected along Sungai Raya (ca. 50 m). On the evening of 19 July, 2002, three specimens (LSUHC 4625-26) were collected along the Sungai Mentawak at 195 m in elevation while sitting on vegetation. This species occurs in lowland dipterocarp and low hill dipterocarp forest.

Rana picturata Boulenger, 1920
(Fig. 12)

Localities. - Tributary of Sungai Mentawak (Day, 1990).

New localities. - Day (1990) reported a specimen *Rana signata* from a tributary of the Sungai Mentawak at 300 m. We have examined that specimen (uncatalogued in the British Museum of Natural History) and find it to be *R. picturata*. We report additional specimens of *R. picturata* from the Sungai Mentawak at 195 m collected on 24 March, 2002 (LSUHC 4435-41) and 19 July, 2002 (LSUHC 4636-40). All were found perched on rocks or vegetation along the water's edge during the evening. This species is found in coastal and lowland dipterocarp forest.

Family: Rhacophoridae

Nyctixalus pictus Peters, 1871
(Fig. 13)

Localities. - A single specimen (ZRC 1.8268) was collected from the Tekek-Juara trail (ca. 240 m) on the night of 16 July, 2001 (Leong and Crane, 2002). It differs from other populations of *N. pictus* in that its body and limbs are yellow in coloration instead of orange or brownish. Another specimen was heard calling on 14 July, 2001 along a small stream on the Tekek-Juara trail (ca. 100 m) by LBL and NSY. This specimen constitutes a new record for Pulau Tioman. This species occurs in lowland dipterocarp forest.

Polypedates leucomystax Boie, 1829

Localities. - Kampung Tekek and Kampung Juara (Lim and Lim, 1999).

New localities. - On 7 July, 2001, a specimen (LSUHC 3770) was collected on the Tekek-Juara trail (241 m) while sitting on a leaf approximately 1 m above the ground. On 11 July, 2001, a specimen was observed in the Sungai Dungun (ca. 10 m) but not collected. This species ranges from coastal vegetation to low hill dipterocarp forest.

Theloderma horridum Boulenger, 1903
(Fig. 14)

Localities. - On the evening of 22 March, 2002, one specimen of *Theloderma horridum* was found on the side of a large tree (ca. 1 m in diameter) near the Tekek-Juara trail at 245 m in elevation (Grismer et al. 2003a). On 14 July, 2002, another specimen was found on the Tekek-Juara trail at 140 m elevation. This species is found in lowland dipterocarp forest.

Reptilia

Order: Squamata

Family: Agamidae

Acanthosaura armata Hardwicke and Gray, 1827

Localities. - Tekek-Juara trail (Hendrickson, 1966b).

New localities. - On 13 July, 2001, a specimen (LSUHC 3873) was collected in primary forest south of Kampung Salang (ca. 80 m). On 18 March, 2001 two specimens were observed at Gua Tengku Air on Gunung Kajang at 845 m. One was photographed (LSUPC-L7070-71). The latter specimens had patterns that were considerably darker than those of specimens from lowland forests which appears to be a function of substrate matching. On 17 July, 2002, two specimens were collected at Telok Monkey (ca. 40 m). One (LSUHC 4598) was 1 m above ground level on a small (ca. 10 cm in diameter) tree facing head-up. The other (LSUHC 4599) was observed sitting on a hollow log that was lying on the forest floor. When approached, it ran into the hollow of the log in an attempt to escape. This species ranges from coastal vegetation to high hill dipterocarp forest.

Aphaniotis fusca Peters, 1864

Localities. - Sedagong; Tekek-Juara trail; Kampung Asah (Lim and Lim, 1999).

New localities. - On 18 March, 2001, an individual was photographed (LSUPC-L5931-36) and released on Gunung Kajang at 320 m in elevation. On 12 July, 2001, a male and female (LSUHC 3897; ZRC 2.5147) were

collected from Telok Dalam off the same tree, facing head up approximately 1.5 m above the ground at 20 m. On 9 July, 2001, a sighting was made at Sungai Benuang at 15 m. On 9 July, 2001, an individual (LSUHC 3818) was collected from a tree in Kampung Mukut and another (ZRC 2.5131) from a sapling approximately 0.5 m above the ground at Telok Nipah at 20 m. This species ranges from lowland dipterocarp to low hill dipterocarp forest.

Bronchocela cristatella Kuhl, 1820

Localities. - Tekek-Juara trail near Kampung Juara; Kampung Juara; Kampung Tekek; and Kampung Mukut (Lim and Lim, 1999).

New localities. - On 19 July, 2000, a specimen was photographed (LSUPC-L762) at Kampung Air Batang at 15 m. On 13 July, 2001, a specimen was observed from primary forest in Telok Dalam at 15 m. On 18 July, 2002, one specimen (LSUHC 4613) was observed on a tree in coastal forest at Telok Monkey (ca. 20 m). On 11 August, 2002, a specimen (LSUHC 5046) was collected from 15 m above ground level on a branch at the base of Gunung Kajang at 291 m in elevation. This species occurs from coastal vegetation to low hill dipterocarp forest.

Draco fimbriatus Kuhl, 1820
(Fig. 15)

Localities. - On 8 July, 2001, a specimen (ZRC 2.5130) was collected from a large dipterocarp tree approximately 6 m above the ground at 160 m on the Tekek-Juara trail. On 9 July, 2001, a second specimen (LSUHC 3823) was collected approximately 4 m above the ground at 142 m on the same trail. On 17 July, 2002, a male and female were observed 20 m above ground level on the side of a tree in coastal vegetation at Telok Monkey (ca. 20 m). The male (LSUHC 4601) was collected. These specimens constitute new island records. This species occurs in coastal vegetation and lowland dipterocarp forest.

Draco haematopogon Boie, 1831
(Fig. 16)

Localities. - On 20 March, 2001, an adult male (SVL 106 mm) and female (SVL 100 mm) were collected, photographed (LSUPC-L7072-78), and released from near Gua Tengku Air on Gunung Kajang at 845 m. The male had a yellow dewlap with a black spot at base surrounded by orange and the female had an orangish dewlap with a yellow fringe. Both were found on a large dipterocarp tree facing head up approximate-



Fig. 9. *Leptolalax kajangensis* from Gua Tengkuk Air, Gunung Kajang.



Fig. 10. *Ansonia tiomanica* from Tekek-Juara trail.



Fig. 11. *Kalophrynus pleurostigma* from the Tekek-Juara trail.



Fig. 12. *Rana picturata* from the Sungai Mentawak.



Fig. 13. *Nyctixalus pictus* from the Tekek-Juara trail.



Fig. 14. *Theloderma horridum* from the Tekek-Juara trail.

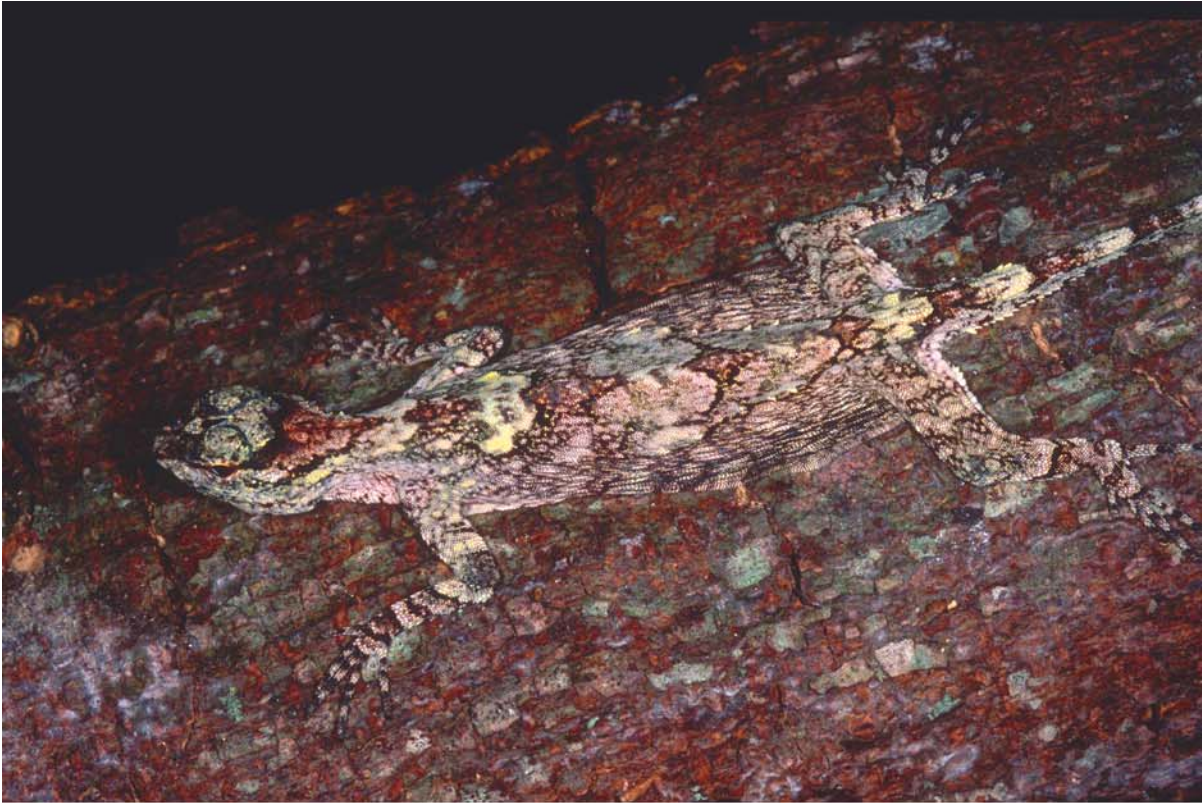


Fig. 15. *Draco fimbriatus* from the Tekek-Juara trail.



Fig. 16. *Draco haematopogon* from Gua Tengku Air, Gunung Kajang.



Fig. 17. *Cnemaspis limi* from the Tekek-Juara trail.



Fig. 18. *Cryptodactylus tiomanensis* from the Tekek-Juara trail.



Fig. 19. *Lipinia vittigera* from Salang.



Fig. 20. *Sphenomorphus* sp. from the summit of Gunung Kajang.



Fig. 21. *Ramphotyphlops albiceps* from the Tekek-Juara trail.



Fig. 22. *Calamaria ingeri* from the Tekek-Juara trail.



Fig. 23. *Chrysopelea pelias* from the Tekek-Juara trail.



Fig. 24. *Dendrelaphis striatus* from Teluk Monkey.



Fig. 25. *Fordonia leucobalia* from Kampung Tekek.



Fig. 26. *Gongylosoma muketense* from Kampung Mukut.



Fig. 27. *Gonyosoma oxycephalum* from Kampung Juara. Photo by Pauli Hien.



Fig. 28. *Oligodon purpurescens* from the Gunung Kajang trail.



Fig. 29. *Rhabdophis chrysargos* from the Tekek-Juara trail.



Fig. 30. *Sibynophis melanocephalus* from Kampung Juara.



Figure 31. *Trimeresurus* sp. (male) from Tekek-Juara trail.

ly 6 m above the ground. These specimens constitute a new island record. This species occurs in high hill dipterocarp forest.

Draco melanopogon Boulenger, 1887

Localities. -Tekek-Juara trail; Sedagong; Kampung Asah; Kampung Paya; and Gunung Kajang at 800 m (Lim an Lim, 1999).

New localities. - On 9 and 11 March, 2001, respectively, a specimen (LSUHC 3809) was collected from Telok Nipah (10 m) and Sungai Nipah (LSUHC 3869) at 20 m. Day (1990) reported an unidentified species of *Draco* at Telok Nipah based on his sighting of two individuals with pinkish dewlaps displaying at one another. We observed individuals with pinkish dewlaps at Telok Nipah and elsewhere to be female *D. melanopogon*. On 13 July, 2001, a specimen (LSUHC 3908) was collected at Telok Dalam in primary forest at 20 m. On 12 July, 2001, several specimens were observed at Telok Dungun at 10-35 m. On 13 July, 2001, a specimen (LSUHC 3903) was collected at Kampung Salang at 10-15 m. Two specimens (LSUHC 3798, 3809) were collected from Sungai Benuang (10 m) and one (LSUHC 3822)

from Sungai Raya on 9 July, 2001 at 40 m. One specimen (LSUHC 5021) was collected on Gunung Kajang at 813 m on 8 August, 2002. This species ranges from coastal vegetation to high hill dipterocarp.

Draco sumatranus Schlegel, 1844

Localities. - Kampung Tekek; Sungai Mukut at Kampung Mukut; and Kampung Air Batang (Lim and Lim, 1999).

New localities. - On 9 March, 2001, a male with a blue head was collected from Sungai Nipah at approximately 20 m. On 8 July, 2001, two specimens (LSUHC 3777; ZRC 2.5121) were collected from the Tekek-Juara trail in lowland forest at 80-150 m. On 12 July, 2001 an individual (LSUHC 3899) from Telok Dalam was found during mid-day in the mangroves approximately 3 m above ground. On 13 July, 2001, a specimen (LSUPC-L3103-04) was photographed at Telok Dungun at an elevation of 15 m. On 13 July, 2001, an individual was observed in coastal vegetation at Kampung Salang at approximately 10 m in elevation. All lizards were found facing head-up on trees. This species ranges from mangrove to lowland dipterocarp forest.

Gonocephalus chamaeleontinus Laurenti, 1768

Localities. - Tekek-Juara trail, Kampung Paya along the trail to Gunung Kajang (Lim and Lim, 1999).

New localities. - On 9 July, 2001 an individual was observed on Sungai Benuang at 15 m. On 10 July, 2001, a specimen (LSUHC 3881) was found at Telok Dungun in primary forest at 20 m. On 13 July, 2001, a specimen was observed from Kampung Salang in primary forest at 10 m. On 19 July, 2002, two specimens (LSUHC 4623-24) were observed at night sleeping on vegetation ca. 5 m above ground level along the Sungai Mentawak at 195 m. On 10 August, 2002, a specimen was observed on a small tree at Gua Tengku Air on Gunung Kajang at 845 m. All were found 2-5 m above the ground on the side of trees facing head-up. This species occurs from lowland dipterocarp to high hill dipterocarp forest.

Gonocephalus grandis Gray, 1845

Localities. - Sungai Asah; Sungai Nipah; Sedagong; and Sungai Air Besar (Lim and Lim, 1999).

New localities. - On 11 July, 2001, a male and a juvenile were sighted on trees along the Sungai Raya but not collected. On 15 July, 2001, a adult male was collected from a trail behind and leading out of Kampung Tekek. On 19 July, 2002, four specimens (LSUHC 4619-22) were observed on trees near the edge of Sungai Mentawak at 195 m. Additional specimens were observed on trees along a small stream at 291 m at the base of Gunung Kajang. This species ranges through lowland dipterocarp to low hill dipterocarp forests primarily in association with streams.

Family Gekkonidae*Cnemaspis kendallii* Gray, 1845

Localities. - Tekek-Juara trail (Lim and Lim, 1999).

New localities. - On 18 March, 2001, individuals were observed at the base of Gunung Kajang and along the Sungai Mentawak (80-200 m). Additional specimens (LSUHC 3797) were collected at Sungai Benuang (9 July, 2001; LSUHC 3797; ca. 20 m), Kampung Paya (9 July, 2001; LSUHC 3811; ca. 15 m), Sungai Raya (11 July, 2001; LSUHC 3820; ca. 12 m), Kampung Salang (12 July, 2001; LSUHC 3878; ca. 10 m), and Telok Dalam (12 July, 2001; observed only). Additional specimens were found at Mukut (15 July, 2002; LSUHC 4566; ca. 50 m) and Telok Monkey (18 and 29 July, 2002; ca. 35 m; LSUHC 4615 and 4666, respectively). All were found on rocks or trees during both day and night. This species ranges from coastal vegetation to low hill dipterocarp forest.

Cnemaspis limi Das and Grismer, 2003
(Fig. 17)

Localities. - Tekek-Juara trail; Gunung Rokam; Gunung Kajang at 950 m (Lim and Lim, 1999).

New localities. - On 19 March, 2001, specimens (LSUPC-L3662-65) were photographed at Gua Tengku Air on Gunung Kajang at 845 m and from the summit at 1035 m. On 10 July, 2001, three specimens (LSUHC 3888, 3902; ZRC 2.5149) were collected in primary forest at Kampung Salang at 20 m. On 11 July, 2001, a specimen was observed at Telok Dungun at 100 m. On 9 July, 2001, a specimen was observed at the Sungai Raya at 25 m. On 17 and 18 July, 2002, two specimens (LSUHC 4596, 4616) were collected off rocks at Telok Monkey (ca. 20 m). On 19 July, 2002, one specimen (LSUHC 4629) was collected from the Sungai Mentawak at 195 m. The Pulau Tioman population was originally reported as *C. nigridia* (Hendrickson, 1966a) but was described as a new species (Das and Grismer, 2003) All specimens were observed on steep faces of large boulders in shaded areas or within deep rock crevices. This species occurs from coastal vegetation to ridge forest.

Cosymbotus craspedotus Mocquard, 1890

Localities. - On 9 November, 1997, a single specimen (JAM 1834) was collected from the palm groves in Kampung Tekek at the base of the Tekek-Juara trail at 50 m while facing head down approximately 3 m above the ground. This constitutes a new island record. This species occurs in coastal vegetation.

Cosymbotus platyurus Schneider, 1792

Localities. - Kampung Tekek (Grismer et al., 2002a).

New localities. - On 13 July, 2001, a juvenile (ZRC 2.5146) was collected in a restaurant on the beach at Kampung Salang. This species occurs in coastal vegetation.

Cyrtodactylus quadrivirgatus Taylor, 1962

Localities. - No locality data provided (Manthey and Grossmann, 1997:228).

New localities. - On 2 November, 2000, a specimen was observed and photographed (LSUPC-L3313) while sitting on a leaf approximately 1.5 m above the ground along the Tekek-Juara trail at 190 m. On 19 2001 March, a single specimen was observed at Gua Tengku Air on Gunung Kajang at 845 m. One specimen (LSUHC 5622) was collected off vegetation along the Sungai Mentawak

at 195 m on 7 August, 2002. This species ranges from lowland dipterocarp to high hill dipterocarp forest.

Cyrtodactylus tiomanensis Das and Lim, 2000
(Fig. 18)

Localities. - Tekek-Juara trail; Gunung Kajang at 400 m and 750 m (Lim and Lim, 1999).

New localities. - On 12 March, 2001, several specimens were observed on large boulders within and around Gua Tengku Air on Gunung Kajang at 845 m. On 20-22 March, 2001, several specimens were observed (LSUPC-L7002-09) on boulders, trees, and leaf-litter at the forest's edge on the beach 1 km south of Kampung Tekek. One specimen (LSUHC 4597) was collected from Telok Monkey (ca. 20 m) on 17 July, 2002. This species ranges from coastal vegetation to high hill dipterocarp forest.

Gehyra mutilata Wiegmann, 1834

Localities. - Kampung Tekek and Kampung Mukut (Hendrickson, 1966a).

New localities. - On 16 March, 2001, a specimen (LSUPC-L6080-84) was photographed during the evening on the Tekek-Juara trail at approximately 200 m. This species occurs in lowland dipterocarp forest and in disturbed habitat.

Gekko monarchus Duméril and Bibron, 1836

Localities. - Sungai Keliling (Hendrickson, 1966a).

New localities. - On 22 March, 2001, specimens (LSUPC-L7044-45) were photographed from the Tekek-Juara trail, on boulders, trees or short vegetation from 50-100 m. On 23 March, 2001, specimens (LSUPC-L7046-49) were photographed on rocks from the boulder caves on the beach 1 km south of Kampung Tekek. This species occurs in coastal vegetation and lowland dipterocarp forest.

Hemidactylus frenatus Duméril and Bibron, 1836

Localities. - Kampung Tekek (Hendrickson, 1966a).

New localities. - On 9 July, 2001, two specimens (LSUHC 3807-08) were collected at Telok Nipah at 5 m beneath the wood of an abandoned shack. On 22 March, 2001, a specimen was collected and released at Kampung Juara. This species occurs in coastal vegetation usually near human habitations.

Ptychozoon kuhli Stejneger, 1902

Localities. - On 16 March, 2001, a specimen (LSUPC-L7010-26) was photographed along the Tekek-Juara trail approximately 3 m above the ground on a large strangler fig at approximately 200 m. On 18 March 2001, an individual was found on the Tekek-Juara trail facing head down on a large dipterocarp tree approximately 6 m above the ground at 250 m. On 10 July, 2001, a single specimen (LSUHC 3835) was found on the Tekek-Juara trail on a large metal pole approximately 3 m above the ground at 142 m. On 16 July, 2001, a specimen was sighted in a coconut palm grove in Kampung Tekek at the base of the Tekek-Juara trail at 80 m. One specimen (LSUHC 5042) was collected from 20 m above ground level on the side of a tree along the Sungai Mentawak at 195 m on 11 August, 2002. These specimens confirm this species' presence on Pulau Tioman, first reported as an unconfirmed sighting by Grismer et al. (2002a). This species ranges from coastal vegetation to lowland dipterocarp forest.

Family: Scincidae

Dasia olivacea Gray, 1839

Localities. - Kampung Tekek; Kampung Paya; Sungai Asah (Hendrickson, 1966a).

New localities. - On 16 March, 2001, a specimen was observed on the Tekek-Juara trail at 200 m in elevation in primary forest. Another was seen on a large dipterocarp tree approximately 2.5 m above the ground at 80 m. On 10 July, 2001, an individual (LSUHC 3863) was collected from Kampung Mukut at 5 m. On 12 July, 2001, a sighting of a *D. olivacea* was recorded at Kampung Salang at 10 m. This species occurs from coastal vegetation to low hill dipterocarp forest.

Emoia atrocostata Lesson, 1830

Localities. - On 11 July, 2001, an individual was sighted at Kampung Salang at 10 m on a wooden bridge near the coast. On the same day a specimen was collected from intertidal rocks on neighboring Pulau Tulai (Grismer et al., 2001b). This species occurs in the mangroves and along rocky shorelines (see Hendrickson, 1966a) but remains unconfirmed for Pulau Tioman.

Eutropis multifasciata Kuhl, 1820

Localities. - Sedagong; Sungai Pasal; Tekek-Juara trail; and Kampung Paya (Lim and Lim, 1999).

New localities. - On 11 July, 2001, several specimens were sighted at Telok Dungun and Telok Dalam (10-35 m). On 12 July, 2001, specimens were observed

from Kampung Salang (10 m) and from rock cracks in the waterfall in the Sungai Raya at 80 m. One individual observed at the waterfall jumped off a rocky face into the water approximately 2 m below to escape. Many other specimens were observed along the Sungai Mentawak on 19-22 July, 2002. Juveniles were found on rocks within the stream and would jump into the water to escape. Some would dive below the surface and cling to the edge of rocks for several minutes. Many others were observed along the Gunung Kajang trail from 195-245 m in elevation. This species ranges from coastal vegetation to low hill dipterocarp forest.

Larutia seribuatensis Grismer, Leong, and Yaakob, 2003

Localities. - On 20 August, 2002, an individual (LSUPC-L182) was observed abroad on the forest floor in high hill dipterocarp forest at ca. 400 m immediately following a rain shower. This species is also known from coastal vegetation on Pulau Tulai (Grismer et al., 2003). This species ranges from coastal vegetation to high hill dipterocarp forest. It is currently being described as a new species endemic to Pulau Tulai and Pula Tioman (Grismer et al., 2003).

Lipinia vittigera Boulenger, 1894
(Fig. 19)

Localities. - Unconfirmed sighting at Kampung Asah (Lim and Lim, 1999).

New localities. - From 10-16 July, 2001, specimens were sighted at Sungai Raya (40 m), Tekek-Juara trail (210 m), the base of the Tekek-Juara trail (45 m; a juvenile with a bright orange tail), Telok Nipah (25 m), and Telok Dungun (30 m). One specimen (ZRC 2.5151) was collected in primary forest at Kampung Salang at 40 m. One specimen was cited on a tree at the base of Gunung Kajang at 291 m on 24 March, 2002. All were observed foraging on the sides of large trees 3-5 m above the ground. A hatchling (LSUHC 4814) was collected in flotsam and coral at the water's edge in Telok Monkey. These specimens confirm this species' presence on Pulau Tioman. This species ranges from coastal vegetation to low hill dipterocarp forest.

Lygosoma bowringii Günther, 1864

Localities. - On 15 March, 2001, a specimen was collected beneath a trash can in Kampung Tekek, photographed (LSUPC-L6058-66), and released. On 18 March, 2001, a specimen was observed at Kampung Juara at 5 m. On 8 July, 2001, a specimen was collect-

ed from the Tekek-Juara trail at 140 m. On 9 July, 2001, a specimen was sighted in Kampung Paya at sea level. This species ranges from coastal vegetation to lowland dipterocarp forest.

Sphenomorphus scotophilus Boulenger, 1900

Localities. - Gunung Kajang at 845 m and the Tekek-Juara trail (Lim and Lim, 1999).

New localities. - On 19 March, 2001, two specimens (LSUPC-L3286-87) were observed and photographed from the summit of Gunung Kajang at 1035 m and at Gua Tengku Air at 845 m. On 9 July, 2001, a specimen (LSUHC 3806) was collected at Sungai Benuang at 20 m. On 9 July, 2001, a specimen (ZRC 2.5135) was collected from the rocks in the Sungai Raya at 45 m. Several were seen on rocks along the trail south of Salang on 13 July, 2001. Additional specimens were collected from Telok Nipah (9 July, 2001; LSUHC 3806), Mukut (9 July, 2001; LSUHC 3821), and Telok Monkey (17 July, 2001; LSUHC 4595 between 10 m and 20 m). This species ranges from coastal vegetation to ridge forest.

Sphenomorphus sp.
(Fig. 20)

New localities. - On 22 March, 2002, a specimen (LSUHC 4429) of a new species of *Sphenomorphus* was collected along the Gunung Kajang Trail at 510 m in elevation. On 8 August, 2002, a hatchling of the same species (LSUHC 5031) was collected on the summit of Gunung Kajang at 1035 m. Many other specimens were observed in the leaf litter of the forest floor between 300-1035 m on Gunung Kajang. This species ranges from low hill dipterocarp to ridge forest. It is currently being described (Grismer, in prep.).

Family: Varanidae

Varanus nebulosus Gray 1831

Localities. - Sedagong; Kampung Air Batang; Kampung Salang; and Kampung Tekek (Lim and Lim, 1999).

New localities. - On 18 March, 2001, several individuals were observed in Kampung Juara basking on coconut palms 1-6 m above the ground. On 17 March, 2001, a juvenile and adult were observed along the Tekek-Juara trail (100 m and 275 m). *Varanus nebulosus* were also seen at Telok Dalam, Telok Dungun, Kampung Paya, Kampung Mukut, and Telok Nipah (0-80 m). This species ranges from coastal vegetation to lowland dipterocarp forest.

Varanus salvator Laurenti, 1768

Localities. - Sedagong; Kampung Salang; Kampung Asah; Kampung Tekek (Lim and Lim, 1999).

New localities. - On 9 July, 2001, a sighting of a *Varanus salvator* approximately 1.5 m in SVL was made in Kampung Paya at 5 m. On 16 March a sighting of a specimen was recorded in Telok Nipah. On 19 March, 2002, two specimens were observed along the banks of the Sungai Mentawak at 195 m 2 km inland from the coast. This species occurs in mangroves, coastal vegetation, and lowland dipterocarp forest provided there are waterways serving as dispersal corridors.

Family: Dibamidae

Dibamus tiomanensis Diaz, Leong, Grismer and Yaakob, 2004

Localities. - Kampung Paya (Lim and Lim, 1999); Tekek-Juara trail at 80 m (Diaz et al. 2004).

New localities. - Lim and Lim (1999) reported this population as *D. cf. alfredi* based on the only known specimen (ZRC 2.3410). On 14 August, 2002 a specimen was found beneath a log at Air Batang at sea level. This species is found from mangrove to lowland dipterocarp forest.

Family: Typhlopidae

Ramphotyphlops albiceps Boulenger, 1898
(Fig. 21)

Localities. - On 8 July, 2001, a specimen (ZRC 2.5125) was collected from the Tekek-Juara trail, at 241 m in elevation. It was unearthed 0.3 m below the surface of the ground in rocky soil while placing pit fall traps. This constitutes a new island record. This species occurs in low hill dipterocarp forest.

Ramphotyphlops braminus Daudin, 1803

Localities. - Kampung Juara (Day, 1990).

New localities. - On 21 March, 2001, a specimen (LSUPC-S2814) was found beneath a large piece of wood in Kampung Tekek (ca. 10 m) and photographed. On 9 July, 2001, an individual (ZRC 2.5134) was collected at Kampung Paya at 5 m. This species occurs in mangrove and coastal vegetation.

Family: Pythonidae

Python reticulatus Schneider, 1801

Localities. - Kampung Tekek and north of Telok

Dungun (Hendrickson, 1966a).

New localities. - On 6 August, 2001, K. P. Lim (pers. comm.) informed LLG of a specimen measuring approximately 5 m SVL he observed in Kampung Paya on 17 July, 2001. Several specimens have been observed by JLG, LLG, and TMY at Air Batang, Berjaya, Kampung Juara, and Telok Nipah from 0-15 m. This species ranges from mangrove to lowland dipterocarp forest.

Family: Colubridae

Ahaetulla prasina Boie, 1827

Localities. - Tekek-Juara trail at the Sungai Air Besar crossing (Hendrickson, 1966a).

New localities. - On 20 March, 2001, a specimen was observed and photographed (LSUPC-S2892-99) at Gua Tengku Air at 845 m. On 13 July, 2001, an adult specimen (LSUHC 3914) was collected in lowland forest at Telok Dungun. Two specimens (LSUHC 4687-88) were collected from the Tekek waterfall trail at ca. 100 m on 18 July, 2002. This species occurs from coastal vegetation to high hill dipterocarp forest.

Boiga drapiezii (Boie, 1827)

Localities. - Tekek-Juara trail at 213 m in elevation. One specimen (LSUPC-S3797) was collected on 14 July 2003 2 m above the ground as it was crawling down the side of a palm tree. This species represents a new record for P. Tioman.

Boiga nigriceps Günther, 1863

Localities. - Kampung Juara at 100 m (Hien et al. 2001).

New localities. - On 26 March, 2002, an adult (LSUHC 4494) was found on the Tekek-Juara trail at night at ca. 175 m as it was crawling across the trail. On 16 July, 2002, and juvenile (LSUHC 4591) was found at night 2 m above the ground in a small tree at the damn on the Tekek-Juara trail at 220 m. On 18 July, 2002, an adult (LSUHC 4686) was found crawling through brush on the Tekek waterfall trail at 185 m. This species ranges from coastal vegetation to lowland dipterocarp.

Calamaria ingeri Grismer, Kaiser, and Yaakob, 2004
(Fig. 22)

Localities. - On 22 July, 2002, a specimen of *Calamaria* (LSUHC 4716) was found within a trap in the lower pitfall trap array. On 23 July, 2002, another specimen (LSUHC 4800) was found in the same trap.

These specimens resemble *C. lovii gimletti* in coloration but lack the enlarged second supralabial of all *C. lovii* and have unique combinations of characters that set them apart from all other *Calamaria* (Inger and Marx, 1965). This population was described as *C. ingeri* (Grismer et al., 2004a). This species is found in lowland dipterocarp forest.

Chrysopelea pelias Linnaeus, 1758
(Fig. 23)

Localities. - Kampung Juara (Day, 1990).

New localities. - On 19 March, 2001, a specimen (LSUPC-S2793-2801) was observed and photographed on a large dipterocarp approximately 4 m above the ground on the Tekek-Juara trail at 195 m. We collected this snake two hours after we had collected a *Ptychozoon kuhli* from the same tree. The snake was facing head down and rapidly tongue flicking the spot where we previously collected the *P. kuhli*. We suspect it may have been scent trailing the gecko. On 11 July 2001, a specimen (ZRC 2.5145) was collected from the Tekek-Juara trail at 140 m crawling across a large boulder. This species occurs in lowland dipterocarp forest.

Dendrelaphis cyanochloris Wall, 1921

Localities. - Tekek-Juara trail and Kampung Juara (Hien et al., 2001).

New localities. - On 17 July 2001, one specimen (LSUHC 4611) was found at night sleeping in brush along the Tekek waterfall trail at 100 m. This species occurs in lowland dipterocarp forest.

Dendrelaphis pictus Gmelin, 1789

Localities. - Tekek-Juara trail (Grismer et al., 2002a).

New localities. - On 6 August 2001, K. P. Lim (pers. com., 2001) informed LLG of an observation of *D. pictus* in Kampung Juara on 21 July 2001. This species ranges from coastal vegetation to low hill dipterocarp forest.

Dendrelaphis striatus Cohn, 1906
(Fig. 24)

Localities. - Kampung Juara (Wood et al., 2003).

New localities. - On 21 July, 2001, one specimen (LSUHC 4792) was observed sleeping 2 m above ground level on a trail in Telok Monkey at 80 m. This species is found in coastal and lowland dipterocarp forest and constitutes a new record for this island.

Dryocalamus subannulatus Duméril, Bibron and
Duméril, 1854

Localities. - On beach 1 km south of Kampung Tekek (Grismer et al., 2002a).

New localities. - On 14 August, 2002, one specimen (LSUHC 5051) was observed at night crawling through the branches of a tree 2 m above ground level at the bottom of the Tekek-Juara trail near the Mosque at 80 m. This species is found in coastal and lowland dipterocarp forest.

Elaphe flavolineata Schlegel, 1837

Localities. - Kampung Tekek (Wood et al. 2004)

New localities. - On xx March, 2003, one juvenile specimen (LSUHC- S3752) was found dead on the road in Kampung Tekek at 10 m in elevation. This species is found in coastal vegetation.

Elaphe taeniura Cope, 1861

Localities. - 100 m behind last house at Kampung Juara (Hien et al., 2001).

New localities. - On 19 July, 2002, one specimen (LSUHC 4675) was observed 2 m above ground level crawling on the top of a large boulder on a trail in Telok Monkey at 40 m immediately following an afternoon rainshower. This species is found in coastal and lowland dipterocarp forest.

Enhydryis plumbea Boie, 1827

Localities. - Sungai Raya (Lim and Lim, 1999).

New localities. - On 9 November, 1997, two specimens (at PERHILITAN uncatalogued) were collected from the Sungai Besar in Kampung Tekek. On 9 July, 2001, a specimen (LSUHC 3817) was collected from beneath a log at Kampung Paya at sea level. This species occurs in mangroves and coastal vegetation.

Fordonia leucobalia Schlegel, 1837
(Fig. 25)

Localities. - On 15 July, 2001, a specimen (LSUPC-S3253) was collected from the drainage canals at Persona Island Resort in Kampung Tekek at 5 m and is currently maintained as a living specimen at the Raffles Museum of Biodiversity Research at the National University of Singapore. This constitutes a new island record. This species occurs in the mangroves.

Gongylosoma mukutense Grismer, Das, Leong, 2003
(Fig. 26)

Localities. - On 10 July, 2001, a specimen (ZRC 2.5141) was found at 20 m in coastal vegetation on the trail that leads from Kampung Mukut to Sungai Raya. The specimen was being eaten by a juvenile *Ptyas carinatus*. An additional specimen (LSUHC 4680) was collected from 190 m in elevation along the Tekek-Juara trail on 16 July, 2002. This species occurs in coastal vegetation and lowland dipterocarp forest.

Gonyosoma oxycephalum Boie, 1827
(Fig. 27)

Localities. - A sight record from Nipah was reported by Day (1990).

New localities. - A specimen was found resting on a branch 10 m above the surface of a small river in Kampung Juara. It was collected and photographed by Pauli Hien. A photo of that specimen is deposited at La Sierra University (LSUPC-S3633). This specimen constitutes a new island record. This species occurs in coastal forest.

Lepturophis albofuscus Duméril, Bibron and Duméril, 1854

Localities. - Sungai Nipah (Day, 1990).

New localities. - Two specimens (LSUHC 4588-89) were collected at night along the Tekek-Juara trail at 180 m and 220 m, respectively, on 16 July, 2002. An additional juvenile specimen (ZRC 2.5144) with a black and white banding pattern was collected from the Tekek-Juara trail at 200 m on 11 July, 2001. An additional specimen (LSUHC 4411) was collected along the Sungai Mentawak at 195 m on 16 July, 2002. This species occurs in lowland dipterocarp forest.

Liopeltis tricolor Schlegel, 1837

Localities. - Top of Tekek-Juara trail at 245 m (Hendrickson, 1966a).

New localities. - A single adult (LSUHC 5037) was collected during the day along the Gunung Kajang trail at 618 m while resting on a small branch 2 m above ground level. This species ranges from lowland dipterocarp to high hill dipterocarp forest.

Oligodon purpurascens Schlegel, 1837
(Fig. 28)

Localities. - Ulu Lalang and the Tekek-Juara trail (Hendrickson, 1966a; Day, 1990).

New localities. - On 9 July, 2001, a shed skin (LSUHC 3988) with a pattern matching that of *Oligodon purpurascens* was found at Telok Dungun within a rotting log at 15 m. On 11 August, 2002, an adult was found crawling across the forest floor during the day at 320 m on the Gunung Kajang trail. The Pulau Tioman population is unlike all others in that the snakes are bright red-orange in dorsal color and have smooth as opposed to irregular dorsal band margins. This population is under further investigation. This species ranges from lowland dipterocarp forest to high hill dipterocarp forest.

Oligodon booliati Leong and Grismer, 2004

Localities. - Ulu Lalang (Hendrickson 1966a).

New localities. - On 16 July, 2001 a specimen (ZRC 2.5153) was collected from the Tekek-Juara trail at approximately 150 m in elevation. It differs from all other *Oligodon* by its bright red coloration and extremely faint banding pattern. Its scale counts fall within the range of those of *O. signatus* (Leong and Grismer, 2004). Hendrickson (1966a) reported *O. signatus* at Ulu Lalang in high hill dipterocarp forest. Upon examination of that specimen (BPBM 13933) we find that it conforms to the new species (ZRC 2.5153) reported above. This species ranges from lowland dipterocarp forest to high hill dipterocarp forest.

Pareas vertebralis Boulenger, 1900

Localities. - Gua Tengkok Air at 810 m (Youmans et al., 2003).

New localities. - On xx March, 2003 an adult specimen (LSUPC S3696-4000) was observed crawling through the lower branches of a small tree approximately 1.5 m above the ground. This species is known only from high hill dipterocarp forest.

Psammodynastes pulverulentus Boie, 1827

Localities. - Summit of Gunung Kajang at 1035 m (Day, 1990).

New localities. - On 17 July, 2002 a juvenile specimen (LSUHC 4684) was collected along the Tekek-Juara trail while sleeping on a leaf at 230 m. Another specimen was collected and photographed (LSUPC-S3631) from Air Batang near sea level by Johan van Rooijen. This species ranges from coastal vegetation to ridge forest.

Ptyas carinatus Günther, 1858

Localities. - Tekek-Juara trail (Grismer et al., 2002a).

New localities. - On 3 November, 2000, a large adult (LSUPC-S2774-80) was photographed on the Tekek-Juara trail at 240 m in elevation. On 10 July 2001, a juvenile (ZRC 2.5142) was found on the trail that leads from Kampung Mukut to the Sungai Raya at 20 m. The latter specimen was found eating a *Gongylosoma mukutense*. On 20 July, 2002, an adult was found crawling during the day on the Tekek waterfall trail at 100 m. This species ranges from coastal vegetation to lowland dipterocarp forest.

Rhabdophis chrysargos Schlegel, 1837
(Fig. 29)

Localities. - Forest behind Kampung Juara (Henrickson, 1966a).

New localities. - Hien et al. (2001) report this species from the Sungai Mentawak at 150 m, at the mouth of the Sungai Mentawak at sea level, and at Tanjung Pisang Kera and Tanjung Batu Pulau at sea level. We found a specimen (LSUHC 4791) at 80 m on the Tekek-Juara trail near the Mosque. Hien et al. (2001) report this population as *Amphiesma* sp. All specimens we examined are within the variation reported for *Rhabdophis chrysargos* except for coloration. Specimens from the Pulau Tioman differ from others in that adults are red anteriorly and juveniles are red-orange throughout. Also, the white nuchal line is faint to absent. This species occurs from mangroves to lowland dipterocarp forest.

Sibynophis melanocephalus Gray, 1834
(Fig. 30)

Localities. - On 18 July 2002, an adult (LSUHC 4683) was found crawling through the grass in Kampung Juara (Grismer et al., 2003). During capture, it voluntarily broke off two sections of its tail in defense. This specimen constitutes a new record for Pulau Tioman. This species occurs in coastal vegetation.

Family Elapidae*Calliophis intestinalis* Laurenti, 1768

Localities. - Telok Nipah and the Tekek-Juara trail (Day, 1990).

New localities. - On 19 March, 2001, a specimen (LSUPC-S1038-40) was photographed on the trail to

Gunung Kajang at approximately 100 m in elevation near the Sungai Mentawak. On 19 July, 2002, one specimen (LSUHC 4617) was taken from a pitfall trap from the upper array at 241 m. On 10 August, 2002, a specimen (LSUHC 5047) was collected crawling through the leaf litter at Gua Tenguk Air at 845 m on Gunung Kajang. This species occurs from lowland dipterocarp to high hill dipterocarp forest.

Ophiophagus hannah Cantor, 1836

New localities. - A large adult (ca. 3.5 m) was photographed by Johan van Rooijen in March, 2002 at Air Batang at sea level (Van Rooijen and Van Rooijen, 2002). On Pulau Tioman this species is known only from coastal vegetation but local people say it occurs throughout the island (Hendrickson, 1966a). This species occurs in mangrove and coastal vegetation.

Family: Viperidae*Trimeresurus* sp.
(Fig. 31)

Localities. - Gunung Kajang at 400 m (Lim and Lim, 1999); Gua Tenguk Air at 845 m (Day, 1990).

New localities. - On the evening 21 July, 2002, a male was collected while sitting 7 m above ground level on the end of a branch along the Tekek-Juara trail at 210 m. Lim and Lim (1999) referred to this species as *Trimeresurus* cf. *popeiorum*. Its specific status is currently being investigated. This species ranges from lowland to high hill dipterocarp forest.

Results and Discussion

The amphibians and reptiles of Pulau Tioman have varying patterns of distribution (Table 1). Some species (i.e., *Cyrtodactylus tiomanensis* and *Psammodynastes pulverulentus*) range throughout many different vegetation zones from coastal vegetation to ridge forest whereas others, such as *Philautus petersi*, *Draco haematopogon* and *Pareas vertebralis* are restricted to only high elevations in high hill dipterocarp and/or ridge forest (Table 1). The majority of the species, however, are found in lowland dipterocarp forest (Table 1). This region supports 74% of the amphibians, 76% of the lizards, and 74% of snakes, totaling 74% of the island's species composition. The high species diversity in this vegetative zone is due largely to its varied habitat and microhabitat composition. Here, the terrain is characterized by many large boulder outcrops and fast flowing, boulder-strewn streams. The crevices, exfoliations, and shaded refugia offered by the boulders, along with the additional microhabitats these features provide along a water course, add

greatly to the microhabitat diversity of this forest. Such microhabitat diversity allows many species to specialize into narrow environmental zones. In fact, species which range throughout all the vegetative zones (i.e., *Sphenomorphus scotophilus* and *Cyrtodactylus tiomanensis*) do so because of their association with the microhabitats offered by boulders. There are more restricted species such as *Ansonia tiomanica* which occur only in habitats with large boulders in the vicinity of water at elevations above 220 m. Whereas others (i.e., *Rana hosii*, *Ichthyophis* sp., *Dogania subplana*, *Gonocephalus grandis*) are confined to riparian habitats.

The species composition of the distribution patterns will undoubtedly change with the acquisition of additional specimens. Many of the species reported from Pulau Tioman are known from a limited number of individuals and thus, appear to exist in a limited range of habitats. These species range throughout a far greater number of habitats on peninsular Malaysia and so it is likely they do so as well on Pulau Tioman. However, even with the acquisition of new material the generality of the observed trends in habitat use are not likely to change significantly.

There are two sightings of unconfirmed species on Pulau Tioman listed in an unpublished report by Day (1990). Day's sightings range from specimens he actually observed to second hand reports he received from locals, vacationers, and friends. Species he personally observed (i.e., *Chrysopelea paradisi*; see Lim and Lim, 1990 for discussion) are considered as potentially present. The others, *Leiolepis belliana* and *Elaphe porphyracea* are not considered noteworthy herein. Day (1990) also reported *Rana doriae* from a small tributary of the Sungai Mentawak at 290 m. Examination of these specimens (uncatalogued in the British Museum of Natural History) show them to be *Limnonectes blythii*. Hien et al. (2001) report that the *Lycodon effraenis* reported by Manthey and Grossman (1997) was a juvenile *Lepturophis albofuscus*.

Acknowledgments

We thank Mr. Sahir bin Othman, Director of Wildlife, PERHILITAN, for permission to conduct field work in the Seribuat Archipelago and Peter Ng, Chang Man Yang and Kelvin Kok Peng Lim (ZRC) and Carla H. Kishinami (BPBM) for permitting us to examine material under their care. We also thank all the Malaysians and American students of the Tropical Field Biology classes BIOL 487F and G of 2001 and 2002, respectively for their help in the field. For comments on the manuscript we thank J. McGuire and R. Brown.

Literature Cited

- Ashton, P. S. 1995. Biogeography and ecology. In: Soepadmo, E. & Wong, K. M. (eds.) Tree Flora of Sabah and Sarawak. Vol. 1. Forestry Research Institute Malaysia, Sabah Forest Department and Sarawak Forest Department, Kuala Lumpur. Pp. XLIII-LI.
- Boulenger, G. A. 1912. A Vertebrate Fauna of the Malay Peninsula: Reptilia and Batrachia. Taylor and Francis, London. 294 pp.
- Das, I. and L. L. Grismer. 2003. Two new species of *Cnemaspis* Strauch, 1887 (Squamata: Gekkonidae) from the Seribuat Archipelago, Pahang and Johor states, West Malaysia. *Herpetologica* 59:544-552.
- Day, M. 1990. Zoological Research. In: Day, M. and T. Mowbrey (eds.). University of Bristol Tioman Archipelago Expedition, Peninsular Malaysia, 1988, Final Report. Unpublished Report pp. 25-43.
- Denzer, W., U. Manthey and C. Steiof, 1989. Erstnachweis microhylider Froesche auf Pulau Tioman-West-Malaysia. *Sauria* 11:27-30.
- de Haas, C. P. J. 1949. The genus *Natrix* in the collection of the Raffles Museum and its distribution in the Malay Peninsula. *Bulletin of the Raffles Museum* 19:78-97.
- Diaz, R. E., T. M. Leong, L. L. Grismer, and N. Yaakob. 2004. A new species of *Dibamus* (Squamata: Dibamidae) from West Malaysia. *Asiatic Herpetological Research* 10:1-7
- Escobar, III, R. A., J. L. Grismer, and T. M. Youmans. 2003. *Kalophrynus pleurostigma*. Geographic distribution. *Herpetological Review* 33:317-318.
- Escobar, III, R. A., J. Castro, D. Morgan, S. M. Hover, T. R. Stutz, K. McCloskey, and R. Gregory. 2002a. Additions to the herpetofauna of Pulau Aur, Johor, West Malaysia. *Hamadryad* 27:287-288.
- Escobar, III, R. A., T. M. Youmans, J. L. Grismer, P. L. Wood, S. D. Kendall, J. Castro, D. Morgan, C. Rasmussen, T. Magi, T. R. Stutz, S. M. Hover, C. Raynor, K. McCloskey, A. Hunter, J. M. Bernard, N. Hinojosa, T. Dyer, J. Anlauf, J. Martinez, S. Andreiko, R. Gregory, L. S. Yeen, H. Kaiser, and L. L. Grismer. 2002b. First report on the herpetofauna of Pulau Tinggi, Johor, West Malaysia. *Hamadryad* 27:259-262.

- Grismer, J. L., R. A. Escobar, III, and T. M. Youmans. 2003a. *Theلودerma horridum*. Geographic distribution. Herpetological Review 33:22.
- Grismer, J. L., T. M. Leong, and N. S. Yaakob. 2003. Two new Southeast Asian skinks of the genus *Larutia* and intrageneric phylogenetic relationships. Herpetologica 59:552-564.
- Grismer, J. L., C. Rasmussen, and P. Wood, Jr. 2003. *Sibynophis melanocephalus*. Geographic distribution. Herpetological Review 34:266.
- Grismer, L. L., I. Das, and T. M. Leong. 2003b. A new species of *Gongylosoma* (Squamata: Colubridae) from Pulau Tioman. Herpetologica 59:565-572.
- Grismer, L. L., H. Kaiser, and N. S. Yaakob. 2004. A new species of reed snake of the genus *Calamaria* Boie, 1827 from Pulau Tioman, Pahang, West Malaysia. Hamadryad 28:1-6.
- Grismer, L. L., J. L. Grismer, and T. M. Youmans. 2004b. A new species of *Leptotalax* (Anura: Megophryidae) from Pulau Tioman. Asiatic Herpetological Research 10:8-11.
- Grismer, L. L., J. A. McGuire, R. A. Sosa, and H. Kaiser, 2002a. Revised checklist and comments on the terrestrial herpetofauna of Pulau Tioman, Peninsular Malaysia. Herpetological Review 33:26-29.
- Grismer, L. L., N. S. Yaakob, L. B. Liat, T. M. Leong, I. Das, R. A. Sosa, J. L. Grismer, K. M. Crane, R. E. Diaz, S. V. Figueroa, C. A. Ledbetter, S. C. Newbold, S. R. Newbold, C. P. Patel, J. Castro, R. A. Escobar III, S. Guerrero, J. W. Pinedo, and Hinrich Kaiser. 2001a. First report on the herpetofauna of Pulau Aur, Johor, West Malaysia. Hamadryad 26:350-353.
- Grismer, L. L., N. S. Yaakob, L. B. Liat, T. M. Leong, I. Das, R. A. Sosa, J. L. Grismer, K. M. Crane, R. E. Diaz, S. V. Figueroa, C. A. Ledbetter, S. C. Newbold, S. R. Newbold, C. P. Patel, J. Castro, R. A. Escobar III, S. Guerrero, J. W. Pinedo, P. E. Jones, and Hinrich Kaiser, 2001b. Report on the herpetofauna of Pulau Tulai, West Malaysia. Hamadryad 26:369-371.
- Hendrickson, J. R. 1966a. Observations on the fauna of Pulau Tioman and Pulau Tulai. 5. The reptiles. Bulletin of the National Museum of Singapore 34:53-71.
- Hendrickson, J. R. 1966b. Observations on the fauna of Pulau Tioman and Pulau Tulai. 6. The amphibians. Bulletin of the National Museum of Singapore 34:72-84.
- Hien, P., W. Grossmann, and C. Schäfer. 2001. Beitrag zur Kenntnis der landbewohnenden Reptilienfauna von Pulau Tioman, West-Malaysia. Sauria 23:11-28.
- Inger, R. F. and H. Marx. 1965. The systematics and evolution of the Oriental colubrid snakes of the genus *Calamaria*. Fieldiana: Zoology 49:1-304.
- Inger, R. F. and H. K. Voris. 2001. The biogeographical relations of the frogs and snakes of Sundaland. Journal of Biogeography 28:863-891.
- Latiff, A., I. F. Hanum, A. Z. Ibrahim, M. W. K. Goh, A. H. B. Loo, and H. T. W. Tan. 1999. On the vegetation and flora of Pulau Tioman, Peninsular Malaysia. Raffles Bulletin of Zoology. Supplement 6:11-72.
- Leong, T. M. 2000. *Limnonectes hascheanus*. Geographic distribution. Herpetological Review 31:182.
- Leong, T. M. and K. Crane. 2002. *Nyctixalus pictus*. Geographic distribution. Herpetological Review 33:62.
- Leong, T. M. and L. L. Grismer. 2004. A new species of kukri snake, *Oligodon* (Colubridae) from Pulau Tioman, West Malaysia. Asiatic Herpetological Research 10:12-16.
- Lim, K. K. P., and L. J. Lim. 1999. The terrestrial herpetofauna of Pulau Tioman, Peninsular Malaysia. Raffles Bulletin of Zoology. Supplement 6:131-155.
- Manthey, U. and W. Grossmann. 1997. Amphibien & Reptilien Südasiens. Natur und Tier, Verlag 512 pp.
- Smith, M. A. 1930. The Reptilia and Amphibia of the Malay Peninsula from the Isthmus of Kra to Singapore including the adjacent islands. Bulletin of the Raffles Museum 3:1-14.
- Van Rooijen, J. and M. Van Rooijen. 2002. Einige Ergänzungen, Berichtigungen und neue Beobachtungen zur herpetofauna von Pulau Tioman, West Malaysia. Sauria 24:3-12.

- Wood, P. L., T. M. Youmans, C. Raynor, J. M. Bernard, N. Hinojosa, T. Dyer, S. Andreiko, P. P. van Dijk, W. Wuertz, L. S. Yeen, and N. A. Elias. 2002. First report on the herpetofauna of Pulau Dyang, Johor, West Malaysia. *Hamadryad* 27:284-285.
- Wood, P. L., N. A. Elias, and D. Morgan. 2003. *Dendrelaphis striatus*. Geographic distribution. *Herpetological Review* 34:264.
- Wood, P. L., T. M. Youmans, and T. R. Szutz. 2004. *Elaphe flavolineata*. Geographic distribution. *Herpetological Review* 34:88.
- Wood, P. L., T. M. Youmans, J. L. Grismer, J. Wheatly, S. Wright, C. Valdivia, A. Ponce, L. Escobar, S. Amin, P. Baker, J. Bernard, S. Looper, N. Marsh, L. Martin, N. Padilla, R. Rosser, A. Srivastava, V. Srivastava, X. Wright, L. S. Yeen, H. Kaiser, and L. L. Grismer. 2004a. First report of the herpetofauna of Pulau Sibul, Johor, West Malaysia. *Hamadryad*, in press.
- Wood, P. L., H. Kaiser, S. Looper, T. M. Youmans, J. L. Grismer, and L. L. Grismer. 2004b. First report on the herpetofauna of Pulau Besar, Johor, West Malaysia. *Hamadryad*, in press.
- Youmans, T. M., R. E. Escobar, III, J. L. Grismer, L. L. Grismer, and R. Johnson. 2002. First report on the herpetofauna of Pulau Pemanggil, West Malaysia. *Hamadryad* 27:148-149.
- Youmans, T. M., P. L. Wood, and T. R. Szutz. 2003. *Pareas vertebralis*. Geographic distribution. *Herpetological Review* 34:389.